The Psychology of Trolling and Lurking:
The Role of Defriending and Gamification for Increasing Participation in Online Communities Using Seductive Narratives

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ABSTRACT

The rise of social networking services have furthered the proliferation of online communities, transferring the power of controlling access to content from often one person who operates a system (sysop), which they would normally rely on, to them personally. With increased participation in social networking and services come new problems and issues, such as trolling, where unconstructive messages are posted to incite a reaction, and lurking, where persons refuse to participate. Methods of dealing with these abuses included defriending, which can include blocking strangers. The Gamified Flow of Persuasion model is proposed, building on work in ecological cognition and the participation continuum, the chapter shows how all of these models can collectively be used with gamification principles to increase participation in online communities through effective management of lurking, trolling, and defriending.

INTRODUCTION

The study of online communities has led to such colourful expressions as trolling, flaming, spamming, and flooding being developed in order to describe behaviours that benefit some people while disrupting others (Lampe & Resnick, 2004). Since the proliferation of technologies like the '*circle-of-friends'* (COF) for managing friends lists in online communities (Romm & Setzekom, 2008), the use of the Internet to build online communities, especially using social networking services has grown – but so has the amount of Internet abuse on these platforms. Facebook is currently one of the more popular COF-based websites (Davis, 2008). In addition to this, microblogging, such as Twitter, have 'status updates', which are as important a

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part of social networks Facebook and Google+, as the circle of friends is. These technologies have made possible the instantaneous expression of and access to opinion into memes that others can access quickly, creating what is called, 'The public square' (Tapscott & Williams, 2010) . The public square is the ability to publish and control editorial policy, and is currently available to all with access to and competency in using the Internet and online social networking services.

It is clear in today's age that there are a lot of demands on people's time, and they have to prioritise which social networking services, or other media or activity they use. This is often based on which is most gratifying and least discomforting. It has become apparent that introducing gaming elements into such environments, where they would not usually be – a concept called 'gamification' – can increase interest and retention in them. Such systems can promote positive activities by members and reduce the number of people not taking part, called 'lurkers' (Bishop, 2009c; Efimova, 2009). It can also promote activities like 'trolling' where content is created for the 'lulz' of it – that is for the fun of it. These can have upsides and downsides, but it is clear gamification can play a part in managing it.

The Problem of Lurking and Trolling Behaviour

Besides social software, gamification and consumerisation have been identified as the big themes for cloud applications (Kil, 2010). Gamification offers online community managers, also known as systems operators (sysops), the opportunity for a structured system that allows for equitable distribution of resources and fair treatment among members. Finding new ways to makes ones' website grow is a challenge for any sysop, so gamification may be the key. Often this is looked on in a technical way, where such platforms are encouraged to move from simple resource archives toward adding new ways of communicating and functioning (Maxwell & Miller, 2008). It is known that if an online community has the right technology, the right policies, the right content, pays attention to the strata it seeks to attract, and knows its purpose and values then it can grow almost organically (Bishop, 2009c). A potential problem stalling the growth of an online community is lack of participation of members in posting content, as even with the right technology there is often still a large number of 'lurkers' who are not participating (Bishop, 2007b). Lurkers are defined as online community members who visit and use an online community but who do not post messages, who unlike posters, are not enhancing the community in any way in a give and take relationship and do not have any direct social interaction with the community (Beike & Wirth-Beaumont, 2005). Lurking is the normal behaviour of the most online community members and reflects the level of participation, either as no posting at all or as some minimal level of posting (Efimova, 2009). Lurkers may have once posted, but remain on the periphery due to a negative experience.

Indeed, it has been shown that lurkers are often less enthusiastic about the benefits of community membership (Howard, 2010). Lurkers may become socially isolated, where they isolate themselves from the peer group (i.e. social withdrawal), or are isolated by the peer group (i.e. social rejection) (Chen, Harper, Konstan, & Li, 2009). Trolling is known to amplify this type of social exclusion, as being a form of baiting, trolling often involved the Troller seeking out people who don't share a particular opinion and trying to irritate them into a response (Poor, 2005).

The Practice of Defriending in Online Communities

While the Circle of Friends allows the different techno-cultures that use online communities to add people as friends, it also gives them the power to remove or delete the person from their social network. This has been termed in the

United States of America as 'unfriending' or in the United Kingdom as 'defriending'. Defriending is done for a number of reasons, from the innocent to the malicious to the necessary. For instance, a user can innocently suspend their account or want to 'tidy-up' their Circle of Friends, so that only people they actually know or speak to are in it. There can be malicious and ruthless acts of 'cutting someone dead' or permanently 'sending them to Coventry' so that they are no longer in one's network or able to communicate with oneself (Thelwall, 2009). And users can do it, through a 'blocking' feature to cut out undesirable people who are flame trolling them so much that it impairs their ability to have a normal discourse. Being able to 'block' the people they don't want to associate with, this means that it is impossible for them to reconnect without 'unblocking'. Such practice on social networking sites can lead to users missing out on the context of discussions because they are not able to see hidden posts from the person they blocked or who blocked them, to them seeing ghost-like posts from people whose identities are hidden but whose comments are visible for the same reason. Any form of defriending, whether intended innocently or otherwise, can lead to the user that has been defriended feeling angry and violated, particularly if the rules for killing a community proposed by Powazek (2002) haven't been followed. This can turn the user into an E-Venger, where by the user will seek to get vengeance against the person that defriended them through all means possible. If they're a famous person then this could mean posting less than flattering content on their Wikipedia page or writing negative comments about them in other online communities. If they're a close friend whose personal details they have to hand, then it could mean adding their address to mailing lists, or sending them abusive emails.

Gamification

As of the end of 2010, the Facebook game, Farmville, had more than 60 million users worldwide, or 1 per cent of the world's population with an average of 70 minutes played weekly (Hurley, 2000). Concepts like "Gamification", which try to bring video game elements in non-gaming systems to improve user experience and user engagement (Yukawa, 2005) are therefore going to be an important part in current and future online communities in order to increase participation of constructive users and reduce that of unconstructive users. It seems however the gaming elements of online communities need not be 'designed' by the **sysops**, but developed independently by the users, in some cases unintentionally or unknowingly.

For instance, it has become a game on Twitter for celebrities to try and outdo one another by exploiting the 'trending' feature which was designed to tell users what was popular. Celebrities like the interviewing broadcaster, Piers Morgan, and reality TV personality Alan Sugar talked up in the press their programmes which went head to head, and Ms Morgan claimed victory because he and his guest, Peter Andre, on his Life Stories programme appeared higher in the most mentioned topics on Twitter. Also, consumers joined in this activity which could be called 'ethno-gamification' by agreeing to prefix 'RIP' to various celebrities names in order to get that term to appear in the trending column. In the same way 'hypermiling' has become a term to describe ethno-gamification where people try to compete with one another on how can use the least amount of fuel in their vehicles, so this could be called 'hypertrending' as people seek to try to get certain terms to trend higher than others. Examples of both of these are in Figure 1.

So it seems that gaming is essential to the way humans use computer systems, and is something that needs to be exploited in order to increase participation in online communities, which may not have the membership or status of established platforms like Facebook and Google+. Table 1, presents a restructuring of the extrinsic motivators and mechanical tasks in gamification identified by (Wilkinson, 2006) as interface cues, which are

Figure 1. Piers Morgan's Twitter page and 'RIP Adele' search results showing 'ethno-gamification' in the form of 'hypertrending'

'credibility markers' which act as mediating artefacts when attached to a user's cognitive artefacts (Bishop, 2005; Norman, 1991; Weiler, 2002). These are categorised according to whether they are 'authority cues,' signalling expertise, or 'bandwagon cues,' which serve as 'social proof' by allowing someone to reply on their peers. These are followed by and inclusion of the UK health authority's guidance on communities and behaviour change (Esposito, 2010; Smith, 1996).

These stimuli and post types will need to be tailored to individuals dependent on their 'player type' and 'character type'. The dictionary, NetLingo identified four types of player type used by trollers; playtime, tactical, strategic, and domination trollers (Leung, 2010). Playtime Trollers are actors who play a simple, short game. Such trollers are relatively easy to spot because their attack or provocation is fairly blatant, and the persona is fairly two-dimensional. Tactical Trollers are those who take trolling more seriously, creating a credible persona to gain confidence of others, and provokes strife in a subtle and invidious way. Strategic Trollers take trolling very seriously, and work on developing an overall strategy, which can take months or years to realise. It can also involve a number of people acting together in order to invade a list. Domination Trollers conversely extend their strategy to the creation and running of apparently bona-fide mailing lists.

UNDERSTANDING ONLINE COMMUNITY PARTICIPATION

Increasing participation in online communities is a concern of most sysops. In order to do this it is important they understand how the behaviour of those who take part in their community affects others' willingness to join and remain on their website.

The Lurker Profile

Lurkers often do not initially post to an online community for a variety of reasons, but it is clear that whatever the specifics of why a lurker is not participating the overall reason is because of the dissonance of their cognitions that they have experienced when presented with a hook into a conversation. Cognitions include goals, plans,

values, beliefs and interests (Bishop, 2007b), and may also include 'detachments'. These may include that they think they don't need or shouldn't post or don't like the group dynamics (Preece, Nonnecke, & Andrews, 2004). In addition some of the plans of lurkers causing dissonance has been identified (Preece et al., 2004), including needing to find out more about the group before participating and usability difficulties. The cognitions of 'goals' and 'plans' could be considered to be stored in 'procedural memory, and the 'values' and beliefs could be considered to be stored in 'declarative memory'. The remaining cognitions, 'interest' and 'detachment' may exist in something which the author calls, 'dunbar memory', after Robin Dunbar, who hypothesised that people are only able to hold in memory 150 people at a time. It may be that lurkers don't construct other members as individuals, and don't therefore create an 'interest' causing their detachment cognitions to be dominant. The profile of a reluctant lurker therefore is that of a socially detached actor, fearing consequences of their actions, feeling socially isolated or excluded, trapped in a state of low flow but high involvement. Lurkers, it has been argued are no more "tied" to an online community than viewers of broadcast television are "tied" to the stations they view (Beenen et al., 2004) . However, it can be seen that some more determined lurkers are engaged in a state of flow with low involvement in doubting non-participation. Some have suggested lurkers lack commitment Building and sustaining community in asynchronous learning networks, but they are almost twice as likely to return to the site after an alert (Rashid et al., 2006). Indeed, lurkers belong to the community, and while they decide not to post in it, they are attracted to it for reasons similar to others (Heron, 2009). It has been argued that most lurkers are either shy, feel inadequate regarding a given topic, or are uncomfortable expressing their thoughts in written form (Jennings & Gersie, 1987), but others suggest lurking is not always an ability issue (Sherwin, 2006) .

Some researchers characterised lurkers as against hasty conversation rather than a problem for the community (Woodfill, 2009). Often lurkers are afraid of flame wars and potential scrutinising of their comments (Zhang, Ma, Pan, Li, & Xie, 2010). Marked and excessive fear of social interactions or performance in which the person is exposed to potential scrutiny is a core feature of social phobia (Simmons & Clayton, 2010), which has similar facets to lurking (Bishop, 2009d). Perhaps one of the most effective means to change the beliefs of lurkers so that they become novices is for regulars, leaders and elders to nurture novices in the community (Bishop, 2007b). It is known that therapist intervention can help overcome social phobia (Scholing & Emmelkamp, 1993). It could be that through 'private messaging' features that a leader could speak to a registered member who is yet to post. After all, a community is a network of actors where their commonality is their dependence on one another, so feeling a need to be present is essential.

Feelings of uncertainty over the use of posted messages is common to lurkers All social situations carry some uncertainty, which people with social phobia find challenging (Waiton, 2009). Lurking can potentially lead to social isolation, such as not naming anyone outside of their home as a discussion partner (Pino-Silva & Mayora, 2010). Lurkers are less likely to report receiving social support and useful information and often have lower satisfaction levels with group participation sessions (Page, 1999). Leaders can post more messages to encourage all members to post messages (Liu, 2007). Uncertainty caused by poor usability leads to non-participation by lurkers (Preece et al., 2004), and this can be tackled by having the right technology and policies (Bishop, 2009c). Developing trust involves overcoming, particularly in trading communities (Mook, 1987). Such trust was evident in The WELL (Whole Earth 'Lectronic Link), where members use their real names rather than pseudonyms (Rheingold, 2000). Requiring actors to use their real names

Table 1. Examples of interface cues and guidance for gamification use

Stimulus type (Post type)	Examples of interface cue	Guidance for use as mediating artefacts
Social (Snacking)	'group identity[1]', 'fun[2]', 'love[2]'	Users do perform snacking offer short bursts of content and consume a lot too. To take advantage of this, one should utilise local people's experiential knowledge to design or improve services, leading to more appropriate, effective, cost-effective and sustainable services. In other words allow the community to interact without fear of reprisals
Emotional (Mobiling)	'punishments[2]', 'rewards[2]'	Mobiling is where users use emotions to either become closer to others or make a distance from them. This can be taken advantage of to empower people, through for example, giving them the chance to increase participation, so as to also increase confidence, self-esteem and self-efficacy. This can be done through using leaders and elders to encourage newer members to take part.
Cognitive (Trolling)	'levels[1]', 'learning[2]', 'points[2]'	Trolling as a more generic pursuit seeks to provoke others, sometimes affect their kudos-points with others users. Such users should contribute to developing and sustaining social capital, in order that people see a material benefit of taking part.
Physical (Flooding)	'power[1]', 'mastery[2]'	Flooding is where users get heavily involved with others uses by intensive posting that aims to use the person for some form of gratification. Sysops should encourage health-enhancing attitudes and behaviour, such as encouraging members to abuse the influence they have.
Visual (Spamming)	'leader-boards[1]', 'badges[2]'	Spamming, often associated with unsolicited mail, is in general the practices of making available ones creative works or changing others to increase the success of meetings one's goals. Interventions to manage this should be based on a proper assessment of the target group, where they are located and the behaviour which is to be changed and that careful planning is the cornerstone of success. Designing visual incentives can be effective at reinforcing the message.
Relaxational (Lurking)	'meaning[2]', 'autonomy[1]'	Lurking is enacted by those on the periphery of a community. Their judgements for not taking part often relate to a lack of purpose or control. It is essential to build on the skills and knowledge that already exist in the community, for example, by encouraging networks of people who can support each other. Designing the community around allowing people to both see what others are up to, as well as allowing them to have a break from one another can build strong relationships. A 'd0 not bite the newbies' policy should be enforced.

could help a lurker overcome their uncertainties about others' true intentions.

The Troller Profile

A generic definition of trolling by '*Trollers*' could be 'A phenomenon online where an individual baits and provokes other group members, often with the result of drawing them into fruitless argument and diverting attention from the stated purposes of the group' (Moran, 2007). As can be seen from Table 2, it is possible to map the types of character in online communities identified by (Bishop, 2009b) against different trolling practices. Also included is a set of hypnotised narrator types which affect the approach a particular character can take to influence the undesirable behaviour of others without resorting to defriending, which is explored in the empirical investigation later.

This makes it possibly to clearly see the difference between those who take part in trolling to harm, who could be called 'flame trollers' from those who post constructively to help others, called 'kudos trollers'. A flame is a nasty or insulting message that is directed at those in online communities (Leung, 2010). Message in this context

Table 2. Troller character types and counter-trolling strengths as narrators

Troller Character Type	Hypothesised Narrator types	Description
Lurker	Stranger	Silent calls by accident, etc., clicking on adverts or 'like' buttons, using 'referrer spoofers', modifying opinion polls or user kudos scores.
Elder	Catalyst	An elder is an out-bound member of the community, often engaging in 'trolling for newbies', where they wind up the newer members often without question from other members.
Troll	Cynic	A Troll takes part in trolling to entertain others and bring some entertainment to an online community.
Big Man	Sceptic	A Big Man does trolling by posting something pleasing to others in order to support their world view.
Flirt	Follower	A Flirt takes part in trolling to help others be sociable, including through light 'teasing'
Snert	Antagonist	A Snert takes part in trolling to harm others for their own sick entertainment
MHBFY Jenny	Pacifist	A MHBFY Jenny takes part in trolling to help people see the lighter side of life and to help others come to terms with their concerns
E-Venger	Fascist	An E-Venger does trolling in order to trip someone up so that their 'true colours' are revealed.
Wizard	Enthusiast	A wizard does trolling through making up and sharing content that has humorous effect.
Iconoclast	Detractor	An Iconoclast takes part in trolling to help others discover 'the truth', often by telling them things completely factual, but which may drive them into a state of consternation. They may post links to content that contradicts the worldview of their target.
Ripper	Rejector	A Ripper takes part in self-deprecating trolling in order to build a false sense of empathy from others.
Chatroom Bob	Striver	A chatroom bob takes part in trolling to gain the trust of others members in order to exploit them.

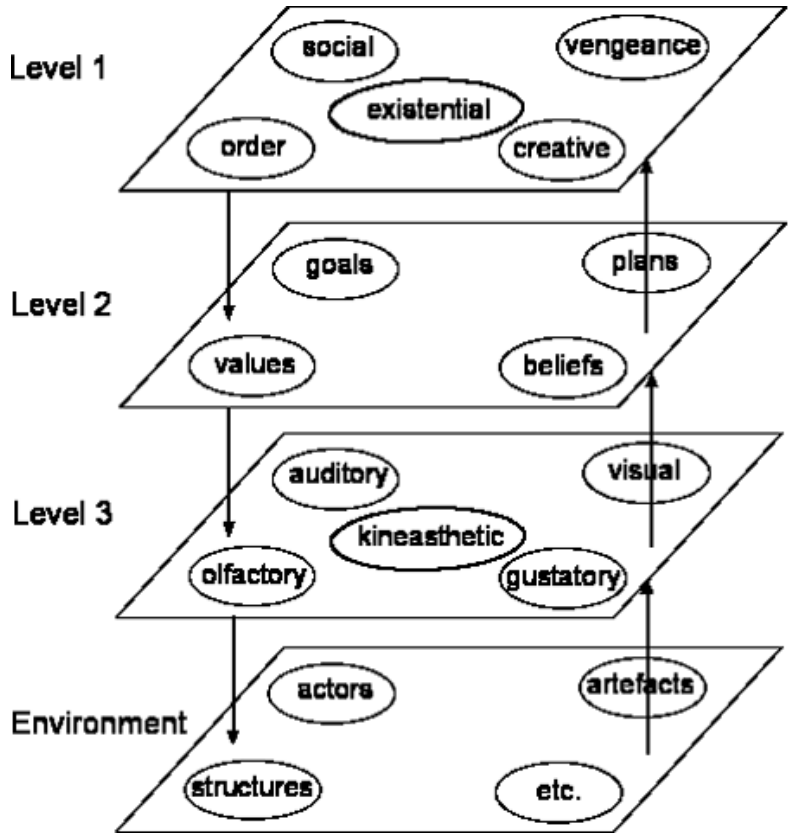
could be seem to be any form of electronic communication, whether text based or based on rich media, providing in this case it is designed to harm or be disruptive. A 'kudos' on the hand can be seen to be a message that is posted in good faith, intended to be constructive.

The Effect of Gamification and Defriending on Online Community Participation

In 2007, as Facebook was emerging, (Bishop, 2007b) presented the ecological cognition framework (see Figure 2). The 'ECF' was able to show the different plans that actors make in online communities based on their different dispositional forces, which created 'neuro-responses' driving them to act, such as 'desires'. Four years earlier in 2003, research was pointing out that there were unique characteristics among those people forming part of the *net generation* (i.e. those born between 1977 and 1997). These included having dispositional forces with preference for *surveillance* and *escape*, factors which were not part of the ECF.

These online social networking services have shown that the ties that used to bring people to form online communities are different than what they used to be prior to 2007. The personal homepage genre of online community (Bishop, 2009a) is now the most dominant model of online community enabled through these services. Through actors forming *profiles,* linked together with the circle of friends and microblogging content, they can control the visibility of objects such as actors (e.g. their friends) and artefacts (e.g. the content they want to see). They are in effect creating their own online community dedicated to the people they consider friends.

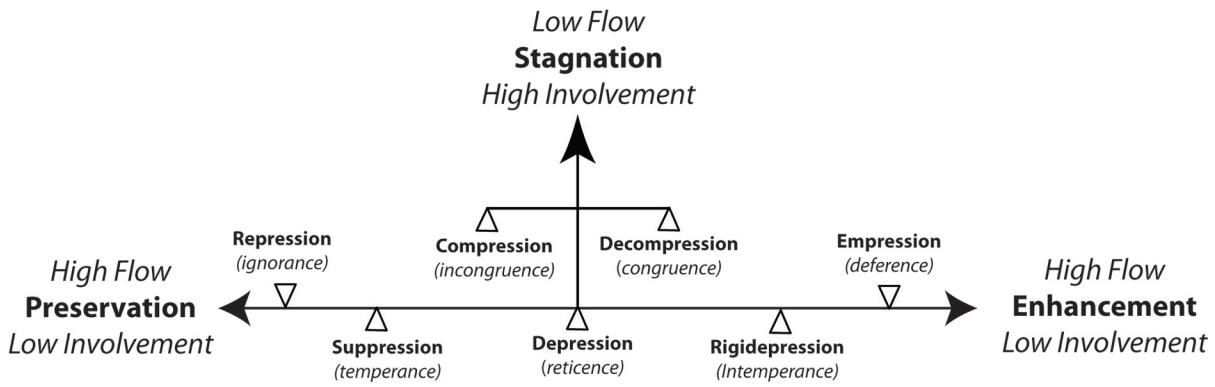
Figure 2. The ecological cognition framework



The Participation Continuum

One of the most important concepts in creating online communities that can harness gamification is the relationship between 'flow' and 'involvement'. When an actor is engaged in a state of flow their concentration is so intense that they forget about their fears and become fully immersed and completely involved in what they are doing (Csikszentmihalyi, 1990). Decision-making in such a state becomes more fluid and actors respond almost without thought for the consequences of their actions. In a high state of flow, Snerts will have low involvement cognitively and post flames with little restraint, often trolling for their own benefit, which then deters lurkers from becoming posters. A structure based on the ecological cognition framework for decision making in human-centred computer systems has been proposed (Bishop, 2007a), which introduced the concepts of deference, intemperance, reticence, temperance and ignorance. This was extended through the participation continuum, to suggest that these cognitive states will lead to empression, regidepression, depression, suppression and repression respectively in the case of the original five judgements (Bishop, 2011b). A six cognitive state, proposed in that paper, reflects the dilemma that lurkers go through, which is compression when they experience incongruence due to congruence when trying to avoid cognitions which are not compatible with their ideal self. Decompression on the other hand is when they start to break this down. These concepts are presented in the model in Figure 3, called the participation continuum.

Figure 3. The participation continuum



There appears to be a 'zone of participation dissonance', between the level at which an actor is currently participating and what they could achieve if there was greater support for usability and sociability. This distance between fully 'mediating' their transfer to enhancement of participation could be called the 'Preece Gap', after Jenny Preece, who set out how to design for usability and support sociability (Preece, 2001). As can be seen from the participation continuum in Figure 1, the higher the state of flow for a lurker, the more likely they are to be 'dismediating' from enhancement towards preservation by not to posting due to low involvement. Equally, the higher the state of flow for a poster the more likely they are to keep mediating towards enhancement and away from preservation within the community with little effort (i.e. involvement). The process in the middle resembles the visitor-novice barrier in the membership lifecycle (Kim, 2000). A lurker who has had bad experiences may be sucked into stagnation through rationalisation of non-participation, going from minimal posting (Efimova, 2009) to lurking (i.e. where they give up posting) and back out again after the intellectualisation process. This resembles a 'battering' cycle (Bishop, 2010), where the actor will be under a barrage of flaming abuse, then be told all is forgiven and they can come back as in (Bishop, 2009b).

AN INVESTIGATION INTO DEFRIENDING IN ONLINE COMMUNITIES

A study was designed to use a narrative analysis to analyse defriending activity and extend the understanding the ECF brings to online community research. Narrative analysis is a tool researchers can use to explore the intersection between the individual and society (Kil, 2010). Narrative analysis in Internet studies essentially uses both text and online "talk" to construct a holistic view of the online interactions, looking at cognition as well as affect (Yukawa, 2005). Narrative analysis is the most prevalent approach that has emphasized alternatives to categorising analysis, but much of narrative research, broadly defined, involves categorising as well as connecting analysis, and the distinction has not been clearly defined (Maxwell & Miller, 2008). Narratives were selected from Google's Blog Search by searching for the terms, "I deleted him as a friend", "he deleted me as a friend". "I deleted her as a friend" and "She deleted me as a friends". The ethnomethodological narrative analysis approach of (Bishop, 2011a) was then used to code the text in the blog posts to identify the different 'Methods', 'Memes', 'Amities', 'Rules' and 'Strategies' that impact on the decision to defriend someone or why someone was defriended.

Descriptives

The difficulties of a romantic relationship accounted for just over 2,700 (13.4%) of the cases where a female was defriended compared to less than 50 (0.47%) for men, suggesting that when a romantic relationship doesn't work out women are more likely to be defriended than men, or at least, people are more likely to disclose on a blog that they defriended a female because of relationship problems than they would males. Less than 20 males were defriended for a sex related issue compared to over 9,500 females. This may be because as Thelwall (2008) suggests, men use online social networking more for dating and women more for other forms of friendship. It became clear in the discourses there were often other people involved in the event leading to a person being defriended. In around 65 per cent of cases where males were defriended and 90 per cent where females were defriended there was another person involved. Over 3,000 females (16.4%) were defriended because someone was offended compared to only 4 males (0.08%) for the same reason (see Table 3).

Results

Analysing the data resulted in four key findings. Firstly, actors are provoked into responding to a state of disequilibrium, such as being defriended. Second, actors need to develop an awareness of the change in the environment before they are able to realise its impact on them. Thirdly, actors will first have a reaction to a state of disequilibrium before organising a response that causes them least dissonance. Fourthly and finally, actors will testify their experiences to others as a way of expressing their understanding in order to restore a state of equilibrium.

Finding 1: Actors are Provoked into Responding to a State of Disequilibrium

Understanding what drives actors to act is crucial to developing human-computer systems that adapt to and influence them. There has been extensive research into discovering what drives people, which has led to a number of theories, including psychoanalytic theory (Freud, 1933), hierarchical needs theory (Maslow, 1943), belief-desire-intention theory (Rao & Georgeff, 1998), which see desires as goals, and other desire-based

Table 3. Role of different factors in defriending narratives

Defriending discourse type	Males Defriended	Females Defriended
Effect of male on female friend	3,315	19,226
Effect of female on male friend	3,249	18,359
Employment mentioned	2,167	12,951
Sex	11	9,665
Break-ups and Dating	24	2,759
Offence	4	3,372
Little in common	3	1,835
Email related	25	1,386
Text message related	7	0
Application related	1	0
Total	***5,084***	***20,572***

theories, which see desires as instincts that have to be satisfied (Reiss, 2004). All of these theories suggest that actors are trying to satisfy some internal entity. This assumption ignores the role of the environment in shaping the behaviour of an actor and suggests that actors are selfish beings that only do things for shallow reasons.

There seemed from most of the narratives that there was something in the environment that provoked the actor to write about their defriending action. For instance, Era talking about a male she had known since the age of 12 who "made lots of sexual innuendos and jokes i.e. wolf whistles/ comments about my make up, perfume etc." ended her narrative saying, "I told him goodbye and removed him as a friend on FB. I wished him all the best in his life. Then he replies and says he only likes me as a friend. He denied that he ever flirted with me and said I was crazy and that I over-analyse things," suggesting that recognition of her experience was important and writing in the blogosphere might be a way she saw to achieve it.

Finding 2: Actors Need to Develop an Awareness of the Change in the Environment before they Are Able to Realise its Impact on Them

It was apparent in the data that those writing their narratives needed to gain an awareness of how the stimulus that provoked them affects them, so that they can understand its impact more appropriately. In one of the weblog narratives, a blogger, Julie, said; "I deleted her as a friend on Facebook because after waiting six months for her to have time to tell me why she was upset with me I got sick of seeing her constant updates (chronic posting I call it)". This supports the view accepted among many psychologists that perception and action are linked and that what is in the environment has an impact on an actor's behaviour. Perceptual psychologists have introduced a new dimension to the understanding of perception and action, which is that artefacts suggest action through offering affordances, which are visual properties of an artefact that determines or indicates how that artefact can be used and are independent of the perceiver (Gibson, 1986). This suggests that when an actor responds to a visual stimulus that they are doing so not as the result of an internal reflex, but because of what the artefact offers.

Finding 3: Actors Will First Have a Reaction to a State of Disequilibrium before Organising a Response that Causes them Least Dissonance

According to Festinger (1957) cognitive dissonance is what an actor experiences when their cognitions are not consonant with each other. For example if an actor had a plan to be social, but a belief that it would be inappropriate they would experience dissonance as a result of their plan not being consonant with their belief. Resolving this dissonance would achieve a state of consonance that would result in either temperance or intemperance. If this actor held a value that stated that they must never be social if it is inappropriate they could achieve consonance by abandoning the plan to be social which results in temperance. If the same actor had an interest in being social and a belief that it was more important to be social than not be social they might resolve to disregard their belief resulting in intemperance. If an actor experiences a desire without experiencing any dissonance they experience deference, as they will act out the desire immediately.

It became quite apparent early on in the analysis that those writing narratives would do to in such a way to cause least dissonance. For instance, one female blogger (Angie) when writing about a relationship breakdown with her friend, said, "I'm not sure if anything I write tonight will make any sense, but it's not as if anyone else reads these anyway so I guess it doesn't really matter how organized I keep it."

Finding 4: Actors Will Testify their Experiences to Others as a Way of Expressing their Un-

derstanding in Order to Restore a State of Equilibrium

It became apparent from looking at the weblog entries that bloggers got some sort of closure from writing the narratives. For instance, closing one of her blogs, Angie said, "As you can see, my brain is a ridiculously tangled ball of yarn at the moment and my thoughts are all over the place. Maybe some good old REM's sleep will massage the knots out. Until next time." Psychological closure, it is argued, is influenced by the internal world of cognition as well as the external world of (finished or unfinished) actions and (challenging or unchallenging) life events. Weblogs, according to some, serve similar roles to that of papers on someone's office desk, for example allowing them to deal with emerging insights and difficult to categorise ideas, while at the same time creating opportunities for accidental feedback and impressing those who drop by (Efimova, 2009).

REVIEW OF FINDINGS

The findings when mapped on to the ECF suggest several things. The first is that in online communities a stimulus is presented that provokes an actor into realising that an opportunity exists to post. For instance, a person may read something on an online news website which they disagree with so much that it provokes them into blogging about it. The next stage of the ECF, the impetus is governed by understanding and at is at this stage the actor beings to gain an awareness of how the stimulus affects them. The next stage is the realisation of its relevance to them and where they gain the intention to respond to it. In reference to the earlier example, it may be that the news article is disparaging about a particular cultural group they belong to, and it reignites old memories of discrimination that they want to respond to. The next narrative stage is where the reaction to this knowledge, where they may form a plan to do something about giving them a sense of aspiration. The next stage of the ECF, Judgement, would be where the actor organises their responses to their reaction and weighs up the positives and negatives to acting on it. For example, their head may be flooded with emotions about how they responded to previous situations that were similar, which they may want to write down to contextualise the current situation. Once they have taken the bold step to write the post, they will then testify their opinions at the response stage and may cycle through their thoughts until they have given the response they are comfortable with. Table 4 presents the stages of the ECF and how these related to the findings of this study.

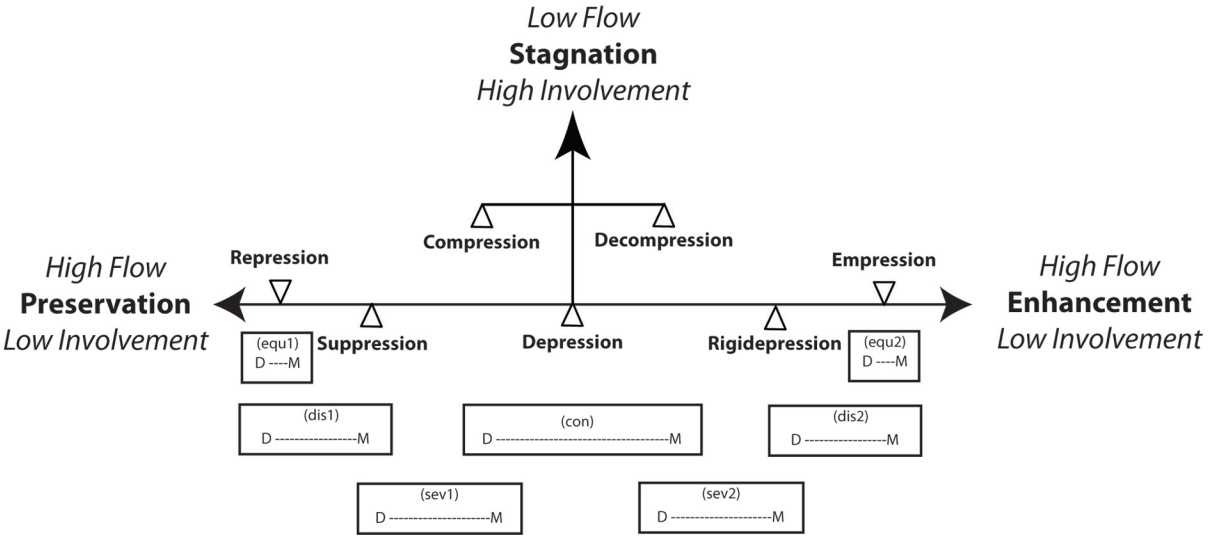
Towards the Gamification Flow of Persuasion Model

The constructivism proposed by Lev Vygotsky in *Mind in Society* (Vygotsky, 1930) says there is a gap between what someone can achieve by themself and what they can achieve with a more competent peer. Vygotsky called this the zone of proximal development, and suggesting that through mediating with artefacts, which the author interprets to include signs such as language or tools such as software, an actor can have help to achieve their potential, in this case in learning. The preeminent *Oxford Dictionary of Law,* which defines a mediator as someone who assists two parties in resolving a conflict but has no decision-making powers, and the process and mediation, supports this conceptualisation proposed by Vygotsky, the author accepts. Equally the term 'dismediation' is the process where an actor, either through reflection or the intervention of another actor returns to a former state of preserving their original status quo. The example given in some texts on cognitive dissonance is where a consumer orders a car from a dealer and then experiences doubt over whether they made the right decision. It has been argued that a courtesy call can help an actor feel more confidence in their decision and reduce the

Table 4. Description of stages of the ECF with reference to narrative stages

ECF Stage	Narrative Stage	Description
Stimuli	Provocation	There is a spark that makes someone want to post to an online community. This stimulus provokes an actor into seizing the opportunity to make a contribution.
Impetus	Awareness	Once someone has been given an incentive to post the next stage is to get an understanding of what they can do through gaining an awareness of what has happened.
Intent	Realisation	Once someone has an awareness of how an opportunity affects them the next stage is for them to realise how relevant it is to them to give them the intention to go further.
Neuroresponse	Reaction	Once someone has realised the relevance of a particular action to them they react to it without knowing the consequences giving them a feeling of aspiration.
Judgement	Organisation	Once someone has aspired to a particular course of action they may experience dissonance through organising the proposed action in line with their thoughts. They or their nervous system will then make the choice to take a particular action.
Response	Testimony	Once someone has made the judgement to take a particular action the next stage is to express that choice. In terms of narratives this is their testimony, which may encompass the various aspects of the previous stages.

Figure 4. The gamification flow of persuasion model



experience, which I call reticence, as an intervention to create mediation towards enhancement, which in this case is the benefit from a new car, which acts as the 'seduction mechanism'. The seduction mechanism in this context refers to an intervention that stimulates substantial change in an actor's goals, plans, values, beliefs, interests and detachments. An example, which can be found in the existing literature (Bishop, 2007c), is where someone who has been lurking is presented with a post that provokes them so much they feel compelled to reply. However, it is clear that not everyone reacts the same way to a seduction mechanism, as some may take longer to fully change their behaviour than others. A framework is therefore needed to explain these differences, and an extension to the participation continuum is presented in Figure 4.

DISCUSSION

Encouraging participation is one of the greatest challenges for any e-community provider. Attracting new members is often a concern of many small online communities, but in larger e-communities which are based on networks of practice, the concern is often retaining those members who make worthwhile contributions. These communities still have their 'classical lurkers' who have never participated, but they also appear to what could be called 'outbound lurkers', referred to as elders, who used to participate frequently, but now no longer do as much. One reason for this is that the actors have lost their ties through being 'defriended' by other actors in the network. Some of the reasons for this defriending behaviour has been explored in this chapter. They vary from issues in the workplace to difficulties in romantic relationships, whether romantic partners or strangers who take part in flame trolling. What is clear that defriending has an impact on those affected by them and are explained in the narratives they produce on weblogs. This suggests that while defriending can have an impact in one community, such as causing 'out-bound lurking', it can increase participation in another. Actors will always have a desire to share their experiences, and as has been shown through this chapter they follow a clear six-part cycle in expressing themselves, and their narratives take on 10 different personas based on their individual differences. It could therefore be concluded that one online communities loss is another's gain, as participation in these environments has now become so pervasive that if a person is forced not to participate in them and therefore become an 'outbound lurker,' or elder, they can always find another to meet their desires to express themselves.

This chapter has argued that essential to ensuring 'responsible trolling' is the use of gamification techniques. Gamification introduces elements from video gaming, such as points and leader-boards in order to incentivise positive behaviours and disincentivise negative ones. A model, called the 'gamified flow of persuasion' is presented, which builds on the earlier participation continuum. This explains how gamification based systems can be designed so as to help users transfer from one level of participation to another.

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REFERENCES

Beenen, G., Ling, K., Wang, X., Chang, K., Frankowski, D., Resnick, P., & Kraut, R. E. (2004). Using social psychology to motivate contributions to online communities. *Proceedings of the 2004 ACM Conference on Computer Supported Cooperative Work,* (p. 221).

Beike, D., & Wirth-Beaumont, E. (2005). Psychological closure as a memory phenomenon. *Memory (Hove, England)*, *13*(6), 574–593. doi:10.1080/09658210444000241

Bishop, J. (2005). The role of mediating artifacts in the design of persuasive e-learning systems. *Proceedings of the First International Conferences on Internet Technologies and Applications,* University of Wales, NEWI, Wrexham, (pp. 548-558).

Bishop, J. (2007a). Ecological cognition: A new dynamic for human-computer interaction. In Wallace, B., Ross, A., Davies, J., & Anderson, T. (Eds.), *The mind, the body and the world: Psychology after cognitivism* (pp. 327–345). Exeter, UK: Imprint Academic.

Bishop, J. (2007b). Increasing participation in online communities: A framework for human–computer interaction. *Computers in Human Behavior*, *23*(4), 1881–1893. doi:10.1016/j.chb.2005.11.004

Bishop, J. (2007c). Increasing participation in online communities: A framework for human–computer interaction. *Computers in Human Behavior*, *23*(4), 1881–1893. doi:10.1016/j.chb.2005.11.004

Bishop, J. (2009a). Enhancing the understanding of genres of web-based communities: The role of the ecological cognition framework. *International Journal of Web Based Communities*, *5*(1), 4–17. doi:10.1504/IJWBC.2009.021558

Bishop, J. (2009b). Increasing capital revenue in social networking communities: Building social and economic relationships through avatars and characters. In Dasgupta, S. (Ed.), *Social computing: Concepts, methodologies, tools, and applications* (pp. 1987–2004). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-984-7.ch131

Bishop, J. (2009c). Increasing membership in online communities: The five principles of managing virtual club economies. *Proceedings of the 3rd International Conference on Internet Technologies and Applications - ITA09,* Glyndwr University, Wrexham.

Bishop, J. (2009d). Increasing the economic sustainability of online communities: An empirical investigation. In Hindsworth, M. F., & Lang, T. B. (Eds.), *Community participation: Empowerment, diversity and sustainability*. New York, NY: Nova Science Publishers.

Bishop, J. (2010). *Multiculturalism in intergenerational contexts: Implications for the design of virtual worlds.* Paper Presented to the Reconstructing Multiculturalism Conference, Cardiff, UK.

Bishop, J. (2011a). *The equatrics of intergenerational knowledge transformation in techno-cultures: Towards a model for enhancing information management in virtual worlds. Unpublished MScEcon*. Aberystwyth, UK: Aberystwyth University.

Bishop, J. (2011b). Transforming lurkers into posters: The role of the participation continuum. *Proceedings of the Fourth International Conference on Internet Technologies and Applications (ITA11),* Glyndwr University.

Chen, Y., Harper, F. M., Konstan, J., & Li, S. X. (2009). Group identity and social preferences. *The American Economic Review*, *99*(1). doi:10.1257/aer.99.1.431

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: Harper & Row.

Davis, S. (2008). With a little help from my online friends: The health benefits of internet community participation. *The Journal of Education, Community and Values, 8*(3).

Efimova, L. (2009). Weblog as a personal thinking space. *Proceedings of the 20th ACM Conference on Hypertext and Hypermedia,* (pp. 289-298).

Esposito, J. J. (2010). Creating a consolidated online catalogue for the university press community. *Journal of Scholarly Publishing*, *41*(4), 385–427. doi:10.3138/jsp.41.4.385

Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston, IL: Row, Peterson.

Freud, S. (1933). *New introductory lectures on psycho-analysis*. New York, NY: W.W. Norton & Company, Inc.

Gibson, J. J. (1986). *The ecological approach to visual perception*. Lawrence Erlbaum Associates.

Heron, S. (2009). Online privacy and browser security. *Network Security*, (6): 4–7. doi:10.1016/S1353-4858(09)70061-3

Howard, T. W. (2010). *Design to thrive: Creating social networks and online communities that last*. Morgan Kaufmann.

Hurley, P. J. (2000). *A concise introduction to logic*. Belmont, CA: Wadsworth.

Jennings, S., & Gersie, A. (1987). *Drama therapy with disturbed adolescents* (pp. 162–182).

Kil, S. H. (2010). Telling stories: The use of personal narratives in the social sciences and history. *Journal of Ethnic and Migration Studies*, *36*(3), 539–540. doi:10.1080/13691831003651754

Kim, A. J. (2000). *Community building on the web: Secret strategies for successful online communities*. Berkeley, CA: Peachpit Press.

Lampe, C., & Resnick, P. (2004). Slash (dot) and burn: Distributed moderation in a large online conversation space. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems,* (pp. 543-550).

Leung, C. H. (2010). Critical factors of implementing knowledge management in school environment: A qualitative study in Hong Kong. *Research Journal of Information Technology*, *2*(2), 66–80. doi:10.3923/rjit.2010.66.80

Maslow, A. H. (1943). A theory of motivation. *Psychological Review*, *50*(4), 370–396. doi:10.1037/h0054346

Maxwell, J. A., & Miller, B. A. (2008). Categorizing and connecting strategies in qualitative data analysis. In Leavy, P., & Hesse-Biber, S. (Eds.), *Handbook of emergent methods* (pp. 461–477).

Mook, D. G. (1987). *Motivation: The organization of action*. London, UK: W.W. Norton & Company Ltd.

Moran, J. (2007). Generating more heat than light? Debates on civil liberties in the UK. *Policing*, *1*(1), 80. doi:10.1093/police/pam009

Norman, D. A. (1991). Cognitive artifacts. In Carroll, J. M. (Ed.), *Designing interaction: Psychology at the human-computer interface* (pp. 17–38). New York, NY: Cambridge University Press.

Page, S. E. (1999). Computational models from A to Z. *Complexity*, *5*(1), 35–41. doi:10.1002/(SICI)1099-0526(199909/10)5:1<35::AID-CPLX5>3.0.CO;2-B

Pino-Silva, J., & Mayora, C. A. (2010). English teachers' moderating and participating in OCPs. *System*, *38*(2). doi:10.1016/j.system.2010.01.002

Poor, N. (2005). Mechanisms of an online public sphere: The website slashdot. *Journal of Computer-Mediated Communication*, *10*(2).

Powazek, D. M. (2002). *Design for community: The art of connecting real people in virtual places*. New Riders.

Preece, J. (2001). *Online communities: Designing usability, supporting sociability*. Chichester, UK: John Wiley & Sons.

Preece, J., Nonnecke, B., & Andrews, D. (2004). The top 5 reasons for lurking: Improving community experiences for everyone. *Computers in Human Behavior*, *2*(1), 42.

Rao, A. S., & Georgeff, M. P. (1998). Decision procedures for BDI logics. *Journal of Logic and Computation*, *8*(3), 293. doi:10.1093/logcom/8.3.293

Rashid, A. M., Ling, K., Tassone, R. D., Resnick, P., Kraut, R., & Riedl, J. (2006). Motivating participation by displaying the value of contribution. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems,* (p. 958).

Reiss, S. (2004). Multifaceted nature of intrinsic motivation: The theory of 16 basic desires. *Review of General Psychology*, *8*(3), 179–193. doi:10.1037/1089-2680.8.3.179

Rheingold, H. (2000). *The virtual community: Homesteading on the electronic frontier* (2nd ed.). London, UK: MIT Press.

Romm, C. T., & Setzekom, K. (2008). *Social network communities and E-dating services: Concepts and implications*. London, UK: Information Science Reference. doi:10.4018/978-1-60566-104-9

Scholing, A., & Emmelkamp, P. M. G. (1993). Exposure with and without cognitive therapy for generalized social phobia: Effects of individual and group treatment. *Behaviour Research and Therapy*, *31*(7), 667–681. doi:10.1016/0005-7967(93)90120-J

Sherwin, A. (2006, April 3). A family of Welsh sheep - The new stars of Al-Jazeera. *Times (London, England)*, (n.d), 7.

Simmons, L. L., & Clayton, R. W. (2010). The impact of small business B2B virtual community commitment on brand loyalty. *International Journal of Business and Systems Research*, *4*(4), 451–468. doi:10.1504/IJBSR.2010.033423

Smith, G. J. H. (1996). Building the lawyer-proof web site. Paper presented at the *Aslib Proceedings, 48,* (pp. 161-168).

Tapscott, D., & Williams, A. D. (2010). *Macrowikinomics: Rebooting business and the world*. Canada: Penguin Group.

Thelwall, M. (2008). Social networks, gender, and friending: An analysis of MySpace member profiles. *Journal of the American Society for Information Science and Technology*, *59*(8), 1321–1330. doi:10.1002/asi.20835

Thelwall, M. (2009). Social network sites: Users and uses. In Zelkowitz, M. (Ed.), *Advances in computers: Social networking and the web* (p. 19). London, UK: Academic Press. doi:10.1016/S0065-2458(09)01002-X

Vygotsky, L. S. (1930). *Mind in society*. Cambridge, MA: Waiton, S. (2009). Policing after the crisis: Crime, safety and the vulnerable public. *Punishment and Society*, *11*(3), 359.

Weiler, J. H. H. (2002). A constitution for Europe? Some hard choices. *Journal of Common Market Studies*, *40*(4), 563–580. doi:10.1111/1468-5965.00388

Wilkinson, G. (2006). Commercial breaks: An overview of corporate opportunities for commercializing education in US and English schools. *London Review of Education*, *4*(3), 253–269. doi:10.1080/14748460601043932

Woodfill, W. (2009, October 1). The transporters: Discover the world of emotions. *School Library Journal Reviews,* 59.

Yukawa, J. (2005). Story-lines: A case study of online learning using narrative analysis. *Proceedings of the 2005 Conference on Computer Support for Collaborative Learning: Learning 2005: The Next 10 Years!* (p. 736).

Zhang, P., Ma, X., Pan, Z., Li, X., & Xie, K. (2010). Multi-agent cooperative reinforcement learning in 3D virtual world. In *Advances in swarm intelligence* (pp. 731–739). London, UK: Springer. doi:10.1007/978-3-642-13495-1_90