AN ACCOUNT OF FLAMING ON DUTCH MESSAGE BOARDS

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Abstract

This study explores the connection between personal characteristics (demographics, attitudes, personality) and motives to engage in flaming on several of the best visited Dutch message boards. Flaming, as defined by Moor, is done by displaying hostility by insulting, swearing or using otherwise offensive language. Aside from flamers, receivers of flames and "innocent bystanders" (who neither send nor are the aim of a flame) are also questioned on their attitudes towards flaming. The results show that the typical flamer is a man doing it for his amusement or pass time. Personality traits are also found to influence flaming motives and the majority of flames come from a small group of flamers who get great satisfaction out of flaming. Flaming occurs on every message board, regardless of topic.

Samenvatting

Deze scriptie onderzoekt het verband tussen persoonlijke eigenschappen (demografie, opinie, persoonlijkheid) en motieven om te *flamen* op een aantal van de best bezochte Nederlandse fora. *Flamen*, zoals gedefinieerd door Moor, kan tot uiting komen in een belediging, in vloeken of in andere aanstootgevende taal. Naast *flamers* worden ontvangers van flames en "onschuldige omstanders" (die noch *flames* versturen, noch het doelwit zijn) gevraagd naar hun mening over *flaming*. De resultaten tonen aan dat de typische *flamer* een man is die het doet uit plezier of om tijd te verdrijven. Persoonlijkheid heeft ook invloed op de motieven om te *flamen* en de meeste flames worden door een klein groepje verstuurd die hier een groot genoegen uit halen. *Flamen* gebeurt op elk forum, ongeacht het onderwerp.

Introduction

Flaming has become a public matter in the Netherlands with multiple background articles in several Dutch newspapers in the past years. Many Dutch websites, who have in the past been open to comments, either do not allow comments anymore or screen every submitted comment and only post those that adhere to the strict rules of that particular website (Opten, 2011b). In the Netherlands most of the attention is going out to the so called *reaguurder*, which loosely translates to something like *commenteer*. *Reaguurder* is the original name for people who left comments on the provocative weblog GeenStijl, which was founded in 2003. Through the years GeenStijl has become so popular and influential that it was even able to start a public broadcasting service (PowNed). *Reaguurders* have a preference for and are very creative in using sarcasm, irony, and malice. The term *reaguurder* has, like flaming before it, lost its original meaning as several newspapers and online media have used it as a substitute for flamer (Opten, 2011a). The difference between an original *reaguurder* and a flamer is that a *reaguurder* mostly comments on news and current events, whereas flamers can be active anywhere (more on this later). Since the terms are now used interchangeably, this research will not differentiate between the two. Flamers, as they will be called from here on, are a definite problem for websites that allow comments to be posted and TC Tubantia (a local newspaper) found that 42% of the visitors of Dutch news sites are bothered by them and 20% of the visitors avoid websites because of flaming activity (Trommelen, 2011). The types of flames posted on news sites are typically Dutch, according to media sociologist Albert Benschop (Opten, 2011a). The Netherlands has a culture in which everybody is free to speak their minds and on the internet this is done to the extreme. Indeed, no other country in the world has a website like GeenStijl, which even sprouted a public broadcasting service. Yet, flames are not limited to news sites as many flamers seek out message boards and chat rooms on which they can speak their minds (Nazareth, 2011; Lange, 2006). However, even though the Dutch flamers have caught the attention of the media and the public, not much is known about what drives them and who they really are. This research tries to answer these questions by using the aforementioned message boards to reach and invite flamers to participate in this study.

Theoretical background

Flaming is as old as the first computer-mediated communication (CMC) systems (Kiesler, Siegel, & McGuire, 1984). The term was coined in 1983 in The Hacker's Dictionary which defined it as speaking "rabidly or incessantly on an uninteresting topic or with a patently ridiculous attitude" (Steele, Woods, Finkel, Crispin, Stallman, & Goodfellow, 1983; p. 158). The definition of flaming has since then been redefined numerous times, to the point of losing its theoretical value (Lange, 2006) as a result of the lack of general consensus amongst researchers (Kayany, 1998). Most authors, however, do seem to agree on at least one thing: flames are generally of a hostile nature (e.g. Aiken & Waller, 2000; Lange, 2005; Lee, Wagner, Cheung, & Ip, 2002; Reinig, Briggs, Brandt, & Nunamaker, 1997). This is why, in this study, the definition opted by Moor (2007) will be used: Flaming is "displaying hostility by insulting, swearing or using otherwise offensive language" (p. 1).

With the enormous increase in CMC use in the past two decades many studies have already been conducted on flaming. Some studies try to seek an answer as to why people flame by examining the CMC system used or the topic of interest (Aiken & Waller, 2000), but neither seems to influence the amount of flaming. Other studies have focused on the person behind the flames by looking at motives (Moor, Heuvelman, & Verleur, 2010), personality, gender (Aiken & Waller, 2000), or all three aspects (Alonzo & Aiken, 2004). Moor, Heuvelman, & Verleur (2010) studied flaming on YouTube and found that flaming may not always be the intent of someone commenting on a video. Very often a commenter simply wishes to give an opinion or express disagreement, rather than offending someone or flaming for amusement; Lange (2005) came to the same conclusion in her study on flaming in fantasy role-playing communities. Flaming was often found to be a result of feeling offended by another comment (which may not be intended as such), after which a conversation can, and very often will, escalate. Aiken & Waller (2000) found a similar effect: flames evoke more flames. They also found that a small percentage of flamers is responsible for the majority of flames.

Uses & gratifications theory and flaming

Uses & gratifications theory (UGT) tries to explain why people choose to use a particular type of mediated communication and what gratifications they get from this. The theory was first used and studied in the 1940s and has since been applied to a myriad of media types (Ruggiero, 2001). In recent times it has been used to explain the use of Facebook (Joinson, 2008), Wikipedia (Rafaeli & Ariel, 2008), and the internet in general (Ruggiero, 2001; Stafford, Stafford, & Schkade, 2004). Stafford, Stafford, & Schkade (2004) have made it very clear why UGT is still of great value in explaining the use of the newer media such as the internet (and thus flaming):

> […] U&G provides the "customer-level" view of mass media such as the Internet. Given the inherent interactivity and user-directed nature of Internet media, this user-level approach seems particularly well suited for examining consumer Internet use. Since individual users essentially control the communicative process of the Internet by virtue of their power to initiate access to commercial sites (Stafford & Stafford, 2001), or even through the choice of whether to be online at all, U&G provides the theoretical framework for understanding the specific reasons that bring consumers to online marketspaces [*sic*] where commerce transpires. (p. 267)

In their 2004 study Alonzo & Aiken were the first to apply UGT to flaming. They found that flaming motives are dependent on personality traits. These psychological variables (disinhibition/sensation seeking, anxiety, creativity, and assertiveness) are based on McGuire's (1974) psychological theories on people's television viewing motives. The results of their study show that (1) disinhibition seekers flame for pass time and entertainment because they are willing to take risks, (2) anxiety predicts flaming for escape and relaxation; hostile comments may result in stress, in order to escape or diffuse such feelings one may flame in response, (3) highly assertive people flame for pass time in order to exert control and dominance over others, (4) creativity is not a predictor for flaming, and (5) males are

more than twice as likely to flame compared to females. Alonzo & Aiken's study clearly shows that a relation exists between personality and motives to flame, however the personality measures are not as comprehensive as they could be. Also, the subjects tested are all college students; the study thus doesn't take into account that there may be a difference in flaming behavior amongst various groups of people.

The motives for engaging in flaming activity used in Alonzo & Aiken's 2004 study (amusement, escape, pass time, and relaxation) have however proven to be useful. Nazareth (2011) revised their flaming model and added the following motives: status enhancement and anonymity. Alonzo & Aiken (2004) have hinted at the existence of the former motive. Anonymity has garnered much attention in previous flaming research (e.g. Lange, 2005; Lee, Wagner, Cheung, & Ip, 2005; Moor, Heuvelman, & Verleur, 2010) and is as such a logical addition to the list of flaming motives. Rafeali & Ariel (2008) have found several motives for Wikipedia use. Three of these motives may very well be applicable to flaming: personal preference, rituals, and habitual. Personal preference refers to enjoying editing articles, discussing, or voting on subjects and is as such comparable to the amusement motive already present. The other two motives, however, add a new angle to flaming research. Maybe flaming is second nature or a routine activity for some people (habitual) or maybe it's something that fits right in with someone's day to day activities (rituals). In sum, the complete list of motives to engage in flaming activity under consideration in this research is: amusement, escape, pass time, relaxation, anonymity, status enhancement, habitual, and rituals.

Research questions

As has been said in the introduction: Dutch flamers have caught the attention of the media and the public, yet not much is known about what drives them and who they really are. Thus the main research question (RQ) is:

RQ1: Who are the Dutch flamers and what drives them?

To answer this question a sample of the online Dutch community will be asked to fill in an online questionnaire. This questionnaire will consist of demographics, a measurement of attitudes towards flames, and, for those who indicate that they themselves have flamed, questions on what motivates a flamer and a personality test. The personality test employed here is the Ten-Item Personality Inventory or TIPI. The TIPI is slightly inferior to larger, multi-item questionnaires such as the BFI or NEO-FFI, but these inventories require much more time to fill in and personality is not the primary topic of interest in this study (Gosling, Rentfrow, & Swann, 2003). As has been said before, not much is known about the flamer. This is the first study in which a wide range of people will be participating and not only students, employees, or a community of one particular website. Also, flaming research hasn't previously used a personality test based on the Big-Five personality domains and it will be interesting to see if level of education or age has any influence on flaming behavior. It can be expected that mainly men will flame and depending on one's personality flames can be posted for amusement, for pass time, to relax, and/or for escape. Because of the novelty of this research it is impossible to predict any further outcomes.

The aforementioned studies by Moor, Heuvelman, & Verleur (2010) and Reinig, Briggs, Brandt, & Nunamaker (1997) indicate that people may even refrain from using certain technologies because of flaming activity. So it's interesting to see if people actually refrain from visiting websites and who these people are in terms of personality. Previous research has always focused on the flamers and those receiving a flame, yet the perceptions of "innocent bystanders" (for lack of a better term) have, until now, been ignored.

RQ2a: Who is bothered most by flaming?

RQ2b: Do those bothered refrain from visiting certain websites?

Trommelen (2011) reported that 20% of the people avoid websites because of flaming activity, so it can be expected that a similar result will be found. It is, however, unknown what factors influence

this behavior as well as how much one is bothered by flames. Since flames evoke more flames (Aiken & Waller, 2000) it is quite possible that flamers themselves are bothered by flames as well.

No topic is safe from flaming (Aiken & Waller, 2000), but does the same hold for websites? One can assume that when the entire Dutch online population visits one particular website there will surely be some flaming activity. However no website (that allows comments) has that kind of reach. So the real question is whether flaming occurs in every online community or not. This leads to the final RQ:

RQ3: Are all message boards susceptible to flaming?

Considering the research from Aiken & Waller (2000) and the widespread occurrence of flames on the likes of YouTube (Moor, Heuvelman, & Verleur, 2010) and various news sites (Opten, 2011b) it can be expected that this is indeed the case.

Method

Participants

An online questionnaire was spread through various websites and message boards. Each participant has filled in the same questionnaire with a short additional survey for those who indicated having flamed at one time or another. In total 850 participants completed the questionnaire. Participants had a mean age of 29.22, 74.9% was male and 94% had the Dutch nationality. The levels of education ranged from elementary to university level with a majority (35.9%) attending (or having attended) a higher vocational education.

Procedure

The questionnaire started with a word of welcome and a definition of flaming. People differ in their perceptions as to what constitutes a flame regardless of definitions (Lange, 2005). Therefore it was very important to make sure that the subjects knew what, in this study, constituted a flame. The simplicity of the definition used here is perfect for a study of this nature.

Next up were a couple of demographical questions (age, gender, level of education, nationality) and general questions on the participant's internet and, more specifically, message board use. The next section presented several statements and participants were asked (on a 5-point Likert scale) to what extend they agree with them. The statements are: (S1) I encounter flames regularly, (S2a) I am bothered by flames aimed at myself, (S2b) I am bothered by flames aimed at others, (S2c) I am bothered by flames aimed at messages, (S3) flames bother others, and (S4) I avoid websites because of flaming activity. As a scale these items show a sufficient level of internal consistency, Cronbach's α=.73. The statements were followed by an agree/disagree question on whether one flames oneself. For most participants the questionnaire would then be completed. Participants who indicated having flamed at one time or another were presented with two extra statements: (S5) I flame regularly and (S6) I flame on every message board I visit. Again, these items show a sufficient level of internal consistency as a scale, Cronbach's α=.77. An extra set of questions regarding the participant's motives to engage in flaming activity was then presented. This section consisted of 16 items, measuring 8 flaming motives and was based on items previously employed by Nazareth (2011) and Rafaeli & Ariel (2008). The TIPI finalizes the questionnaire. The complete, original (Dutch) questionnaire can be found in the appendix.

Selection of websites

The questionnaire was posted on several Dutch message boards, selected on grounds of activity (e.g. number of posts made per day, number of people logged in at the same time, web traffic), topics being discussed and target audience. Message boards enabled the research to reach a large group of diverse participants.

The selection was aided by a forum ranking website called Big-Boards.com (which gives an overview of the biggest Dutch message boards based on two criteria: total number of posts and total number of registered members). Although the website was a good starting point there were several issues to be considered: (1) the total number of registered members is not a good indication of how many members

are actually actively contributing to the message board. People may have several accounts, because they have lost their passwords or have forgotten that they had registered at an earlier time. On top of that, several message boards require people to be registered before they can read further. Other reasons include a loss of interest in the topic under discussion or loss of time for active involvement. (2) In order to reach as many people as possible it is, to say the least, helpful to post the questionnaire on those message boards that are the most active at this point in time rather than the past. Thus total number of posts is of little or no concern. The same can of course also be said of total number of registered members. (3) Message boards have to apply to Big-Boards.com to be included in their ranking. As a result, this list was far from complete and in order to get a more complete overview of Dutch message boards other resources had to be called upon. One of these resources is Alexa.com, a web statistics website mainly concerned with web traffic. Alexa.com keeps track of every website visited from within the Netherlands and makes a ranking based on this. From this ranking the highest scoring message boards have been added to the selection of useful message boards. The downside of Alexa.com was that, like Big-Boards.com, websites have to apply in order to be included in the ranking. Because of this web portals like Startpagina.nl and Startkabel.nl have been used as a final resource to complete the selection used in this research. The message boards found on these web portals have also been screened for activity, topic and target audience.

In order to reach the most diverse group of respondents as possible several computer related message boards, although more active than many boards discussing other topics, have not been included in the selection to avoid overrepresentation of this audience.

Below is the final selection of message boards with a short description:

- Sexwoordenboek (*Sex dictionary*) – anything sex and love related.

- Motor-Forum (*Motorcycle board*) – anything motorcycle related.

- FOK!forum – universal message board. Part of FOK!, a website dealing with current events, reviews, columns, etc. FOK! is the self-proclaimed 'biggest online community of The Netherlands'.

- Partyflock – dance and house music, parties, etc. The site is most notable for its news, party calendar, and photo section.

- Hardware.Info – anything technology related. A website and magazine focusing on news, reviews, and advice regarding computer hardware and consumer electronics. The site also has an extensive price comparison.

- Voetbalzone (*Football zone*) – anything football/soccer related. Part of one of the largest football news websites of The Netherlands.

- Androidworld – (mobile) devices running on Adroid OS. A website and a magazine reporting news and reviews on Android hardware and software.

- Bokt – anything horse related. The world's largest message board on horses. The site reports news and has its own wiki and second hand section.

- Hondenforum (*Dogs board*) – anything dog related.

- HTforum – anything home theater related.

- Xboxworld – anything Xbox games console related. Part of a site regarding Xbox news, games, and background information.

- Scholieren.com (*Students.com*) – secondary school students. The website is most notable for its blog and its homework and book summary section.

- Gathering of Tweakers – anything technology related. Tweakers.net is the most visitied technology site in The Netherlands and focuses on news and reviews, but the price comparison of consumer electronics, second hand section, and IT job openings are popular subsections as well.

Results

Almost half (46.5%) of the participants indicated being online more than 20 hours a week. In total 85.7% indicated being online more than the most recent country average of 9.8 hours a week (STIR Establishment Survey, 2012). Of this time a majority of 32.4% indicated spending between 1 and 20% on message boards. The average participant spent 20 to 60% of their total online time on message boards.

The 850 participants had a total of 1729 accounts on various message boards, 1270 of which on message boards featured in this study. The technology oriented Gathering of Tweakers and Hardware.Info were the most popular message boards amongst the participants, with 285 and 235 active visitors respectively. Voetbalzone (19) and Scholieren.com (20), on the other hand, were the least visited message boards. On average there were 97.7 active visitors on each message board. For a complete overview see table 1.

Table 1 An overview of the activity per message board. Active visitors were the participants who actively visited the message board, avoiders avoided visiting a message board because of flaming activity, active flamers were participants who flame on the message board, and inactive flamers are flamers who chose not to flame on the message board.

Message board	Active visitors	Avoiders	Active flamers	Inactive flamers
Sexwoordenboek	38	12	12	22
Motor-Forum	183	13	33	29
FOK!forum	139	130	45	20
Partyflock	27	37	10	18
Hardware.Info	235	22	18	48
Voetbalzone	19	14	5	22
Androidworld	50	10	6	25
Bokt	89	25	12	23
Hondenforum	97	27	22	19
HTforum	49	11	9	21
Xboxworld	39	7	12	21
Scholieren.com	20	14	2	20
Tweakers	285	33	20	63
Other	459	83	57	39
Total	1729	438	263	390
Total (minus other)	1270	355	206	351

Because of the ordinal nature of the data all analyses (unless mentioned otherwise) were done using the Kruskal–Wallis one-way analysis of variance (corrected for tied ranks) with the Mann-Whitney test for post-hoc analyses. An alpha level of .05 for all tests was used.

Flames are a common sight on the internet, as indicated by an average answer of 3.70 (SD=1.11) to S1. A Mann-Whitney test revealed that women were significantly more likely to encounter flames than men, U=55428.5, p<.001. The more time someone spends online the more often they encounter flames, $\chi^2(4,N=847)=18.07$, p=.001. This also holds for relative time spent on message boards, $\chi^2(4,N=846)=14.74$, p=.005.

Who are the Dutch flamers and what drives them?

In order to create a clear image of who the Dutch flamer is, the answers were sought in all sections of the questionnaire; from the first questions on demographics to the concluding personality test. As predicted, there were relatively more men (76%) who have at one time or another flamed than women (48%), U=59577, p=.006. However, those women who did flame, flamed more regularly than the average man did, U=3745, p=0.036. Whether participants flamed on every message board they visited was not influenced by gender. Age and level of education showed no significant effects on flaming behavior.

The amount of time spent online did have a significant effect on whether one has flamed, $\chi^2(4,N=849)=16.76$, p=.002. This indicated that participants who spent more than 20 hours a week online were significantly more likely to be a flamer than those who spent 16-20 (p=.001), 11-15 (p=.014), 6-10 (marginally significant, p=.075) or 1-5 (p=.041) hours online. The relative time spent on message boards was a significant predictor of whether one has flamed as well, $\chi^2(4,N=848)=15.67$, p=.003. Further analysis showed that those who spent the least relative time (1-20%) on message boards were less likely to have flamed than those who spent 21-40% (p=.021), 41-60% (p=.005), 61-80% (p=.001), or 81-100% (marginally significant, p=.055) How often participants flamed or whether they flamed on every message board they visited could not be explained by these variables.

Motives

Unlike in Nazareth's 2011 study, which employed the same flaming motive items measuring escape & anonymity these did not turn out to be reliable scales, Cronbach's $\alpha=.37$ and Cronbach's $\alpha=.61$ respectively. The other flaming motive measures were reliable (see table 2) and the individual items for these motives were combined for further analysis. Participants were most likely to flame for amusement and least likely to flame to get away from family and friends (escape 2).

Table 2 Means, standard deviations, and Cronbach's α per flaming motive

Motive	Mean	SD	Cronbach's α
Pass time	2.09	1.29	.80
Amusement	2.54	1.48	.93
Habitual	1.64	0.99	.78
Rituals	2.10	1.19	.72
Relaxation	1.87	1.19	.86
Status enhancement	1.43	0.82	.76
Escape 1	1.97	1.22	-
Escape 2	1.20	0.62	-
Anonymity 1	1.48	0.99	-
Anonymity 2	2.01	1.31	-

Further analysis showed that the more participants agreed with an item the more likely they were to both have flamed more frequently and have flamed on every message board they visited (see table 3 for statistical results). This, however, did not hold for (a) anonymity 1; participants who disagreed completely were significantly less likely to have flamed regularly than those who disagreed and those who agreed completely, other pairwise differences were not statistically significant. When considering whether someone had flamed on every message board they visited, only those who disagreed with the item were significantly more likely to flame everywhere, (b) escape 2; participants who neither agreed nor disagreed were more likely to have both flamed more frequently and flamed on every message board they visited than those who (completely) disagreed. Yet there was no statistically significant difference found between those who completely agree and other minded participants.

	I flame regularly		I flame on every message board I visit	
Item	χ²	p	χ²	p
Pass time	63.76	<.001	76.23	<.001
Amusement	69.79	<.001	58.32	<.001
Habitual	66.43	<.001	61.98	<.001
Rituals	59.38	<.001	59.59	<.001
Relaxation	56.69	<.001	48.32	<.001
Status enhancement	24.70	.002	33.19	<.001
Escape 1	36.78	<.001	41.86	<.001
Escape 2	7.11	.069	17.36	.001
Anonymity 1	12.67	.013	30.73	<.001
Anonymity 2	7.16	.127	15.98	.003

Age, gender, and level of education had no significant effects on motives for flaming. The questionnaire also featured an open ended question: "Can you explain why you would flame on a message board?" Of the 850 participants, 200 took the time to answer this; 12.5% of these state that they would (only) flame as a response to someone else's flame. The flames to which they would react could be aimed at the participant, someone else, or a message.

Personality

Table 4 shows the outcome of the TIPI.

Table 4 Results of the TIPI

	Mean	SD
Agreeableness	4,80	1,13
Extraversion	4,47	1,58
Conscientiousness	4,85	1,22
Emotional stability	5,50	1,14
Openness to experiences	5,16	1,11

Further analysis showed that participants who were less agreeable and/or less conscientious were more likely to have flamed more frequently, $\chi^2(6,N=228)=20.40$, $p=.060$ (marginally significant) and $\chi^2(6,N=227)=20.46$, $p=.039$ respectively. Furthermore, these participants were also more likely to have

flamed on every message board they visited, $\chi^2(6,N=225)=25.97$, $p=.011$ and $\chi^2(6,N=224)=19.71$, $p=.049$ respectively.

Personality can also affect the motives to flame and the results showed that this was indeed the case. The lower participants ranked on agreeableness, the more likely they were to flame for pass time ($\chi^2(12,N=228)=28.61$, $p=.005$), out of habit ($\chi^2(12,N=227)=25.15$, $p<.014$), to enhance their status ($\chi^2(12,N=227)=27.28$, $p=.007$), and/or because they were anonymous (item 1: $\chi^2(12,N=230)=33.55$, $p=.001$). Agreeableness was also found to have a marginally significant effect on two other motives; see table 5. Introverted participants were more likely than extraverted participants to flame as part of their daily rituals ($\chi^2(12,N=230)=21.57$, $p=.043$ and/or because they were anonymous (item 1: $\chi^2(12,N=231)=25.51$, $p=.013$). The lower participants ranked on conscientiousness the more likely they were to flame for pass time ($\chi^2(11,N=227)=29.60$, $p=.002$), for amusement ($\chi^2(11,N=229)=30.18$, $p=.001$), out of habit ($\chi^2(11,N=226)=27.89$, $p=.003$), as part of their daily practices ($\chi^2(11,N=228)=21.96$, $p=.025$), to relax ($\chi^2(11,N=228)=21.10$, $p=.032$), to enhance their status ($\chi^2(11,N=226)=30.64$, $p=.001$), as a form of escape (item 1: $\chi^2(11,N=228)=23.62$, $p=.014$), and/or because they were anonymous (item 1: $\chi^2(11,N=229)=24.67$, $p=.010$, item 2: $\chi^2(11,N=229)=23.20$, $p=.017$). Openness to experiences did not affect flaming motives, but the lower one ranked on emotional stability the more likely one was to flame to enhance one's status ($\chi^2(11,N=227)=26.81$, $p=.005$), as a form of escape (item 2: $\chi^2(11,N=229)=22.29$, $p=.022$), and/or because of anonymity (item 1: $\chi^2(11,N=230)=29.98$, $p=.002$, item 2: $\chi^2(11,N=230)=20.59$, $p=.038$).

Table 5 The effects of the different personality traits on flaming motives. Significant effects are bold.

Item	Agreeableness		Extraversion		Conscientiousness		Emotional stability		Openness to experiences	
	χ^2	p	χ^2	p	χ^2	p	χ^2	p	χ^2	p
Pass time	**28.61**	**.005**			**29.60**	**.002**				
Amusement	19.27	.082			**30.18**	**.001**				
Habitual	**25.15**	**.014**			**27.89**	**.003**				
Rituals			**21.57**	**.043**	**21.96**	**.025**				
Relaxation	18.93	.090			**21.10**	**.032**				
Status enhancement	**27.28**	**.007**			**30.64**	**.001**	**26.81**	**.005**		
Escape 1					**23.62**	**.014**				

Escape 2						**22.29**	**.022**
Anonymity 1	**33.55**	**.001**	25.51	.013	**24.67**	**.010**	**29.98**	**.002**
Anonymity 2	20.00	.067			**23.20**	**.017**	**20.59**	**.038**

Who is bothered most by flaming?

The average answers to S2a (1.80), S2b (2.69), and S2c (2.73) indicated that the participants were only slightly bothered by flames. A Mann-Whitney test showed that women were bothered significantly more than men by flames aimed at others, U=51454.5, p<.001, as well as messages, U=58408, p=.013. Level of education affected how much one was bothered by flames aimed at oneself, χ^2(4,N=822)=11.80, p=.019. More specifically: those who (have) followed a higher vocational education disagreed significantly more than others with S2a. The time spent online affected how much one was bothered by flames as well, χ^2(4,N=847)=9.90, p=.042. Further analysis showed that the more time spent online, the more likely someone was to agree with S2a. Finally, how often flames were encountered was a good predictor of how much one was bothered by flames of any kind; a significant effect was found on S2a (χ^2(4,N=844)=58.23, p<.001), S2b (χ^2(4,N=841)=53.09, p<.001), and S2c (χ^2(4,N=840)=53.39, p<.001).

To what extent were flamers themselves bothered by flames? First, the differences between those who have and have not flamed were examined by employing a Mann-Whitney test; flamers were found to be significantly more likely to be bothered by flames aimed at themselves than non-flamers, U=77947, p=.010. Yet, for S2b and S2c the effect was reversed, flamers indicated that flames aimed at others or at messages bothered them less than non-flamers, U=66839, p<.001 and U=71035, p<.001 respectively. Taking into account the amount of flaming a similar pattern arose: those who completely disagreed with S5 were significantly less bothered by flames aimed at themselves than those who disagreed, U=2626, p=.003. Other pairwise comparisons showed no significant differences. In accordance with previous results, the more a participant flamed the less he agreed with S2b (χ^2(4,N=237)=20.94, p<.001) and S2c (χ^2(4,N=236)=16.80, p=.002). Whether participants flamed on every message board they visited had no significant effect on S2a, yet the more one flamed on every

message board, the less one was bothered by flames aimed at others (χ^2(4,N=234)=21.52, $p<.001$) as well as messages (χ^2(4,N=233)=16.91, $p=.002$).

Although flamers were bothered by flames as well, they did not think others were bothered as much by flames. Flamers, as opposed to non-flamers, thought flames to be significantly less bothersome to others, U=56869, $p<.001$. Furthermore, the more participants flamed and the more message boards they used to flame, the less they thought flames bothered others, χ^2(4,N=234)=26.22, $p<.001$, and χ^2(4,N=232)=23.30, $p<.001$ respectively.

Do those bothered refrain from visiting certain websites?

Most participants did not avoid visiting websites because of flaming activity (M=2.01, SD=1.28). A Mann-Whitney test revealed that women were significantly more likely than men to avoid websites, U=60604, $p=.032$. Age also affected answers to S4, χ^2(52,N=840)=81.28, $p=.006$. Further analysis showed that both the youngest (under 20 years) and the oldest participants (over 60 years) were least likely to avoid websites. Level of education also had a significant effect, χ^2(5,N=840)=20.66, $p=.001$. More specifically, those who attended or had attended a university were most likely to avoid websites.

The more one was bothered by flames aimed at oneself (χ^2(4,N=846)=40.62, $p<.001$), others (χ^2(4,N=843)=111.48, $p<.001$), or messages (χ^2(4,N=843)=94.09, $p<.001$) the more likely one was to avoid websites. The measure of agreement with S3 showed the same effect, χ^2(4,N=845)=110.92, $p<.001$.

Flamers tended to avoid websites less than non-flamers, U=68662, $p<.001$, and, in accordance with previous outcomes, those who flame less frequently are more likely to avoid websites, χ^2(4,N=237)=9.98, $p=.041$. However, whether participants flamed on every website they visited was of no influence on avoiding websites, χ^2(4,N=234)=4.65, ns. In terms of personality, the lower one ranked on emotional stability, the more likely one was to avoid websites, χ^2(11,N=231)=23.30, $p=.016$. The other personality factors did not affect this behavior.

Are all message boards susceptible to flaming?

As can be seen in table 1 every participating website was visited by active flamers. However, a Mann-Whitney test showed that the degree of flaming differed per message board. FOK!forum ($U=37595$, $p<.001$), Partyflock ($U=8100$, $p=.005$), and Voetbalzone ($U=5634.5$, $p=.012$) were visited significantly more by participants who had flamed at least once. Bokt, on the other hand, was visited least by participants who had flamed at least once ($U=29124.5$, $p=.012$). Flamers visiting Sexwoordenboek ($U=997$, $p=.045$), FOK!forum ($U=3469$, $p<.001$), Partyflock ($U=637$, $p=.004$), Voetbalzone ($U=712$, $p=.036$), Hondenforum ($U=1856.5$, $p=.042$), and Xboxworld ($U=1204.5$, $p=.004$) were significantly more likely than others to flame more frequently. While flamers who visited Hardware.Info ($U=2940$, $p<.001$), Androidworld ($U=1416$, $p=.037$), and Gathering of Tweakers ($U=4351$, $p<.001$) were least likely to frequently flame. Those flamers who visited Motor-Forum ($U=3458$, $p=.003$), FOK!forum ($U=3878.5$, $p=.004$), Partyflock ($U=856$, $p=.049$), and Xboxworld ($U=1175.5$, $p=.004$) were significantly more likely than others to flame on every message board they visited. Finally, Hardware.Info ($U=3976$, $p=.002$) and Bokt ($U=1372$, $p=.016$) were significantly less likely to be visited by flamers who flame on every message board.

Participants who indicated to have flamed on Sexwoordenboek, Motor-Forum, FOK!forum, Partyflock, Voetbalzone, and Xboxworld were more likely to both flame more regularly and flame on every message board they visited. Those who flame on Hondenforum were found to be significantly more likely to flame more frequently, while those who flame on Gathering of Tweakers were found to be significantly more likely to flame on every message board they visited. Flamers who indicated to have chosen not to flame on Hardware.Info and Gathering of Tweakers, were least likely to have been frequent flamers.

Discussion

Who are the Dutch flamers and what drives them?

On Dutch message boards the typical flamer is male (as expected; Aiken & Waller, 2000), spends 20+ hours a week online and at least 40% of this time on message boards. Yet, those women who do flame, flame more regularly than men. Age and level of education do not predict flaming behavior. The typical flamer flames for his amusement and for pass time, but not to enhance his status or as a form of escape. In general it can be said that the more the flamer gets out of his motives to flame the more likely he is to both flame regularly as well as to flame on every message board he visits. For example: the more flaming amuses a flamer, the more he will flame and the more likely he is to do this on several message boards. This is, of course, precisely what UGT predicts (Ruggiero, 2001). However, participants who flame on several message boards are likely to disagree with "I would flame because nobody can find out I'm the one flaming". So maybe visitors of message boards do not feel as anonymous as has previously been presumed (e.g. Aiken & Waller, 2000; Kiesler, Siegel, & McGuire, 1984), more on this later. In terms of personality the average flamer is fairly agreeable, extraverted, conscientious, emotionally stable, and open to experiences. Yet, the less agreeable and/or the less conscientious the flamer, the more likely he is to both flame regularly as well as to flame on every message board he visits.

The flamer's personality is also found to influence his motives to flame. The less agreeable the flamer, the more likely he is to flame for pass time, out of habit, because he is anonymous, and to impress others on the message board. Introverted flamers are most likely to flame as part of their daily practices and because they are anonymous. The lower flamers rank on conscientiousness, the more likely they are to flame for pass time, for amusement, out of habit, as part of their daily practices, to relax, to enhance their status, for distraction, and because they and others on the message boards are anonymous. Emotionally unstable flamers are most likely to flame to enhance their statuses, to get

away from their families and friends, and because they and others on the message boards are anonymous. Openness to experiences does not affect any flaming motive.

All in all, most participants disagree with the motivational statements and also indicate that they merely flame sporadically and only on one (or a select number of) message board(s). Thus it seems, like Aiken & Waller (2000) also found, that the majority of flames come from a small percentage of flamers who indeed get a lot of gratification out of flaming.

Who is bothered most by flaming?

Participants are only slightly bothered by flames aimed at others and flames aimed at messages, while flames aimed at themselves did not bother the average participant. Compared to men, women are bothered more by flames aimed at others and flames aimed at messages. Women also encounter flames more often than men. Overall, the results indicate that the more one encounters flames, the more they are bothered by them. This effect might stem from a difference in interpretation, as predicted by the research of Moor, Heuvelman, & Verleur (2010). One of the participants put it particularly well: "Flaming is in the eye of the beholder". Furthermore, participants who (have) followed a higher vocational education (compared to other educational levels) are bothered least by flames aimed at themselves.

Although few participants are bothered by flames aimed at themselves, those who are bothered by these are likely to be flamers themselves. Besides, the more one flames the more bothered one is. However, flamers are less likely to be bothered by flames aimed at others or flames aimed at messages; the more one flames the less bothered they are. On top of that, flamers think flames to be far less bothersome than non-flamers, and again: the more they flame the less they think of flames as bothersome. This could be due to a perceived norm of communicating (Lea, O'Shea, Fung, & Spears, 1992) or depersonalization (when the identity of a group is more salient than that of its members) (Reicher, Spears, & Postmes, 1995).

Do those bothered refrain from visiting certain websites?

The average participant does not avoid websites because of flaming activity. Those who do are most likely female, educated at university level, and bothered by flames aimed at themselves, others, and messages. The youngest participants (under 20 years old) and the oldest (over 60 years old) are least likely to avoid websites. In the case of the oldest participants this is probably due to their limited time spent online and concurring, relatively limited range of websites visited. This, however, does not hold for the youngest participants, but this is neither explained by the results, nor previous research, so further research on this matter is needed.

Flamers themselves avoid websites less often than non-flamers and the less one flames the more likely one is to avoid websites. Participants ranking low on emotional stability are most likely to avoid websites. Other personality traits do not affect this behavior.

Are all message boards susceptible to flaming?

The results indicate that this is indeed the case, but the amount of flaming differed greatly. Fok!forum stands out as breeding ground for flamers; it has the largest number of active flamers and is avoided the most amongst the participants. Gathering of Tweakers and Hardware.Info, on the other hand, are most often named as a message board where flamers choose not to flame. This is probably not due to the topics under discussion as other technology oriented message boards are not spared as much and Aiken & Waller (2000) also showed different topics generate an equal amount of flames. Many participants explain that the ambience of a message board and the fellow community members make one board more suitable to flame on than others. Gathering of Tweakers is said to be fairly professional in its communication, whilst Xboxworld and Fok!forum are more informal and flaming is thus more accepted. Additionally, several message boards are said to more of a close community, like Hondenforum, Bokt, and Motor-Forum. As a result participants feel less anonymous and can either flame because they feel at home and as such, free to say what they like or not flame at all out of respect for others. This reduced level of anonymity has already been found to have affected flaming behavior

in a previous section. An alternative explanation could again be a perceived norm of communicating or depersonalization.

Practical implications

It is very difficult to say anything about the practical value of these results. Flaming behavior is exhibited by all kinds of people, so it is not a matter of banning one (or several) group(s) of people from a website. In fact, according to Miller (2012) the problem lies much deeper than simply posting a flame. He argues that, in online environments, man's sense of moral and ethical responsibility to others is weakened. As such incivility is displayed online far more often than when one is conversing face to face. Countries like the United States and Great Britain, are attempting to regulate interpersonal online behavior and several people have even been convicted for posting abusive messages online. Great Britain is even considering a law which forces internet service providers to identify "trolls" (a type of flamer who posts unpopular comments to provoke others into starting a heated discussion) so they can be prosecuted (Miller, 2012). It seems very unlikely such a law will be passed in the Netherlands, since content in other media (television for example) is, contrary to the United States and Great Britain, unregulated as well (Heuvelman, Peeters, & van Dijk, 2005). This lack of media regulation might be another indication of the *status aparte* of the Netherlands in terms of flaming behavior; the Dutch do not censor their media and they are not known for mincing their words either.

Limitations

Scholieren.com and Voetbalzone generated the least response due to unforeseen troubles with the placement of the questionnaire, so unfortunately these message boards are not represented as well as they could have. A second limitation is the section of the questionnaire regarding flaming motives; in order to keep the questionnaire as small as possible only two items measured each motive. Adding more items would surely enhance the reliability of the scale. The biggest problem in this study, however, is the definition of flaming. Although the definition used here was clearly stated on the message boards as well as the questionnaire, several participants expressed their disagreement with

it and as a result used their own interpretation of what constitutes as flaming. After several conversations with members of various message boards, it has proven extremely difficult (if not impossible) to change long held beliefs regarding the meaning of flaming and this will very likely also be an issue in future research.

Future research

The current study examines flaming in the Netherlands, a country presumed to be unique in this regard (Opten, 2011a). However, what sets the Dutch flamer apart from other flamers is not fully understood. Does a difference only exist between the original *reaguurders* and "regular" flamers, or are the Dutch flamers in general different from flamers in other countries? A study comparing flamers across various countries could shed light on this question and give an insight in cultural differences regarding flaming behavior.

This research asks, aside from general flaming behavior and its predictors, about the negatives of flaming (i.e. how much one was bothered by flames). Yet, many respondents have indicated that flaming is more than displaying hostility and using offensive language. To these people a well thought out, well written flame is a "form of art" or a "piece of poetry". Future research would do well to measure to what extent these views are held in online communities. This holds for another motive to flame as well; people may flame purely to respond to someone else's flame. Fight fire with fire so to speak. This motive has not been found in previous research and came up in an open ended question. Also, instead of only asking how often participants encounter flames, future research could ask how often they encounter flames aimed at themselves, others, and messages in order to build a more comprehensive view. Another welcome adjustment to the questionnaire would be to extend the section regarding motives with more items per motive, as indicated in the previous paragraph.

Future research might also take a more practical point of view. How can the knowledge gained in studies like this one be brought to practical use, i.e. how (if at all) can moderators and website administrators use this knowledge to keep visitors in check? Another avenue might be to look at

personal development of flaming behavior. When and how does it start? Is it "once a flamer, always a flamer" or does the behavior stop at one point? Answers to such questions would likely hold more practical value than answers found in this research.

In order to truly understand receivers of flames and innocent bystanders they could both be presented with a TIPI, this would also help define the differences, in terms of personality, between flamers and non-flamers. A perceived norm of communication and depersonalization came up several times as possible explanations of flaming behavior, future research could verify whether these effects are valid indicators of flaming.

Finally, the results show that anonymity is not necessarily a given, from the participant's point of view, so a study designed to further investigate anonymity on message boards (or the internet in general) would be most welcome.

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Appendix

Original (Dutch) questionnaire

Deze vragenlijst gaat over de vijandigheid van het taalgebruik op Nederlandse discussiefora en websites, oftewel *flaming*. Flaming kan tot uiting komen in een belediging, in vloeken of in andere aanstootgevende taal.

De vragenlijst begint met een aantal algemene vragen, hierna volgen specifieke vragen over flaming.

Leeftijd:
Geslacht:
Hoogst genoten opleiding:
Nationaliteit:

Hoeveel tijd spendeert u wekelijks gemiddeld online (in uren)?	1-5	6-10	11-15	16-20	20+
Hoeveel tijd bent u hiervan actief op forums?	1-20%	21-40%	41-60%	61-80%	81-100%
Op welke fora bent u actief?	Checklist met alle participerende fora				

Geef aan in hoeverre je het eens bent met de volgende stellingen op een schaal van 1 (helemaal oneens) tot 5 (helemaal eens).

Ik kom vaak flames tegen	1	2	3	4	5
Ik heb last van flames:					
...die op mij zijn gericht	1	2	3	4	5
... die op anderen zijn gericht	1	2	3	4	5
...die op een bericht zijn gericht	1	2	3	4	5
Flames zijn andere internetgebruikers tot last	1	2	3	4	5
Zijn er websites die u vermijdt vanwege flamingactiviteit?	Ja	Nee			
Zo ja, welke?	Checklist met alle participerende fora				
Hebt u zelf wel eens geflamed?	Ja	Nee			

(De volgende vragen worden alleen gesteld aan diegene die heeft aangegeven wel eens geflamed te hebben)

Geef aan in hoeverre je het eens bent met de volgende stellingen op een schaal van 1 (helemaal oneens) tot 5 (helemaal eens).

Ik flame regelmatig	1	2	3	4	5
Ik flame op elk forum dat ik bezoek	1	2	3	4	5
Welke wel?	Checklist met participerende fora				
Welke niet?	Checklist met participerende fora				
Onderbouwing? (Optioneel)	Open vraag				

Geef aan in hoeverre je het eens bent met de volgende stellingen op een schaal van 1 (helemaal oneens) tot 5 (helemaal eens).

Ik zou flamen op een forum:					
Om de tijd te verdrijven, vooral als ik me verveel	1	2	3	4	5
Omdat ik het leuk vind	1	2	3	4	5
Omdat ik het al lang doe	1	2	3	4	5
Omdat het in mijn omgeving (vaker) gebeurt	1	2	3	4	5

Om mijn zinnen te verzetten	1	2	3	4	5
Omdat niemand er achter kan komen dat ik flame	1	2	3	4	5
Omdat het ontspannend is	1	2	3	4	5
Om indruk te maken op andere mensen in het forum	1	2	3	4	5
Omdat ik me daarmee vermaak	1	2	3	4	5
Omdat dat hoort bij een forum	1	2	3	4	5
Om familie en vrienden uit de weg te gaan	1	2	3	4	5
Omdat ik op deze manier ontspan	1	2	3	4	5
Omdat ik mij dan belangrijker voel dan in het echte leven	1	2	3	4	5
Als ik niks beters te doen heb	1	2	3	4	5
Omdat ik de personen (toch) niet ken	1	2	3	4	5
Omdat het goed in mijn dagelijkse ritme past	1	2	3	4	5

Hieronder staat een aantal eigenschappen die al dan niet op jou van toepassing kunnen zijn. Noteer alsjeblieft naast elke bewering in hoeverre je het met de bewering eens bent. Beoordeel steeds in hoeverre beide eigenschappen op jou van toepassing zijn, zelfs wanneer één eigenschap meer van toepassing is dan de andere eigenschap.

1 = sterk oneens
2 = enigszins oneens
3 = klein beetje oneens
4 = niet oneens, niet eens
5 = klein beetje eens
6 = enigszins eens
7 = sterk eens

Ik zie mezelf als

1. _____   Extravert, enthousiast

2. _____   Kritisch, ruziezoekend

3. _____   Betrouwbaar, gedisciplineerd

4. _____   Angstig, snel overstuur

5. _____   Open voor nieuwe ervaringen, complex

6. _____   Gereserveerd, stil

7. _____   Sympathiek, warm

8. _____   Slordig, achteloos

9. _____   Kalm, emotioneel stabiel

10. _____   Behoudend, niet creatief

Hartelijk bedankt voor uw medewerking, als u op de hoogte wil worden gehouden over de uitslag van het onderzoek kunt u nu hier uw e-mailadres invullen: