

Master Thesis

Flaming on Facebook

Alexandra Sophie Grote

s0144592

Research Report

August 2012

University of Twente

Faculty of Behavioural Sciences

Master Program: Human Factors and Media Psychology

Graduation Committee

Dr. A. Heuvelman

Dr. S. ben Allouch

Flaming on



Abstract English

In this study, flaming on Facebook is examined. This was done using a survey among Facebook users and a content analysis of two different posts of controversial political parties (one from Germany and one from the Netherlands). Flaming is defined as hostile posts (for example swearing, name-calling, insulting or otherwise offensive language) against another user (personal attacks) or his or her ideas in online communication. The results show that flaming occurs on Facebook, but self-reported flaming is low. Flaming was mostly seen on discussion sites (open groups or sites on Facebook). Moreover it was found that Facebook users have a negative attitude towards flaming on Facebook. And that felt anonymity on Facebook is low plus high accountability. Additionally some significant differences for flaming behavior between German and Dutch users were found. Dutch respondents used Facebook more often to only communicate with their friends, they found it more annoying to read flames on Facebook, felt stronger accountable for their actions, and used more often their real name as well as a real photo of themselves as profile photo on Facebook than German respondents did.

Abstract Nederlands

In dit onderzoek is flaming op Facebook onderzocht. Dit is gedaan door een vragenlijst onder Facebook gebruikers te houden en een inhoudsanalyse van twee verschillende posts van twee omstreden politieke partijen (een uit Duitsland en een uit Nederland). Flaming is gedefinieerd als het gebruik van vijandige posts, net als vloeken, schelden, beledigen of andere aanvallende taal, tegenover andere gebruikers of de ideeën van iemand anders in online communicatie. De resultaten laten zien dat flaming op Facebook gebeurt, maar zelfgerapporteerd flaming is laag. Flaming kan geobserveerd worden op discussie sites, zoals open groepen en sites op Facebook. Daarnaast is er vast gesteld dat gebruikers een negatieve houding tegenover flaming op Facebook hebben. Verder werd ontdekt dat de gevoelde anonimiteit laag is en de gevoelde verantwoordelijkheid hoog. Ook zijn er verschillen tussen Duitse en Nederlandse gebruikers gevonden. Nederlandse respondenten gebruikten Facebook vaker om alleen met vrienden te communiceren, vonden het storend om flames op Facebook te lezen, dachten sterker dat zij voor hun acties op Facebook verantwoordelijk gehouden kunnen worden en ten slotte gebruikten ze vaker hun echte naam en een echte foto van zichzelf als profiel foto op Facebook dan Duitse respondenten.

Table of contents

Abstract English	4
Abstract Nederlands	5
1. Introduction	7
2. Theoretical background	7
2.1 <i>Flaming</i>	7
2.2 <i>Facebook</i>	13
2.3 <i>Research questions</i>	16
3. Method	17
3.1 <i>Overview</i>	17
3.2 <i>Questionnaire</i>	17
3.3 <i>Content analysis</i>	18
4. Results	19
4.1 <i>Questionnaire</i>	19
4.2 <i>Content analysis</i>	26
5. Discussion	30
5.1 <i>Research questions</i>	30
5.2 <i>General Discussions</i>	33
6. Conclusion	33
7. Recommendations	34
8. Acknowledgements	34
9. References	34
10. Appendix	36
10.1 <i>Questionnaire</i>	36

1. Introduction

Thanks to the Internet it is nowadays much easier to communicate with people around the world. One way to make this communication possible is through the usage of Social Network Sites (SNSs). SNSs are used for different forms of communication, like communication with existing friends (Valkenburg & Peter, 2009), political discussions (Kushin & Kitchener, 2009) and exchanging information (Shin, 2010). SNSs, for example MySpace, Facebook and Twitter, have experienced a big growth in the last years (Kushin & Kitchener, 2009; Shin, 2010).

Through this rapid growth and new possibilities for communication, the occurrence of negative phenomena of computer mediated communication (CMC) are seen more often. One of the most occurring phenomena is flaming which has been researched a lot from different angles (e.g., Lapidot-Lefler & Barak, 2012; Lee, 2005; Moor, Heuvelman, & Verleur, 2010). Despite the fact that SNSs are often used for communication or as a platform for discussions, little research is done on flaming on SNSs (Kushin & Kitchener, 2009).

In this report the phenomenon of flaming on Facebook will be investigated.

2. Theoretical background

2.1 Flaming

In 1983 the first mentioning of the term flaming has been documented in The Hacker's Dictionary (Steele, 1983). Flaming was defined as the rapidly or incessantly speak of users about an uninteresting topic or with an absurd attitude (Steele, 1983). Henceforward the term was used in many different ways (Turnage, 2007). Flaming has been studied in different settings and from different angles (e.g. Alonzo & Aiken, 2004; Kushin & Kitchener, 2009; Lapidot-Lefler & Barak, 2012; Lee, 2005; Moor et al., 2010). As Lee (2005) states it is one of the most recognized phenomena of CMC.

However, flaming is lacking one definition and there is no real consensus on how to define it (Moor et al., 2010; Turnage, 2007). As known to most, the usage of different definitions can be a problem. According to O'Sullivan and Flanagin (2003) the concept of flaming is used inconsistently across and imprecise within research projects. It has been used to describe the display of offensive language or it has included all kinds of emotional expressions (Moor et al., 2010). Nevertheless, there is a general consensus among researchers

that aggressive or hostile communication during CMC belongs to the phenomenon of flaming (O'Sullivan & Flanagan, 2003).

In the next section several definitions of flaming are reviewed. Using this information, one definition of flaming is given. This definition will be used in this report. In addition, a list of several possible contributing factors to flaming is given.

2.1.1 Definitions of flaming

Lee (2005) notes that flaming is an expression of strong emotions. This view is also shared by Johnson, Cooper and Chin (2009). They state: "Flaming is generally defined as the anti-normative hostile communication of emotions that includes the use of profanity, insults, and other offensive or hurtful statements." (Johnson et al., 2009, p. 661). According to Kushin and Kitchener (2009) flaming includes posts in online discussions that personally attack another poster or attacks his or her ideas.

Flaming can also be defined as "[...] displaying hostility by insulting, swearing or using otherwise offensive language [...]" (Moor et al., 2010, p. 1537). Paziienza, Lungu and Tudorache (2011) describe flaming as an aggressive interaction. They define flames as "[...] a sequence of "non constructive", aggressive posts, that have no positive contribution to the discussion." (Paziienza et al., 2011, p. 46). Users that flame, attack another person on a personal level. According to Lapidot-Lefler and Barak (2012), among other phenomena, flaming can be attributed to the online disinhibition effect. The online disinhibition effect is defined as the lower behavioral inhibition in online environments (Lapidot-Lefler & Barak, 2012). The concept of the online disinhibition effect can be used to refer to a loss of inhibition. This loss of inhibition can manifest itself in the usage of aggressive behavior which would not be shown in the "real world" (Lapidot-Lefler & Barak, 2012). This side of the online disinhibition effect is called the toxic disinhibition. Toxic disinhibition is also used to describe acting-out behavior (for example damaging the self-image of others without benefits for personal growth) and flaming (typical manifestation of toxic online disinhibition; Alonzo & Aiken, 2004; Lapidot-Lefler & Barak, 2012). In the article of Lapidot-Lefler and Barak (2012) flaming is defined as the usage of hostile expression (swearing, insults and name-calling) towards other people in CMC. It is seen as a typical manifestation of toxic online disinhibition.

This identifies existing differences in the definition of flaming. Hence it is important to declare the applied definition. In this report flaming is defined as hostile posts (for example

swearing, name-calling, insulting or otherwise offensive language) against another user (personal attacks) or his or her ideas in online communication.

2.1.3 Contributing Factors to flaming

Apart from the different definitions of flaming, there are also various explanations for why flaming occurs more often in CMC than in face to face (FtF) communication and what factors contribute to flaming in CMC.

One underlying assumption found in most explanations are the missing visual and social cues (like physical size, facial expression or tone of voice) in CMC which are presented in FtF communication (e.g. Alonzo & Aiken, 2004; Moor et al., 2010). Moor et al. (2010) point out that this explanation (lack of social cues) has been used by many researchers to explain the occurrence of flaming. Nevertheless they also indicate that it has been criticized by others because of the technical determinism assumed (e.g. O'Sullivan & Flanagin, 2003). Another underlying contributing factor for most of the possible explanations is the anonymity of CMC.

In the subsequent sections some of the most widespread explanations for flaming in CMC will be discussed further.

2.1.3.1 Deindividuation

Deindividuation is one of the earliest explanations used for flaming (Moor et al., 2010). It was used to explain flaming by different authors (e.g. Alonzo & Aiken, 2004). Deindividuation theory states that in some groups individuals are not seen as individuals anymore. In addition, members of the group do not see other individuals as individuals (Diener, 1979; Postmes & Spears, 1998). When deindividuation occurs, individuals behave in a way they normally would not, like anti-normative and uninhibited behavior (Postmes & Spears, 1998). According to Festinger et al. (as cited in Postmes & Spears, 1998) deindividuation is associated with the feeling of not being accountable or looked at. Diener (as cited in Postmes & Spears, 1998) refined and extended the deindividuation theory and claims that deindividuation comes from decreased self-awareness. As Postmes and Spears (1998) state, as a result of decreased self-awareness “[...] the individual loses the capacity to monitor and plan behavior and to evaluate actions in terms of internal standards.” (p. 239). The awareness can be drawn away from the individual by different situational variables which in turn can cause deindividuation (Diener, 1979; Moor et al., 2010). These situational variables are for example anonymity, sensory input overload, arousal, novel or unstructured

situations, altered responsibility and consciousness altering substances such as drugs and alcohol (Coleman, Paternite, & Sherman, 1999; Moor et al., 2010; Postmes & Spears, 1998).

As Moor et al. (2010) state situations in CMC could be similar to situations in which deindividuation in groups take place. In CMC, people are mostly anonymous and because of the lack of social cues the awareness may be drawn away from others and their self (Moor et al., 2010). Due to this, flaming, seen as anti-normative behavior, may occur. However, as Coleman et al. (1999) state, it is possible that some characteristics of CMC like anonymity and lack of social cues may be enough to explain uninhibited behavior. Besides that, flaming, though seen as anti-normative behavior in the eyes of deindividuation theorist, could actually be normative behavior when it is appreciated in the specific context in which it occurs (Moor et al., 2010).

In their meta-analysis of 60 studies, Postmes and Spears (1998) discovered that across all studies only a small effect of deindividuation manipulation on uninhibited behavior (transgression of general social norms) can be found. They state: “In seeking to account for the variability of results, it appears that deindividuating conditions lead to an increase in normative behavior or, more specifically, to behavior that is normative within the social context.” (Postmes & Spears, 1998, p. 252). They concluded that results of these studies could actually better be explained by Social Identity model of Deindividuation Effects (SIDE) than by traditional deindividuation theory (Postmes & Spears, 1998).

SIDE is a more recent version of the traditional deindividuation theory to explain uninhibited behavior in CMC (Coleman et al., 1999; Moor et al., 2010; Postmes & Spears, 1998). The model states that uninhibited behavior can be observed because of increased salience of the identity of the group and not because of the loss of identity of oneself (Coleman et al., 1999; Moor et al., 2010; Postmes & Spears, 1998). The individual identity makes place for a group or social identity. This identity switch is called depersonalization (Moor et al., 2010). A bigger salience of groups can actually be observed in anonymous situations previously associated with the traditional concept of deindividuation (Moor et al., 2010). As Postmes, Spears and Lea (2000) point out in their study about online communication between students, different communication norms are developed over time. Some of these groups developed communication styles in which flaming occurred rather commonly. This is an indication that flaming can be seen as normative behavior in some groups, whereas other groups did not use flaming as a norm (Moor et al., 2010; Postmes & Spears, 1998).

2.1.3.2 Online disinhibition effect

As already mentioned, Lapidot-Lefler and Barak (2012) and Paziienza et al. (2011) state that flaming can be attributed to the online disinhibition effect. The online disinhibition effect means that people behave in CMC in other ways than in FtF communication (Lapidot-Lefler & Barak, 2012; Paziienza et al., 2011). It can have both a positive and a negative side. In CMC people open up more and share personal thoughts more often than in FtF communication (Paziienza et al., 2011; Suler, 2004). This is called the benign disinhibition (Suler, 2004). The negative effect however is that it can result in rude language, harsh criticism, anger etc. (Paziienza et al., 2011; Suler, 2004). This side of the online disinhibition effect is called the negative disinhibition effect (Lapidot-Lefler & Barak, 2012) or toxic disinhibition (Suler, 2004). According to Suler (2004) at least six factors are involved in why the online disinhibition (benign, toxic or also a mixture of both) is occurring. Some of these factors are “asynchronicity”, “solipsistic introjection”, “dissociative imagination”, “minimization of status and authority” (for further explanation, see Suler, 2004).

“Dissociative anonymity” is another factor contributing to the online disinhibition effect (Suler, 2004). It means that internet users can choose to be anonymous (Suler, 2004). Anonymity can be accomplished by for example not using the real name and hiding (a part of) the own identity. Anonymity gives the feeling that responsibility for flaming can be denied (Suler, 2004). Consequently the feeling of being unaccountable could occur, which in turn can result in uninhibited behavior in CMC (Lapidot-Lefler & Barak, 2012). Furthermore the anonymous user who is engaging in uninhibited behavior cannot be identified which enables the toxic disinhibition (Lapidot-Lefler & Barak, 2012). As Lapidot-Lefler and Barak (2012) state: “Several studies have shown that anonymity is a main factor in inducing the online disinhibition effect.” (p. 435). Lapidot-Lefler and Barak (2012) also indicate that the anonymity concept lacks one definition. For that reason they refined the concept and refer in their study not to the namelessness but to the unidentifiability. This aspect is in their eyes broader and more personally significant (Lapidot-Lefler & Barak, 2012). “The unidentifiability factor refers to the realistic condition of being unknown to online partners in terms of identifying personal details, such as gender, weight, age, occupation, ethnic origin, residential location, and so on. Online unidentifiability thus makes it possible to use real names while remaining relatively anonymous, as long as other identifying details remain concealed.” (Lapidot-Lefler & Barak, 2012, p. 435).

Another contributing factor is “invisibility” (Suler, 2004). This does not only mean that others do not know that the people are present but it also means that internet users are physically invisible to each other. This can enlarge the online disinhibition (Suler, 2004). According to Lapidot-Lefler and Barak (2012) through invisibility a special kind of social presence is fostered. This social presence can be defined by acknowledgement of others, awareness, perception and recognition. A decreased social presence could lead to a communication-induced deindividuation. This in turn can produce some kind of disinhibition. Online it is possible for users to control the level of social presence (Lapidot-Lefler & Barak, 2012). The user can for example control how long he/she is visible. Because of the invisibility people have the courage to do things that they would not normally do (Suler, 2004). Castellá, Abad, Alonso and Silla (2000) studied whether significant differences in the frequency of uninhibited behavior in groups that are working with different forms of communication (FtF, videoconferences and CMC) exist. The results showed that flaming was more often found in CMC than in FtF or videoconferences (Castellá et al., 2000). This is an indication that invisibility can contribute to the toxic disinhibition effect (Castellá et al., 2000; Lapidot-Lefler & Barak, 2012).

Another contributing factor to the toxic disinhibition effect mentioned by Lapidot-Lefler and Barak (2012) is eye-contact. They state that even when visibility is available (webcam), eye-contact may not. Due to this, information about facial expressions provided by eye-contact is not available. Visibility and eye-contact are thus two different things. It has been proposed that the absence of eye-contact can have an influence on the toxic disinhibition effect (Lapidot-Lefler & Barak, 2012; Suler, 2004). Nevertheless research on eye-contact is mostly limited to ‘real-world’ settings and not done in CMC (Lapidot-Lefler & Barak, 2012).

Lapidot-Lefler and Barak (2012) examined three of the presumably contributing factors to the toxic online disinhibition and therefore flaming - anonymity, invisibility and eye-contact. In their study participants were presented with a dilemma which they had to discuss using an online chat program. Their results showed that not the anonymity factor had a big impact on the toxic disinhibition effect as widely assumed but the eye-contact factor had the greater impact. However, they defined anonymity in terms of the unidentifiability. This could be an explanation for the found results which are contradictory with previously results (Lapidot-Lefler & Barak, 2012).

2.1.3.3 Other contributing factors

Besides the already mentioned possible contributing factors some other factors which could contribute to flaming can be identified.

As Moor et al. (2010) state, one possibility is that flaming is actually a miscommunication or misinterpretation. To study flaming the messages in question often are coded by a third party and thus interpreted by that third party (O'Sullivan & Flanagin, 2003). People who are participating in the communication might not see it as flaming. Some of the messages could be seen as offensive by outsiders, however sender and receiver actually think it is funny (Postmes et al., 2000). It is also possible that the sender of the message actually does not mean to flame but the receiver might interpret it as flaming. This kind of miscommunication could be occurring because of missing social cues like facial expression or tone of voice (Alonzo & Aiken, 2004; Moor et al., 2010).

According to Alonzo and Aiken (2004) “[...] flaming may be the result of deindividuation, difficulties of coordination and feedback, depersonalization and/or attentional focus, and conformity to a particular norm or etiquette associated with the computing subculture.” (p. 206). Furthermore, other variables like demographic, psychological and behavioral ones may play a role in the occurrence of flaming (Alonzo & Aiken, 2004).

2.2 Facebook

Facebook is one of the biggest SNSs worldwide (Hsu, 2012) and it still grows every day. At the end of March 2012, Facebook had 901 million active users monthly and 526 million active users daily (Facebook, 2012; Hsu, 2012). The mission of Facebook is “[...] to make the world more open and connected. People use Facebook to stay connected with friends and family, to discover what’s going on in the world, and to share and express what matters to them.” (Facebook, 2012).

Facebook was founded in 2004 (Facebook, 2012; Kushin & Kitchener, 2009; McClard & Anderson, 2008; Phillips, 2007). In the beginning it was restricted to Harvard students and within 24 hours, 1200 students had a profile on the so called TheFacebook (McClard & Anderson, 2008; Phillips, 2007). After that, other universities in Boston followed. In September 2005, high schools in the United States could sign up and from that moment on it spread all over the world (McClard & Anderson, 2008; Phillips, 2007). Ever since September

2006 it is possible for everyone with an email address to sign up on Facebook (McClard & Anderson, 2008; Phillips, 2007).

On Facebook, once an account is made, it is possible to change the name, profile photo and other information like high school the person went to, university etc.. It is not obligatory to use the real name or a real profile photo. Furthermore it is possible to adjust the privacy settings so that for example only friends see all information, can post comments on the wall or sent private messages. It is also possible to give friends of friends access to the own site or that everyone on Facebook has access.

2.2.1 Ways to communicate on Facebook

On Facebook different ways to communicate with other Facebook users exist. In the following paragraph, a summary of five different communication ways on Facebook is given.

First, there is the possibility to write a status post on the user's own wall. By writing a status post it is possible to let friends know what they are doing, what they have done, how they feel etc.. These posts can be seen by their friends, friends of their friends or by everyone who visit their Facebook profile. It depends on the privacy settings what other users can see. All self made posts can always be deleted by the user.

A second way to communicate with friends or others on Facebook is to write a post on the wall of other users. Who is allowed to write anything on another wall depends on the privacy settings of that user. These posts can be deleted by the user and/or the one who received the post.

Thirdly it is possible to comment on posts or photos of friends or on the users own posts/photos. Again who can comment on what depends on the privacy settings.

Besides this, it is possible to send a private message to another Facebook user. Users can send a message to just one person or to more. It depends on the users' privacy settings who can send a message to the user.

Another way to communicate is through groups. Every Facebook user can start one. The only restriction is that the group does not attack a specific person or group (Kushin & Kitchener, 2009). Once a user has started a group he/she can give it a name, description and the user can adjust the settings of the group. The group owner or administrator can set the group settings as "open", "closed" and "secret" (Kushin & Kitchener, 2009). An "open" group can be joined by everyone and every member can invite others. A "closed" group can only be joined through an invitation by the administrator. This is the same for a "secret" group. The

difference between “closed” and “secret” group is that the group information of the “closed” group can be seen in the profile of the members. The group information of a “secret” group cannot be seen and the group cannot be found if it is searched for (Kushin & Kitchener, 2009). Even if there are administrators for the group (often the person which has started the group and others who are made administrators by that first person) they do not have any responsibilities facing the group (Kushin & Kitchener, 2009). If they leave the group it will exist further. They are not necessarily moderators of the content.

2.2.2 Contributing factors to flaming and Facebook

Some of the factors which contribute to flaming in CMC can be observed on Facebook. However, until now not much research is done on flaming on Facebook and on contributing factors.

As pointed out earlier, anonymity is often seen as a contributing factor to flaming (Lapidot-Lefler & Barak, 2012). On Facebook people are able to create a profile which is distinct from the profile of others (Kushin & Kitchener, 2009). A profile can for example be personalized by photos, personal descriptions, membership of different groups and other things (Kushin & Kitchener, 2009). Everyone can adjust the privacy settings the way he/she wants to. The amount of published information can also be adjusted. Due to the possibility of different adjustments everyone can set their anonymity at the level they want to. They can either be fully anonym for people who are not friends or they can let everyone see everything and therefore not be anonym on Facebook. Another possibility is to just fill in the information one wants others to see. The only obligatory information is the name.

However, if someone is posting something in a group or on an open site, everyone can see at least the used name and the used profile photo. This could produce a feeling of accountability (Kushin & Kitchener, 2009). In addition a feeling of interpersonal interaction may occur. If the user communicates with another member not only the name is shown but also the profile photo can be seen. Thus it is possible that an increased feeling of accountability and a reduced anonymity have an effect on the flaming behavior of people on Facebook.

Another contributing factor mentioned is miscommunication. This is a factor which probably occurs on Facebook. As with other forms of CMC social cues are not available on Facebook. This could lead to miscommunication and misinterpretation of posts. At the same

time the possibility is present that a third party is interpreting the message as being offensive when it is not meant and/or experienced that way.

As previously mentioned, the deindividuation theory has been used to explain the occurrence of flaming in CMC. Deindividuation can be affected by different situational variables like anonymity. As stated earlier anonymity is reduced due to the profile photo and name that can be seen by other Facebook users. As a result it is possible that deindividuation is not occurring on Facebook. Consequently deindividuation has a rather small effect on flaming on Facebook.

Furthermore, SIDE has been used to explain flaming. As indicated bigger salience of groups have been observed in anonymous situations. This means that it is possible that in discussion groups on Facebook the identity of the group is more salient. However, the anonymity on Facebook is questionable. For that reason it can be concluded that SIDE has no or barely any effect on flaming on Facebook.

The online disinhibition effect is used as an explanation for the occurrence of flaming as well. It can be affected by several factors (for example anonymity, invisibility and eye-contact). How anonymity could play a role on Facebook is explained. Eye-contact is not relevant for flaming on Facebook since no possibility is given to chat on Facebook with a webcam. However, invisibility can be adjusted on Facebook. It is possible to set the chat status on “offline” with the consequence that no one can see that the user is visiting Facebook. As with every online communication, Facebook users are physically invisible to one another. In addition, Facebook users can control their social presence (for example by adjusting the chat status if someone wants to be (in)visible). As a result of decreased social presence the online disinhibition effect could occur. Thus it can be concluded that invisibility can be adjusted on Facebook and could occur. This in turn means that this contributing factor is possible on Facebook. Nevertheless invisibility is just one factor which can induce the online disinhibition effect and for other factors like anonymity it is questionable if it takes place on Facebook.

2.3 Research questions

The objective of this study is an explorative study of flaming on Facebook. Not only the occurrence of flaming on Facebook is investigated, but also how people feel about flaming on Facebook. An attempt is made to find out where flaming takes place on Facebook.

Subsequently, the anonymity of people on Facebook is surveyed, and finally the differences between German and Dutch Facebook users are studied.

The specific research questions are:

RQ1: Does flaming occur on Facebook?

RQ1a: Do people engage in flaming on Facebook?

RQ1b: Where does flaming occur on Facebook?

RQ1c: What do users of Facebook think about flaming?

RQ2: How anonymous do people feel on Facebook and how accountable do they feel for their actions on Facebook?

RQ3: Are there significant differences in flaming behavior between German and Dutch Facebook users?

3. Method

3.1 Overview

To study flaming on Facebook two different kinds of research were done. Firstly, a questionnaire among Facebook users about flaming on Facebook is used. Secondly, a content analysis of different posts in open groups or sites is conducted. Subsequently the two methods are described.

3.2 Questionnaire

In this part the material used for the questionnaire is discussed, together with an explanation on how respondents were found.

3.2.1 Material

The survey consisted of four parts. The intention of the first part was to acquire demographic information about the respondents (three questions). The second part dealt with the behavior of the respondents on Facebook (eight questions). For example they were asked to answer how long they have a Facebook account and to answer questions about their posting behavior, usage of their account and how often they comment on a status post of their friends. The intention was to get a general idea about the usage of Facebook of the respondents. Next, a definition of flaming was given to the respondents, to ensure everyone understood the term in the same way. The third part did consist of 18 statements about the flaming behavior of the

respondents and other users. The objective was to learn where respondents have seen flaming and their attitude towards flaming on Facebook. The participants had to specify the degree they agree on a Five-Point Likert scale (1: disagree, 2: slightly disagree, 3: neutral/not sure, 4: slightly agree, 5: agree) for each statement. Additionally, the possibility was given to clarify where they have seen flaming on Facebook. No standard questionnaire about flaming was found in literature. For that reason statements used by Moor et al. (2010) were adjusted to meet the research objective. The last part of the survey was about felt anonymity and accountability on Facebook. Respondents had to specify on eight statements to which degree they agree on the already mentioned Five-Point Likert scale. In literature no standard questionnaire was found for felt anonymity and accountability in CMC. Therefore it was attempted to provide a questionnaire with statements which were similar to the statements used by Moor et al. (2010). At the end of the survey respondents had the possibility in an open question to share anything else about flaming on Facebook.

The survey was provided in English, German and Dutch. The English survey can be found in Appendix 1.

3.2.2 Sampling

Respondents for the survey were found using Facebook. An announcement was posted on the private wall of the researcher and private messages were sent to friends. Additionally, these friends were asked to share the link of the survey. Furthermore, the announcement was placed in open groups of several Universities in the Netherlands and Germany. These groups had the purpose to find participants for research studies or were related to the topic “Psychology”.

There was no age or culture restriction. The only given restriction was that the respondent had to have a Facebook account. To accomplish this, the survey was only spread by using Facebook.

3.3 Content analysis

Looking at open pages of a Dutch and a German controversial political party, material for the content analysis was obtained.

The used German controversial party was the “Nationaldemokratische Partei Deutschlands” (NPD), a far-right nationalist political party in Germany. The party can be seen as controversial because of its ideology and because of their ideas on the future of Germany and foreigners in Germany. The “Partij voor de Vrijheid” (PVV) was chosen as an example of

a controversial political party in the Netherlands. This party is a right-wing party and can be seen controversial for the same reasons as the German NPD.

These political parties were chosen because discussions are likely to take place in consequence of opposing opinions on particular topics between supporters and opponents of the parties. Consequently it is more likely that flaming will occur on these pages. Another reason for choosing these two parties is the similarity: both parties are controversial for the same motives in their country.

3.3.1 Material

One post from an open group/site on Facebook of the earlier mentioned political parties was used for the content analysis. For the NPD the “NPD - Die soziale Heimatpartei” site was used. It is stated on the page, that it is the official Facebook-page of the party (NPD, 2012). For the PVV no official site was found. However some open groups which aim to support the political party were found (PVV, 2012). The group with the most members at that time was chosen.

The site of the NPD (52 posts of the owner of the site within one week) was much more active than the group of the PVV (12 posts within the same week, which were made by different members of the group). Also more members of the NPD commented on posts of their site.

For the content analysis one post was chosen which had at least 50 comments. This post was followed until no more posts were made for two days. It is assumed that the discussion is over at that moment. The posts were all made in the same month (May 2012).

4. Results

First the results of the questionnaire will be presented. After that the results of the content analysis will be shown.

4.1 Questionnaire

4.1.1 Participants

The questionnaire was filled in by 224 participants. Seven surveys had to be removed because participants indicated that they still did not know what flaming is after filling in the questionnaire (this was either done at the comment field after the first statements about flaming or at the end of the questionnaire). Moreover not all questionnaires were filled in completely (126 respondents filled in the questionnaire completely). However, the two groups

(completely filled in and all questionnaires) did not differ significantly. For that reason all questionnaires were used.

The average age was 25.30 year (SD: 5.73 years; N=213). Of all participants, 141 participants were female and 76 participants were male. On average the participants had a Facebook account for 3.00 years (SD: 1.33 years; N=198). Participants lived in different countries, 114 lived in the Netherlands, 77 lived in Germany and 25 participants lived in another country, for example Switzerland or the United States of America.

4.1.2 General Facebook behavior

As shown in Figure 1 most respondents used their Facebook account daily (44.6%) or every few hours a day (44.1%). The question was answered by 202 respondents.

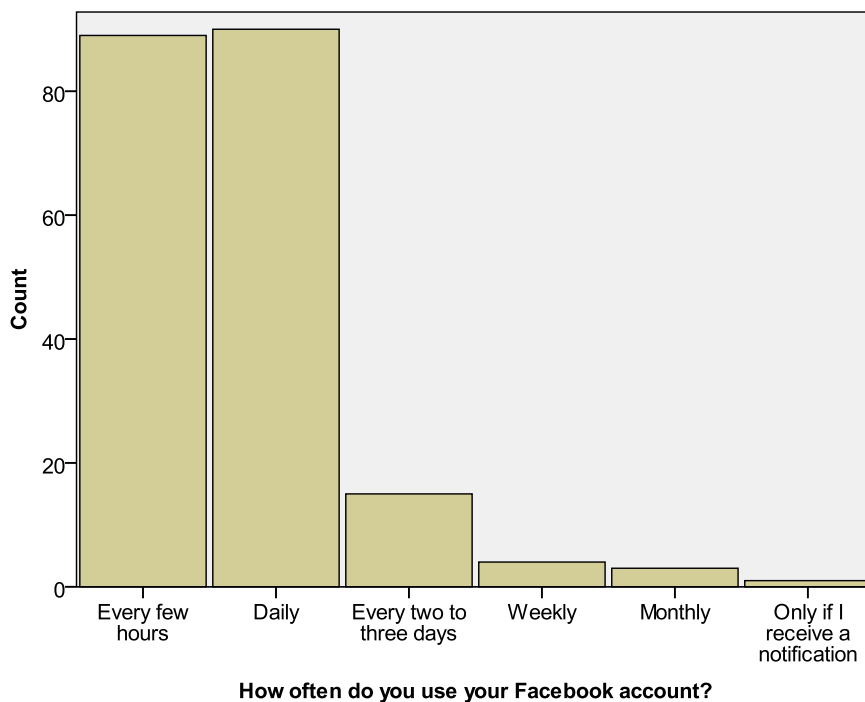


Figure 1: Count on how often respondents used their Facebook account

Furthermore information about posting behavior was obtained (answered by 200 respondents). 90.0% indicated that they only post their status if something important happened in their life, 2.5% said to post their status every few hours and 7.5% declared that they post their status every day.

Respondents were also asked if they comment on status posts of friends. The question was answered by 202 respondents. 16.3% indicated to often comment on status posts of

friends, 55.9% do so sometimes, 25.3% seldom and 2.5% said that they never comment on status posts of friends.

Furthermore respondents were asked if they take part in discussions on walls of friends and in other discussions, like political discussions. The first question (discussion on walls of friends) was answered by 201 respondents and 63.2% said to do so. The second question (other discussions) had 202 respondents and more than 90% indicated to not take part in other discussions. Respondents had to clarify in what kind of discussions they participate if they do so. They clarified for example to take part in discussions about politics, current events, religious discussions and sports.

Additionally respondents were asked to give their opinion on three statements using the Five-point Likert scale mentioned before. In Table 1 the results are shown. Cronbach's α was calculated for this subscale. The calculation showed a very weak internal consistency, $\alpha=0.15$.

Table 1: Mean and standard deviation from statements about general Facebook behavior

Item	Statement	N	Mean ^o	SD
S01	I only use Facebook to communicate with friends.	161	4.07	0.99
S02	I use Facebook to discuss topics which interest me with my friends.	158	2.78	1.28
S03	I use Facebook to discuss topics which interest me with strangers.	161	1.55	0.94

^o1: disagree; 5: agree

The results show that the major part of respondents used their Facebook account daily. However fewer respondents post their status daily or every few hours. Even though the major part of respondents did not take part in discussions on Facebook, 63.2% did indicate that they take part in discussion on walls of friends. The results on the subscale show that respondents more often used Facebook to only communicate with their friends. They did not use Facebook to discuss topics they are interested in with friends or strangers.

4.1.3 *Flaming on Facebook*

Before the respondents had to rate statements about flaming on Facebook they were asked if they knew what flaming is. If they did, they had to write down their definition. This question was answered by 198 respondents, 80.3% did not know what flaming was. Of those who thought to know what flaming was and gave a definition, 8.5% (17 respondents) gave a definition which matches the used definition of this study. The rest gave a wrong definition or

did not mention that flaming is a phenomenon on the internet and thus in CMC. Also three respondents which said to know what flaming is gave no definition.

In the next part respondents had to rate 18 statements on the same Five-point Likert scale mentioned before. In Table 2 the results are shown. Within in these 18 statements, three different subscales were identified. The first subscale consisted of S04, S05, S06 and S07 and dealt with observing flaming on Facebook. The internal validity for the first subscale was $\alpha=0.60$. The second subscale attended the attitude of the respondents towards flaming on Facebook and included S08, S09, S15, S16, S17 and S18. The internal validity for this subscale was somewhat better than for the first subscale, $\alpha=0.62$. The last subscale contained S10, S11, S12, S13 and S14. This subscale dealt with the own flaming behavior on Facebook. The third subscale had a high internal validity with $\alpha=0.94$. The subscales were not determined statistically.

Table 2: Mean and standard deviation for the different statements about flaming on Facebook

Item	Statement	N	Mean ^o	SD
S04	I often see flaming on posts on walls of my friends.	158	1.81	0.92
S05	I often see flaming on discussion topics.	159	2.33	1.18
S06	I never see my friend's flame.*	160	3.52	1.30
S07	I often see strangers flame.	156	2.64	1.30
S08	I do not think flaming is a problem on Facebook.*	158	2.88	1.10
S09	I think that other Facebook users think that flaming is a problem on Facebook.	158	3.14	0.86
S10	When I am bored I enjoy it to get into a flame war.	160	1.61	0.94
S11	I have flamed on the walls of friends when I do not agree with their statements.	160	1.52	0.95
S12	I have flamed in groups when I do not agree with the opinions of others.	160	1.49	0.87
S13	I would flame against a friend of mine if I do not agree with their opinions.	157	1.55	0.92
S14	I only flame against strangers if I do not agree with their opinions.	160	1.65	0.95
S15	When I read flames on Facebook I think it is funny.	160	2.21	1.14
S16	When I read flames on Facebook I think it is annoying.*	159	3.40	1.12
S17	Flaming is just another way to express my honest opinion.	159	1.78	0.99
S18	Other users can express their opinion through flaming.	158	2.37	1.16

* Reverse item

^o1: disagree; 5: agree

Table 2 shows that respondents did not often see flaming on walls of friends. 47.5% disagreed with it, 29.1% slightly disagreed, 19.0% said not to be sure/neutral and only 4.4% (slightly) agreed with the statement. Flaming on discussions topic was also not often seen. 19.5% (slightly) agreed with this statement, 24.5% were not sure/neutral and 55.9% (slightly)

disagreed. Respondents indicated to not see their friends or strangers flame. They agreed more with S06 than disagreed. On S07 more agreement was also shown. For the subscale “seeing flaming” it can be reported that flaming was not often seen, neither on walls of friends nor on discussion topics.

The attitude towards flaming was more negative than positive. Respondents agreed that flaming is a problem on Facebook. They also thought that others see flaming as a problem on Facebook. Furthermore more respondents disagreed with the statement that flames are funny (38.8% disagreed and 17.5% slightly) and more thought that flaming is annoying (16.4% agreed, 32.1% slightly agreed, 35.2% indicated to be neutral/not sure, 7.5% slightly disagreed and 8.8% disagreed). One respondent for example shared the following: “It is annoying to see how the people hides behind other identity and just say whatever they want.”. Respondents did not agree that flaming is a way to express the honest opinion (for themselves and others).

Self-reported flaming behavior was low. Respondents disagreed with all statement stating that they flamed against someone else or enjoy flaming (S10, S11, S12, S13 and S14). The major part of respondents did not enjoy to get into a flame war when bored (66.3% disagreed and 10.0% slightly disagreed). Furthermore, 79.4% indicated that they not flamed on walls of friends when disagreeing with their opinion. 80.6% never flamed in discussion groups against a stranger. The intention to flame against a stranger or friend was also low. Only 2.5% would flame against a friend and 73.1% would not flame against a stranger.

4.1.4 Anonymity on Facebook

Respondents were asked about anonymity on Facebook. In Table 3 the results are shown. The same Five-Point Likert scale mentioned previously was used. Within these eight statements, two distinct subscales were identified theoretically. The first subscale dealt with accountability on Facebook. It included S19, S25 and S26. The internal validity was low, $\alpha=0.21$. The second subscale dealt with anonymity and consisted of S20, S21, S22, S23 and S24. The internal validity was somewhat better for this subscale ($\alpha=0.41$).

Table 3: Mean and standard deviation for the different statements about anonymity

Item	Statement	N	Mean ^o	SD
S19	When I flame on Facebook I think that I can be held accountable for what I said.	154	3.54	1.17
S20	I use my real name on Facebook.	155	4.40	1.20
S21	I use a photo of myself as profile picture.	154	4.48	1.12
S22	I feel anonymous on Facebook.*	155	1.50	0.72
S23	I think it is easier to express my feelings on Facebook.*	155	1.86	1.11
S24	I do not have the feeling that I can be more honest on Facebook than in real life.	155	3.51	1.43
S25	I think that I hurt the feelings of others if they are my target of flaming.	155	3.94	1.06
S26	Other users do not want to hurt the feelings of others if they flame against them.	154	2.46	0.94

* Reverse item

^o1: disagree; 5: agree

Respondents indicated that they do feel accountable for their actions on Facebook. Most of the people agreed that they are accountable for what they say on Facebook (24.7% agreed, 26.6% slightly agreed, 35.7% neutral/not sure, 3.9% slightly disagreed and 9.1% disagreed). Also more users thought that they hurt the feelings of others when they would flame against them (41.3% agreed and 20.6% slightly agreed). On the other hand respondents disagreed more with statement S26. They thought that people who flame want to hurt the feelings of others. However, the major part of the respondents indicated not to be sure (48.1%).

Felt anonymity on Facebook was low. Most of the respondents used their real name on Facebook (74.2%) and a photo of themselves as a profile picture (76.0%). Also the direct statement about feeling anonymous on Facebook (S22) indicated that people do not feel anonymous (60.0% disagreed, 32.3% slightly disagreed, 5.8% said to be neutral/not sure, 1.3% slightly agreed and 0.6% agreed). Table 3 pointed out that respondents disagreed with the statement that they can express their feelings on Facebook. Also respondents agreed more with the statement that they do not have the feeling that it is easier to be honest.

4.1.5 Differences between Germany and the Netherlands

To test if there were significant differences for flaming behavior on Facebook between German and Dutch users, the normal distribution had to be examined first. This was done using the Test of Normality (Kolmogorov-Smirnov (K-S) and Shapiro-Wilk (S-W) test) for all 26 statements. The calculations showed that the data for no statement was normally

distributed. As a result non-parametric tests had to be used to look at the differences between German and Dutch users.

Firstly the difference between the two groups for how long they have an account on Facebook was examined. The calculation showed that the difference was not significant ($Z=-1.77$, $p=0.08$, $M=2.86$, $SD=1.25$). Next it was examined if there were significant differences for the first three statements. The two groups did not differ for the second (“I use Facebook to discuss topics which interest me with my friends”; $Z=-0.50$, $p=0.62$) and third (“I use Facebook to discuss topics which interest me with strangers”; $Z=-1.87$, $p=0.06$) statement. But the groups differed significantly for the first statement (“I only use Facebook to communicate with friends”; $Z=-2.13$, $p=0.03$).

The rest of the 26 statements had to be checked. The results of this analysis can be seen in Table 4. The results show that S09, S16, S19, S20 and S21 were significantly different. The Dutch group significantly disagreed stronger with the statement that others think that flaming is a problem on Facebook (Dutch: $M=3.01$, $SD=0.91$; German: $M=3.35$, $SD=0.71$). The German group disagreed significantly stronger with the statement that they think that reading flames on Facebook is annoying (Dutch: $M=3.56$, $SD=1.12$; German: $M=3.04$, $SD=1.05$). The Dutch group agreed significantly stronger that they could be held accountable for flaming on Facebook (Dutch: $M=3.68$, $SD=1.22$; German: $M=3.22$, $SD=1.12$). Also the difference between groups for the statement about the usage of the real name differed significantly. The Dutch group agreed significantly stronger with this statement (Dutch: $M=4.65$, $SD=0.92$; German: $M=3.76$, $SD=1.58$). Besides this the German group significantly stronger disagreed with the statement “I use a photo of myself as profile picture.” (Dutch: $M=4.67$, $SD=0.95$; German: $M=4.17$, $SD=1.29$).

However, even if significant differences for these five statements have been found, the trend of the answers does not differ so much. It is not the case that one group strongly disagreed and the other group strongly agreed.

Table 4: Z and p values for the statements

Item	Statement	Z	p
S04	I often see flaming on posts on walls of my friends.	-0.36	0.72
S05	I often see flaming on discussion topics.	-1.85	0.06
S06	I never see my friend's flame.*	-0.37	0.71
S07	I often see strangers flame.	-1.06	0.29
S08	I do not think flaming is a problem on Facebook.*	-1.64	0.10
S09	I think that other Facebook users think that flaming is a problem on Facebook.	-2.37	0.02
S10	When I am bored I enjoy it to get into a flame war.	-1.40	0.16
S11	I have flamed on the walls of friends when I do not agree with their statements.	-0.97	0.33
S12	I have flamed in groups when I do not agree with the opinions of others.	-0.72	0.47
S13	I would flame against a friend of mine if I do not agree with their opinions.	-0.15	0.89
S14	I only flame against strangers if I do not agree with their opinions.	-0.05	0.96
S15	When I read flames on Facebook I think it is funny.	-0.87	0.38
S16	When I read flames on Facebook I think it is annoying.*	-2.92	0.004
S17	Flaming is just another way to express my honest opinion.	-0.40	0.69
S18	Other users can express their opinion through flaming.	-0.53	0.60
S19	When I flame on Facebook I think that I can be held accountable for what I said.	-2.30	0.02
S20	I use my real name on Facebook.	-4.16	0.00
S21	I use a photo of myself as profile picture.	-3.26	0.001
S22	I feel anonymous on Facebook.*	-1.75	0.08
S23	I think it is easier to express my feelings on Facebook.*	-1.67	0.10
S24	I do not have the feeling that I can be more honest on Facebook than in real life.	-0.30	0.76
S25	I think that I hurt the feelings of others if they are my target of flaming.	-0.46	0.66
S26	Other users do not want to hurt the feelings of others if they flame against them.	-0.26	0.79

* Reverse item

4.2 Content analysis

Firstly the comments of the analyzed posts were categorized into five categories of the manner of the posts (from here on further referred to as manner-category). The first category was a positive/supportive comment on the original post. The second was a negative/not supportive comment on the original post. The third category was a neutral or partial supportive comment on the original post. The fourth category was a reaction on the comment(s) of (an)other poster(s). Comments, belonging to the last category, are comments which cannot be assigned without a doubt. This would be the result of the removal of an earlier post for example. These categories were used to figure out if a discussion took place and how many times posters reacted on another post. The first three categories are the same as in the article of Kushin and Kitchener (2009). The fourth and fifth category was added.

Secondly, the comments were analyzed on flaming behavior of the posters. Therefore the different comments were analyzed and the style of the comments had to be identified

(from here on these categories are further referred to as style-categories). Kushin and Kitchener (2009) used four different categories: Informational, Productive Argument, Unproductive Argument and Miscellaneous. These categories were used to discover the characteristics of the discussions on Facebook (Kushin & Kitchener, 2009). The same categories were used in Kushin and Kitchener (2009) but some of the definitions were adjusted to meet the requirements of the study. Posts which belonged to the category “Informational” were posts that are strictly informational (Kushin & Kitchener, 2009). This can be for example an external link. The definition of the “Productive Arguments” group has been adjusted to meet the criteria of this study. “Productive Arguments” were posts of users which expressed their opinion, but in a civil manner. This means that no flaming was observed. In posts that belonged to the third category “Unproductive Arguments” flaming (personal attacks, insults and attack of ideas of other users) can be observed. Within this group one difference can be made. Posters used harsh language, insults or judgments against (a1) another user or (a2) group of people. Examples will be given specific for the different posts. Also the definition of these posts was adjusted to meet the criteria of this study. The fourth category is “Miscellaneous”. Posts belonging to this category cannot be matched in an earlier mentioned group. This was for example because they were either off topic or it was unclear why these posts were made (Kushin & Kitchener, 2009).

According to the mentioned criteria’s the comments will be coded. The coding will be done by two raters. An interrater reliability analysis using Kappa statistics will be performed to determine consistency among raters.

4.2.1 Post of NPD

The first post analyzed is on the NPD site on the topic of foreigners that did beat up two German women. It also included a statement that foreigners should be deported (NPD, 2012). In total 135 comments were made on this post. Some of the comments were deleted by the owner of the site, meaning that it is possible that more comments were made. In total 69 individual posters were identified.

In Table 5 the percentages of the different categories of the manner-categories on the original post are shown.

Table 5: Percentage of manner-categories on post 1

Manner-category	#	Percentage Rater A	Percentage Rater B
Positive/supportive reaction on the original post	1	25.9%	37.0%
Negative reaction on the original post	2	8.2%	9.6%
Neutral reaction on the original post	3	2.2%	1.5%
Reaction on the post of (an)other poster(s)	4	54.1%	49.6%
Not assigned (probably because earlier comment was deleted)	5	9.6%	2.2%

This shows that some kind of discussion took place. Whereby the major part of comments were reactions on other people’s comments. The interrater reliability was found to be Kappa=0.68. According to Landis and Koch (1977) this is a substantial agreement between raters.

Accordingly the comments were divided into the different style-categories. In Table 6 the percentages of the different comments are presented.

Table 6: Percentage of style-categories on post 1

Style-category	#	Percentage Rater A	Percentage Rater B
Informational	1	4.4%	5.2%
Productive Arguments	2	54.1%	50.4%
Unproductive Arguments	3	32.6%	41.5%
	a1	14.1%	26.7%
	a2	18.5%	14.8%
Miscellaneous	4	16.3%	2.9%

Table 6 illustrates that the major part of comments can be divided into the group of “Productive Arguments”. However, some comments have been identified to belong to the group “Unproductive Arguments”. Not only individual users have been insulted but also groups of people. Examples for such comments are: “Mensch, wer hat den hier schon wieder die Käfigtür aufgelassen und die Affen befreit? Alles nur Wasserköpfe hier :)“ or “Diese ausländer sollte man alle vergasen und dann abschieben :F“. These comments were coded as being against a group of people. An example for flaming against an individual is: “@P [name deleted]-EU-Bürger betrifft es nicht! Eine Abschiebung ist bei diesen Personen nur bei Gefährdung, der öffentlichen Sicherheit möglich-Angehörige betrifft es nicht! Daher braucht Du nicht aufjaulen.....” (NPD, 2012). Flaming in the post of the NPD often can be seen in a

light form, with just attacking the ideas of another person, rather than using harsh insults. The agreement between raters was fairly, with Kappa=0.26.

4.2.2 Post of PVV

Subsequently a post of the PVV group was examined. This post was about a statement of Geert Wilders that the party will become the biggest party during the next election in the Netherlands (PVV, 2012). In total 58 comments were made and 10 different posters were identified. Some comments were made twice.

In the following table (Table 7) the percentage of the manner-categories are shown.

Table 7: Percentage of manner-categories on post 2

Manner-category	#	Percentage Rater A	Percentage Rater B
Positive/supportive reaction on the original post	1	10.3%	13.8%
Negative reaction on the original post	2	3.4%	1.7%
Neutral reaction on the original post	3	1.7%	0%
Reaction on the post of (an)other poster(s)	4	84.5%	84.5%
Not assigned (probably because earlier comment was deleted)	5	0%	0%

As shown in the table only little discussion took place. The biggest parts of the comments were reactions on the comments of other users. The two raters had almost perfect agreement (Kappa=0.87).

In Table 8 the percentage of the style-categories for the post in the PVV group are presented.

Table 8: Percentage of style-categories on post 2

Style-category	#	Percentage Rater A	Percentage Rater B
Informational	1	0%	0%
Productive Arguments	2	48.3%	15.5%
Unproductive Arguments	3	17.2%	25.9%
	a1	15.5%	25.9%
	a2	1.7%	0%
Miscellaneous	4	34.5%	58.6%

Many comments have been divided into the group “Miscellaneous”, as shown in Table 8. However, also some “Unproductive Arguments” against an individual were observed. One example is: “Bewijs het J[*name deleted*] dat ie geen viezerik bent en kap dan nu met die

spelletjes dus verander je houding. En dit is verder het laatste wat ik erover zeg, voorlopig even genoeg voor jou om over na te denken J[*name deleted*]!” (PVV, 2012). Most of the comments were made against one particular user and it was clear that the other users had earlier experiences with this individual. The interrater reliability was found to be fairly (Kappa=0.22).

5. Discussion

5.1 Research questions

In this explorative study, flaming on Facebook has been examined. This was done by using a questionnaire among Facebook users and a content analysis of different posts on Facebook.

The first research question was about whether people engage in flaming on Facebook or not. The results of the content analysis proves that flaming occurs. But the questionnaire shows low self-reported flaming.

Flaming in the content analysis occurred in a light form. Users more often attacked ideas of others than using harsh language. Although somewhat harsh language is used, this has been interpreted as a light form of flaming rather than a strong form. Flaming against individuals as well as against groups occurred.

As soon as a user is engaging in a discussion in an open group or site, everyone can see at least the name and profile picture. This in turn can account for a feeling of being accountable for actions and not being anonym (Kushin & Kitchener, 2009). This could be one explanation for why flaming only occurs in a light form. If people do not feel anonym and feel accountable for their actions, flaming is not likely to occur or probably, as seen in this study, flaming occurs only in a light form. Flamers are not able to deny their responsibility (Lapidot-Lefler & Barak, 2012; Suler, 2004). Furthermore miscommunication could have taken place. The comments on the post are coded and interpreted by a third party solely based on the content. As O’Sullivan and Flanagin (2003) point out identifying flames solely based on content could lead to a problem. The risk exists that comments are seen as offensive by a third party when indeed it is not meant to be offensive (O’Sullivan & Flanagin, 2003; Postmes et al., 2000). This means that it is possible that some of the comments though coded as flames are actually not meant as flaming. Of course it is also possible that users did not intend to flame but that others interpreted it as flaming and responded themselves with flaming. Also on Facebook social cues are not available (Alonzo & Aiken, 2004; Moor et al., 2010).

Because of missing social cues faulty interpretations could take place and therefore lead to flaming.

Respondents of the questionnaire showed low self-reported flaming. The results of seeing others flame were somewhat higher. The results also indicate that the major part of respondents did not take part in discussions on Facebook.

It is assumed that flaming occurs most often in situations in CMC where opposing opinions are met. This most likely happens in discussions. If people do not engage in discussions on Facebook it is possible that they do not get the chance to engage in flaming or seeing it. This could be another reason for low self-reported flaming.

The second part of research question 1 deals with the question where flaming occurs on Facebook. The results of the content analysis indicated that flaming occurs on open sites and groups. This is also supported by the results of the questionnaire. Respondents were given the possibility to clarify where they have seen flaming on Facebook when they have seen it. The major part discovered flaming in discussion groups (political groups, sites of political parties, gay rights, sites of famous people). Some also said to have seen flaming on walls of friends or photos (of friends). One respondent from Germany shared to have been a victim of flaming on the own Facebook site. However, the major part of respondents indicated that they have not seen flaming on Facebook (walls of friends or discussion sites). As also should be clear if people flame on walls of friends they are not at all anonym and can be held accountable for their actions. This could be one explanation for why flaming on walls of friends is not seen. Furthermore, as indicated by the respondents the major part does not take part in discussions on Facebook. If they are not engaging in discussions, respondents are not able to see flaming on discussions sites.

Furthermore it was investigated what respondents of the questionnaire think about flaming on Facebook. As mentioned, respondents think negatively about flaming on Facebook. Flaming often is seen as anti-normative behavior or a negative side of CMC (Lapidot-Lefler & Barak, 2012; Moor et al., 2010; O'Sullivan & Flanagan, 2003). Because flaming is more often seen as being negative, it is possible that people are not willing to admit that they flame. This could be another explanation for why low self-reported flaming behavior was found.

The second research question attends the matter of anonymity and accountability on Facebook. As presented in the results, felt anonymity was low and accountability high. Anonymity is one of the contributing factors to the online disinhibition factor (Lapidot-Lefler

& Barak, 2012; Suler, 2004) and to deindividuation (Coleman et al., 1999; Moor et al., 2010; Postmes & Spears, 1998). These two theories are often used to explain flaming in CMC. Even though it is not clear which one accounts better for the occurrence of flaming, it is clear that anonymity has an effect on flaming. It has been used by many researchers to explain flaming (Lapidot-Lefler & Barak, 2012). Online disinhibition effect anonymity leads to a feeling of being unaccountable. This in turn makes it possible for flammers to deny responsibility and therefore flame (Lapidot-Lefler & Barak, 2012; Suler, 2004). When deindividuation is occurring, a feeling of unaccountability arises, which then results in flaming. Deindividuation is influenced by anonymity (Coleman et al., 1999; Moor et al., 2010; Postmes & Spears, 1998). Anonymity is for example accomplished by not using the real name (Lapidot-Lefler & Barak, 2012). The major part on the respondents indicated to use their real name on Facebook. This means anonymity is probably not accomplished. Another implication for not felt anonymity is that the major part of respondents uses a photo of themselves as profile photo. As Kushin and Kitchener (2009) point out, the fact that everyone can see at least the used name and profile photo, could produce a feeling of accountability. Accountability was also measured in this study. Respondents implied that they feel accountable for their actions. As long as some kind of feeling accountable and not anonym is present flaming is not likely to occur. The low anonymity and high accountability is another possible explanation for low self-reported flaming and for why flaming is only observed in a light form.

The third research question handles the question if significant differences exist between German and Dutch Facebook users. This question has no straight answer. For most statements no significant difference was found. However, as seen for six statements the two groups did differ significantly. Although, looking at the mean of the different statements, the differences are not enormous and the trend of the answers does not change. Furthermore the Dutch group was almost twice as big as the German group (114 Dutch and 77 German). The different group size could be a reason for why no big difference was found for the means and why only for six statements significant differed. Another possible reason for why not many significant differences were found might be that German and Dutch users are similar in their Facebook behavior and thus there are just no significant differences.

5.2 General Discussions

The internal validity of most of the different subscales of the questionnaire was low and not acceptable. The internal validity of the subscale “own flaming behavior” was the only one which had a high and good internal validity. Because of the low internal validity it is not likely that the suggested subscales measured the wished construct. This could possibly be explained by the fact that subscales have been identified theoretically. The reason for doing so was that the assumptions for a factor analysis were not met (correlation between items). Another possible explanation is that no standardized questionnaire for flaming (on Facebook) or anonymity in CMC was found in literature. However, because this was an explorative study it is possible that a reliable questionnaire can be made by refining the used questionnaire.

Looking at the content analysis, two things have to be mentioned. Firstly, the agreement between the two raters was not even strong for the different categories. For the manner-categories the raters showed a strong agreement. However, for the style-categories, which were actually measuring flaming, the agreement was only fairly. As mentioned before flaming is always some kind of interpretation. This could be one possible explanation for the low agreement. What one rater interpreted as being flaming, the other rater did not. Another possible explanation is that maybe the two raters did not understand the same for every category which resulted in low agreement. Secondly, even though the chosen parties are similar due to their controversial character the two Facebook groups are not as similar. The site of NPD was much more active and bigger than the group of the PVV. Also on the PVV post most of the comments made were against one individual. It was more on the subject of that individual than concerning the original post. That was not the case for the NPD post.

6. Conclusion

In general it can be concluded that flaming occurs on Facebook even though self-reported flaming behavior was low. One explanation for the low self-reported flaming behavior could be that the majority of the respondents also indicated that they do not take part in discussions where flaming is most likely to occur. Flaming however occurs not only in discussion groups but also at photos which have been posted on Facebook and walls on Facebook. Anonymity on Facebook can be assumed to be low and accountability to be high. If the anonymity is low and accountability is high it could counteract flaming on Facebook. Finally not for all statements significant differences for the German and Dutch group can be

found which might be the result of similarity of the two countries. It could also be the result of two groups of different sizes.

7. Recommendations

Although this study indicates that flaming is occurring on Facebook, it also showed that more research has to be done on flaming on Facebook. In this study self-reported flaming behavior was low. One possible explanation is that the “wrong” target group was used. To research flaming on Facebook in the future it could be beneficial to use respondents which are taking part in discussions. Furthermore, more research has to be done on the contributing factors to flaming on Facebook and in general. Not only anonymity and accountability should be researched but also other contributing factors, like invisibility. To improve the comparison between two groups, it is better to use group sizes that are more or less equal.

Research on flaming could also benefit from standardized questionnaires about flaming and contributing factors. Looking at the used questionnaire only one subscale (“own flaming behavior”) had a high internal validity. A high internal validity is desirable in order to know that the subscale is measuring the wished construct.

8. Acknowledgements

In the first place, I want to thank Isabel Sippel for being my second rater. You helped me a lot with my thesis.

Furthermore I want to thank my teachers, Somaya ben Allouch and Ard Heuvelman. You helped me a lot writing my thesis with your knowledge, advice and experience.

9. References

- Alonzo, M., & Aiken, M. (2004). Flaming in electronic communication. *Decision Support Systems*, 36(3), 205-213.
- Castellá, V. O., Abad, A. M. Z., Alonso, F. P., & Silla, J. M. P. (2000). The influence of familiarity among group members, group atmosphere and assertiveness on uninhibited behavior through three different communication media. *Computers in Human Behavior*, 16(2), 141-159.
- Coleman, L. H., Paternite, C. E., & Sherman, R. C. (1999). A reexamination of deindividuation in synchronous computer-mediated communication. *Computers in Human Behavior*, 15(1), 51-65.
- Diener, E. (1979). Deindividuation, self-awareness, and disinhibition. *Journal of Personality and Social Psychology*, 37(7), 1160-1171.
- Facebook. (2012). Key Facts. Retrieved 25 May, 2012, from <http://newsroom.fb.com/content/default.aspx?NewsAreaId=22>
- Hsu, Y.-L. (2012). Facebook as international eMarketing strategy of Taiwan hotels. *International Journal of Hospitality Management*, 31(3), 972-980.

- Johnson, N. A., Cooper, R. B., & Chin, W. W. (2009). Anger and flaming in computer-mediated negotiation among strangers. *Decision Support Systems*, 46(3), 660-672.
- Kushin, M. J., & Kitchener, K. (2009). Getting political on social network sites: Exploring online political discourse on facebook. *First Monday*, 14(11).
- Landis, J. R., & Koch, G. G. (1977). The Measurement of Observer Agreement for Categorical Data. *Biometrics*, 33(1), 159-174.
- Lapidot-Lefler, N., & Barak, A. (2012). Effects of anonymity, invisibility, and lack of eye-contact on toxic online disinhibition. [Article]. *Computers in Human Behavior*, 28(2), 434-443.
- Lee, H. (2005). Behavioral strategies for dealing with flaming in an online forum. *Sociological Quarterly*, 46(2), 385-403.
- McClard, A., & Anderson, K. (2008). Focus on Facebook: Who Are We Anyway? *Anthropology News*, 49(3), 10-12.
- Moor, P. J., Heuvelman, A., & Verleur, R. (2010). Flaming on YouTube. *Computers in Human Behavior*, 26(6), 1536-1546.
- NPD. (2012). NPD - Die soziale Heimatpartei. Retrieved 29 May, 2012, from <https://www.facebook.com/npd>
- O'Sullivan, P. B., & Flanagin, A. J. (2003). Reconceptualizing 'flaming' and other problematic messages. [Article; Proceedings Paper]. *New Media & Society*, 5(1), 69-94.
- Pazienza, M. T., Lungu, I., & Tudorache, A. (2011). Flames recognition for opinion mining. [Article]. *Economic Computation and Economic Cybernetics Studies and Research*, 45(3), 43-58.
- Phillips, S. (2007, 25 July). A brief History of Facebook. *The Gurdian*. Retrieved from <http://www.guardian.co.uk/technology/2007/jul/25/media.newmedia>
- Postmes, T., & Spears, R. (1998). Deindividuation and antinormative behavior: A meta-analysis. [Article; Proceedings Paper]. *Psychological Bulletin*, 123(3), 238-259.
- Postmes, T., Spears, R., & Lea, M. (2000). The formation of group norms in computer-mediated communication. *Human Communication Research*, 26(3), 341-371.
- PVV. (2012). PVV. Retrieved 29 May, 2012, from <https://www.facebook.com/groups/358541410859723/>
- Shin, D.-H. (2010). The effects of trust, security and privacy in social networking: A security-based approach to understand the pattern of adoption. *Interact. Comput.*, 22(5), 428-438.
- Steele, G. L. (1983). *The Hacker's Dictionary*. New York: Harper & Row.
- Suler, J. (2004). The Online Disinhibition Effect. *CyberPsychology & Behavior*, 7(3), 321-326.
- Turnage, A. K. (2007). Email flaming behaviors and organizational conflict. *Journal of Computer-Mediated Communication*, 13(1), 43-59.
- Valkenburg, P., & Peter, J. (2009). Social Consequences of the Internet for Adolescents. *Current Directions in Psychological Science*, 18(1), 1-5.

10. Appendix

10.1 Questionnaire

Thank you for your willingness to fill in this questionnaire. This questionnaire is a part of my master assignment at the University of Twente. The results will be analyzed anonymously and will only be used for this research.

The questionnaire will take about 15 minutes.

General information

1. *What is your gender?*

Male	Female
------	--------

2. *What is your age?*

--

3. *Which country do you live in?*

The Netherlands	Germany	Other:
-----------------	---------	--------

Facebook behavior

4. *How many years do you have a Facebook account? If you are not sure how many years, just give an estimation.*

--

5. *How often do you use your Facebook account?*

Every few hours	daily	every two to three days	weekly	monthly	only if I receive a notification
-----------------	-------	-------------------------	--------	---------	----------------------------------

6. *How often do you post your status on Facebook?*

Every few hours	once a day	only if something important happened in my life
-----------------	------------	---

7. *How often do you comment on a status of a friend?*

Often	Sometimes	Seldom	Never
-------	-----------	--------	-------

8. *Do you take part in for example political discussions on Facebook?*

Yes	No
-----	----

9. *If you answered the last questions with yes what kind of discussions?*

--

10. *Do you take part in discussions on the wall of friends or on your own wall?*

Yes	No
-----	----

11. *Do you know what the term flaming means? If you know it, describe it in a few words.*

Yes,	No
------	----

Flaming behavior of oneself and others

Flaming is the usage of hostile posts, like swearing, name-calling, insulting or otherwise offensive language, against other users or his or her ideas in online communication.

Statements on which people have to specify to which degree they agree on a scale 1 to 5 (1: disagree, 2: slightly disagree, 3: neutral/not sure, 4: slightly agree, 5: agree)

12. *I only use Facebook to communicate with friends.*

13. *I use Facebook to discuss topics which interest me with my friends.*

14. *I use Facebook to discuss topics which interest me with strangers.*

15. *I often see flaming on posts on walls of my friends.*

16. *I often see flaming on discussion topics.*

17. *I never see my friends flame.*

18. *I often see strangers flame.*

19. *I do not think flaming is a problem on Facebook.*

20. *I think that other Facebook users think that flaming is a problem on Facebook.*

21. *When I am bored I enjoy it to get into a flame war. (Flame war = two or more people who are flaming against each other)*

22. *I have flamed on the walls of friends when I do not agree with their statements.*

23. *I have flamed in groups when I do not agree with the opinions of others.*
24. *I would flame against a friend of mine if I do not agree with their opinions.*
25. *I only flame against strangers if I do not agree with their opinions.*
26. *When I read flames on Facebook I think it is funny.*
27. *When I read flames on Facebook I think it is annoying.*
28. *Flaming is just another way to express my honest opinion.*
29. *Other users can express their opinion through flaming.*
30. *If you see flaming on Facebook, where do you see it?*

Anonymity on Facebook

Statements on which people have to specify to which degree they agree on a scale 1 to 5 (1: disagree, 2: slightly disagree, 3: neutral/not sure, 4: slightly agree, 5: agree)

31. *When I flame on Facebook I think that I can be held accountable for what I said.*
32. *I use my real name on Facebook.*
33. *I use a photo of myself as profile picture.*
34. *I feel anonymous on Facebook.*
35. *I think it is easier to express my feelings on Facebook than in real life.*
36. *I do not have the feeling that I can be more honest on Facebook than in real life.*
37. *I think that I hurt the feelings of others if they are my target of flaming.*
38. *Other users do not want to hurt the feelings of others if they flame against them.*

Thank you for participating in my questionnaire for my research for my master assignment at the University of Twente.

If you want to share anything else about flaming on Facebook, please feel free to do this here:

If you want to be informed about the goals and results of this research, please enter your e-mail- address here:

Your e- mail- address will not be linked to your questionnaire and it will not be given to any third party.