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## **Need Fulfillment and Experiences on Social Media** A case on Facebook and WhatsApp

MASTER DISSERTATION

**José Pedro Sousa Teixeira**

MASTER IN INFORMATICS ENGINEERING



UNIVERSIDADE da MADEIRA

*A Nossa Universidade*

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# ABSTRACT

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With an increasing inflow and outflow of users from social media, understanding the factors the drive their adoption becomes even more pressing. This work reports on a study with 494 users of Facebook and WhatsApp.

Different from traditional uses & gratifications studies that probe into typical uses of social media, we sampled users' single recent, outstanding (either satisfying or unsatisfying) experiences, based on a contemporary theoretical and methodological framework of 10 universal human needs.

Using quantitative and qualitative analyses, we found WhatsApp to unlock new opportunities for intimate communications, Facebook to be characterized by primarily non-social uses, and both media to be powerful life logging tools.

Unsatisfying experiences were primarily rooted in the tools' breach of offline social norms, as well in content fatigue and exposure to undesirable content in the case of Facebook. We discuss the implications of the findings for the design of social media.

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# KEYWORDS

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Human needs;

User Experience;

Facebook;

WhatsApp;

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# RESUMO

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Com o recente aumento do fluxo de utilizadores entre as diversas aplicações sociais, é imperativo compreender os factores que os motivam a aderir ou desistir destas ferramentas.

Este artigo descreve um estudo efectuado com 494 utilizadores de duas comunidades sociais estabelecidas: Facebook e WhatsApp. Ao contrário dos estudos de investigação tradicionais que focam-se nos usos típicos em aplicações sociais aplicando a teoria dos Usos e Gratificações, este relatório baseia-se num *framework* moderno das 10 necessidades humanas universais para reunir um conjunto de experiências únicas (satisfatórias ou não satisfatórias) reportadas pelos utilizadores destas duas comunidades.

Por intermédio de uma análise quantitativa e qualitativa o estudo revela oportunidades únicas no WhatsApp para potenciar comunicações de natureza íntima, enquanto que o Facebook é caracterizado essencialmente por uma utilização não social. Por sua vez, ambas as redes mostraram ser poderosas ferramentas de registo de momentos vividos.

Grande parte das experiências não satisfatórias descritas nestas duas ferramentas surgem associadas com a infração das normas sociais do mundo não virtual, bem como ao cansaço e exposição a conteúdos não desejados no caso específico do Facebook. Discutimos as implicações das nossas descobertas para o design de aplicações sociais.

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# PALAVRAS-CHAVE

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Necessidades básicas humanas;

Experiência de Utilizador;

Facebook;

WhatsApp;

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*“Life after productive panic always feels sweeter”* - Evangelos Karapanos

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# ACRONYMS

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**CMC** – Computer-mediated Communications  
**FB** – Facebook  
**FBI** – Facebook Intensity Scale  
**IM** – Instant Messaging  
**MIM** – Mobile Instant Messaging  
**MTurk** – Mechanical Turk  
**NA** – Negative Affect  
**PA** – Positive Affect  
**PANAS** – Positive and Negative Affect Schedule  
**SE** – Satisfying Experiences  
**SNS** – Social Networking Sites  
**U&G** – Uses and Gratifications Theory  
**UE** – Unsatisfying Experiences  
**WA** – WhatsApp

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# I. INTRODUCTION

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The idea of Social Media is not groundbreaking, the concept dates back to about 20 years ago when the first community of writers emerged and following shortly the term blog first appeared. From then on, the growing availability of high-speed internet and new ideological and technological foundations of the Web encouraged a whole other group of applications to emerge that allow the creation and exchange of User Generated Content – the 'social web' (Kamel 2007; Kaplan 2010).

The interactive, dynamic and collaborative nature of these tools have been key factors in their adoption (Maness 2006). On 2014, the sharing platform YouTube had 100 hours of video content uploaded every minute (YouTube Press, 2014) and the image sharing application Instagram provided access to over 60 million new photos every day (Instagram Press, 2014). Moreover, the easiness to create and share content unlocks new opportunities for interaction between people. While people used to go online to seek anonymity (McKenna & Bargh, 2000) they now more often use the Internet to socialize with offline relations or expand their friends circle and two of the main tools that enable these connections are social networking sites and instant messages (Jones, 2009; Lenhart, 2009).

As these social enabling tools diffuse widely in society, researchers have opted to understand the human experiences they mediate, and the factors that drive their widespread use (e.g., Burke, 2010; Ellison, 2007; Hart, 2008; Hu, 2004). This is increasingly important as we witness users' migrating across communities while we lack a clear understanding of the reasons that drive those transitions.

Facebook for example, is ranked as the most successful online community, and the 2<sup>nd</sup> most visited website<sup>1</sup> globally (consulted in January 2014), has recently seen an outflow of users with increasing reports of negative experiences resulting from its use, especially among teenagers (Time Business, 2004; Rainie, 2008). At the same time new social media, such as WhatsApp, have seen a dramatic growth, with reports suggesting an increase of up to 1 million users per day, reaching a number of 600 million users in 2014 with a daily engagement higher than the industry standard (Forbes, 2014).

Facebook and WhatsApp do not necessarily compete, and in fact, researchers have argued that users adopt a wide range of tools on a daily basis (Quan-Haase, 2010). Yet, they are likely to satisfy different needs and provide distinct experiences to their users. Thus, an analysis of users' experiences with these two social media and the needs they fulfill is likely to shed light into the inflow and outflow of users from the two social media.

<sup>1</sup> [www.alexa.com](http://www.alexa.com) web information service (traffic ratings)

Prior work has found Facebook to satisfy a wide range of needs, from keeping up with old and making new friends (Joinson, 2008; Raacke, 2008), to acquiring information about events or individuals through surveillance and social browsing (Joinson, 2008; Urista, 2009) and leveraging individuals' self-esteem through the portrayal of their ideal image (Quan-Haase, 2010). Recent work on WhatsApp and other instant messaging applications has found such services to support a more intimate and private way for members to communicate with friends, better fulfilling the fundamental need for relatedness.

The majority of this research has taken a 'uses and gratifications' approach (U&G, see Joinson (2008)) where individuals are surveyed about their typical uses and reflect on the needs these uses address. Qualitative content analyses then identify the most salient needs users seek to satisfy through their use of the particular media.

In this Thesis we take an alternative approach to the study of the needs that social media satisfy, relying on a theoretical framework and methodological approach proposed by Sheldon et al. (2001). This makes our study different from U&G studies in two ways.

First, rather than deducing needs from participants' qualitative accounts, we employ a validated framework of 10 universal human needs, such as the need for relatedness, competence and popularity (Sheldon, 2001). This enables the quantitative study of need fulfillment in users' experiences with social media and the impact this has on individuals' behaviors – in terms of their intensity of use.

Second, rather than focusing on typical use, Sheldon's et al. (2001) approach asks from participants to focus on a single recent memorable (positive or negative) experience. This has a number of implications. First, it minimizes recall and selection biases as, when people recall recent concrete episodes, they are more likely to tap into episodic memories and introspect on the "felt experience" (McCarthy, 2004), rather than report on what is considered to be a typical use of social media (see Schwarz (2009) for a review of affective memory). Second, by focusing on the memorable rather than the typical, it samples a distinct aspect of our experience with social media. While much of our attitude towards social media may be shaped by our day-to-day use, outstanding, memorable experiences may as well be shaping our attitudes in ways we haven't yet understood. Focusing on such outstanding experiences may provide a new perspective to the inquiry of users' experiences with and need fulfillment through social media.

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## II. LITERATURE REVIEW

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Need theories have been a long-standing topic in psychology and have also recently played a central role in understanding users' experiences with technology. In this section we review prior work on two theories:

- 1) Uses & gratification, a communication theory that has recently been employed in understanding users' experiences with social media.
- 2) A model of 10 universal human needs that is used as a methodological lens in our study of Facebook and WhatsApp.

## II.1. USES & GRATIFICATIONS THEORY

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As computer-mediated communication emerged, scholars began to question whether new media such as the Internet were used to satisfy similar needs as they had theorized to satisfy with traditional communication media (Williams, 1985; Ruggiero, 2000). In new communication media, data possess attributes which are not commonly associated with traditional media such as interactivity, which describes the extent to which users are able to generate content in response to a source and exchange roles on a communication process (Ha & James, 1998); asynchronicity, the ability users' have to interact with information at their convenience and in any point in time (Chamberlain, 1994; Williams, 1988) and demassification, which refers to the control and customization that the medium offers the user (Williams, 1988). As new technologies keep presenting people with more media choices, motivation and satisfaction become crucial components of audience analysis which called out for the importance of examine users gratifications in new media compared to traditional media thus reviving the significance of theories such as the uses & gratifications (U&G) (Ruggiero, 2000).

Uses & Gratification Theory (U&G) is an approach to understanding why and how people actively seek out specific media to satisfy specific needs (Severin 1997). U&G studies typically ask participants to self-report on their typical uses of the media and the gratifications they derive from them. Researches believe that the understanding of individuals media use may offer clues about what their needs are (Lull, 1995) and in turn shed some light of what motivates them to pick a media over another one (Quan-Haase, 2010).

Contrarily to early theories of mass communication that perceived individuals as passive and easily susceptible to the influence of mass media (McQuail, 1993), U&G individuals aren't only passive consumers, they have control over content and its use (Lin, 2001). The audience is assumed as active consumers of media (Katz, 1974) making choices about where to go and what to pay attention. The U&G assumption of an active audience is seen by the researchers as a good fit to study media designed for active use and known for its interactivity such as the internet (Morris, 1996) and its online-based tools such as SNS's (Urista, 2009; Joinson, 2008) or Instant Messaging (Quan-Haase, 2010).

As such, in the next sections we describe prior's studies attempt to provide an understanding under the theoretical lens of U&G theory, on how and why people use Facebook and Instant Messaging tools such as WhatsApp.

## II.1.1. FACEBOOK STUDIES

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Facebook is a Social Networking Site (SNS) that goes back as far as 2004 when it was created by former Harvard undergraduate student Mark Zuckerberg to facilitate social interaction among college students. Fast-forward 10 years of continuous development, the website has grown into a mass social phenomenon registering more than 1.32 billion active users (Facebook Newsroom, 2014) that putting in perspective, it is only slightly less than world's most populous country, namely China with 1.55 billion people (WorldBank, 2013).

Similar to other social networks, Facebook is a web-based service that allows its users' to create a profile with a publicly articulated, traversable list of friends with whom they can reach and interact within the system (Ellison, 2007; Pempek 2009; Boyd, 2007).

Furthermore, users' are able to maintain their profile with their basic and personal information, share what they are doing, or in any case anything else, with the given control of how much information to display. The tool allows users' to join virtual groups of people with the same interests or create their own events. They might also increase their list of connections by adding friends and interact with them directly through features such as private messages, groups, chat, public posts or comments. Alternatively users' can indirectly notify others about their lives by updating their profiles with content available for use in many formats such as text, video, links and pictures.

Overall, Facebook features suggest many opportunities for online communication and sociability (Urista, 2009; Ellison et al., 2007; Quan-Haase, 2010), thus it's not surprising it became deeply embedded in user's lives (Boyd, 2007). Bearing its global success and a large amount of personal and identifiable information generated by users, Facebook soon caught researchers attention as a unique window of observation on attitudes and patterns of information among individuals (Acquisti, 2006).

More recently, researchers have successfully employed the U&G theory in their attempt to understand the gratifications users derive from their use of Facebook.

Considering that social connectivity is SNSs' primary purpose (Donath, 2004), Facebook friendship networks play an important role for user's gratifications using the tool (Quan-Haase, 2010). Likewise, typical benefits individuals acquire from Facebook tap to their needs for relatedness and social interactions, through supporting relationship maintenance and providing means to find out information (Joinson, 2008) and "staying connected" (Urista, 2009) with existing social ties. Associated with this uses, most of prior research identified the social capital building gratification, where Facebook is used to build, invest in and maintain ties with distant friends and contacts (Ellison, 2006; Golder, 2007; Joinson, 2008). Besides existing relationships, users find Facebook to satisfy their social needs by

allowing them to make new connections and foster new relationships (Raacke, 2008; Urista, 2009). Overall, Facebook not only provides an efficient tool to easily satisfy users' communication needs it also allows them to conveniently use it at long distance and at their own pace (Urista, 2009).

Next to social and communication needs, Facebook has been found to provide content gratification and is commonly used as a source of information either to search and learn about social events (Raacke, 2008) or to coordinate get-togethers (Quan-Haase, 2010).

Another typical use is to acquire and track information on members through surveillance, which is facilitated by the easy access Facebook provides to social information (Lampe, 2006; Joinson, 2008; Raacke, 2008). Facebook takes advantage of curiosity by enticing individuals with a constant showcase of social information fragments such as status updates, photos or comments which are displayed on newsfeeds, profiles, pages and groups. Consequently, individuals were found to be motivated enough to ignore the clutter (Hart, 2008) and make use of this information to find out more about their friends, the activities they are involved, how they look and how they behave (Joinson, 2008; Quan-Haase, 2010) which in turn will help them judge what a person is like and form an opinion (Urista, 2009).

In addition, Joinson (2008) describes how users' also acquire social information through social surfing, a unique affordance of SNS's that describes the ability of users to move from one persons' profile to another via Facebook friend links and find out more about their own acquaintances through others social networks.

In consonance with this use, Facebook profiles also serve users as a self-presentation tool (Walther, 2008) allowing them to update their personal information and convey impressions and occurrences of their lives to a large audience. In turn, individuals use it to tailor their appearance and portray their ideal image making themselves more appealing to others with the intention of gaining admirers and friends, as well as to boost their status and self-esteem in both online and offline world (Urista, 2009).

Other studies have found gratifications tapping to individuals need for escapism and the alleviation of boredom. Quan-Haase (2010) for example, found that individuals primarily see Facebook as a form of pastime or hobby and used it to escape from everyday pressures and responsibilities even among its youngest users that find on its use a diversion from school tasks (Quan-Haase, 2010). In turn, Hart (2008) identifies user's need for pleasure and fun, crucial hedonic aspects of a successful user experience (Hassenzahl, 2006; Jordan, 2002), to be fulfilled from the social-pleasurable experiences that Facebook facilitates with a large number of methods that allow users' to interact with their friends.

## II.1.2. INSTANT MESSAGING STUDIES

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Instant Messaging systems are a still evolving phenomenon rooted on early forms of other popular text chat technologies (Herbsleb, 2002). Text-based computer-mediated communication (CMC) such as UNIX utilities “talk” and “write” has been around for over 20 years and popular systems such as Internet Relay Chat (IRC) have been supporting real-time multi-way text chat between its users’ for over a decade (mIRC, 2014).

While sharing similar characteristics that allow people to congregate around topics or activities of common interest, user’s tend to use Instant Messaging essentially for one-on-one conversations or small group chats with known people rather than getting together in chat rooms to converse with strangers or people they don’t know in the offline world (Grinter, 2002).

Coupled with a fast network, most IM systems support Internet-based near-synchronous and even asynchronous messages (as the recipient may or may not answer) between users on the same system. A window is dedicated to dyadic conversations or invite-only group chats, with messages scrolling upward and eventually out of view as the conversation ensues. Within this environment some systems make available additional utilities that provide personal detailed profiles as well as the option to personalize colors, fonts or even to use pictures, files, emoticons, web cameras, voice and URLs while messaging (Grinter, 2002; Flanagan, 2005). Most modern IM systems also provide awareness information about other users’ presence through sorted lists such as “friends” or “family”, that show if other users’ are currently logged in and whether they are active or idle. On top of that, IM typically provides audio alerts signaling when there’s a change over others users’ current state (Grinter, 2002; Nardi, 2000). Although IM typically displays information on other users’ activities and availability, most systems provide users’ the control to decide whether they’d like to be featured on their peers lists through mechanisms that allow them to block their entities from their connections lists.

Prior empirical studies have focused mostly on IM use at the workplace, finding features that supports much of this environment activity including opportunistic interactions such as the ability to ask and respond to questions without overt interruption, the general awareness of other people availability which allow to negotiate other interactions, the management of the conversational progress by enabling users to hold intermittent conversations and the opportunity to participate in social banter (Bradner, 1999; Isaacs, E. 2002; Nardi, 2000). Another assembly of studies had their focus on teenagers finding the adoption of IM in their lives to be motivated by their own needs such as planning future events, collaboration on schoolwork or chatting about casual daily events (Schiano, 2002; Grinter, 2002).

Other studies have employed the U&G theory as a new lens into the study of user gratifications over IM systems with similar findings. Typical benefits of users in IM tap to their needs for affection, through supporting interactive, real-time exchanges (Leung, 2001), which emulate in-person conversations and allow for intimacy and a sense of connection (Hu, 2004). In addition, IM has been found to fulfill users' need for entertainment, both to have fun and to kill time, as well as the need for relaxation, as a way to get away from pressures and responsibilities (Leung, 2001).

Using the same perspective, Quan-Haase (2010) further compared Facebook to Instant Message (IM) applications with respect to the extent to which they fulfill different user needs. Their study suggests a similar gratification profile for both media with similar uses and fulfilling similar communication, sociability and pleasure-stimulation needs. Yet, they noted that the key distinctions between Facebook and IM were brought by from their use. For instance, while IM requires social interaction among its users to acquire social information, Facebook broadcasts such information to its entire network. Furthermore, IM's near-synchronous and private communication channels provides their users the ability to engage in more intimate communication, emulating in-person conversations, allowing for intimacy and a sense of connection, whereas Facebook tends to support the exchange of short messages.

Recently, driven by the evolution and rise of smartphones along with more convenient and competitive mobile data plans, instant messaging systems have gained renewed momentum emerging as new solutions for mobile communication. As for 2014, Mobile instant messaging (MIM) applications are predicted to continue to prosper, threatening popular services such as SMS (The Guardian, 2014; NY Times, 2012).

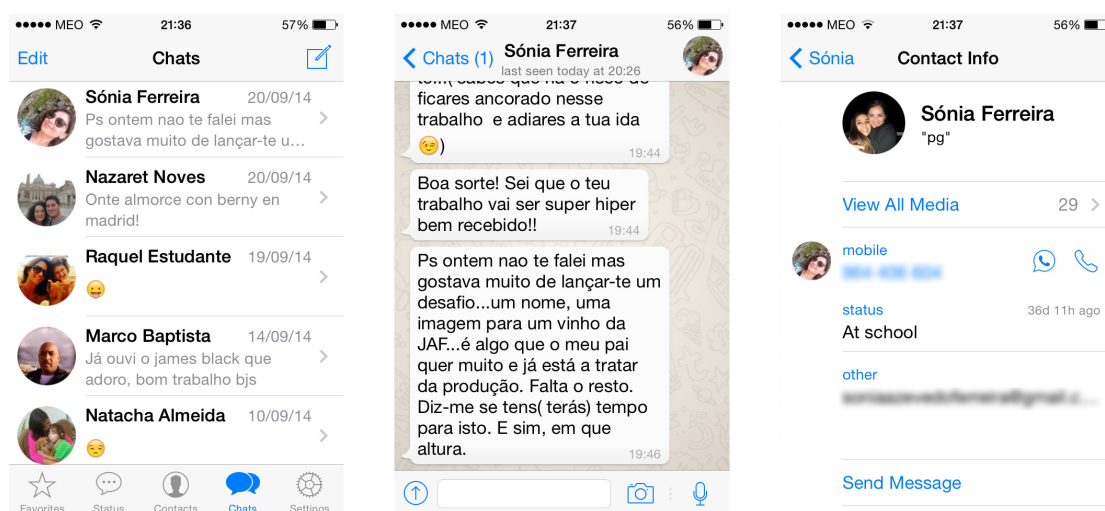
With an extraordinary growing curve over the past years (Business Insider, 2014), one of the most successful MIM applications on the market today is WhatsApp.

Similar to the previously described IM systems, WhatsApp allows its users' to exchanges images, video, audio and text messages in real-time to individuals and groups of friends. Moreover, it also provides awareness of other people information to its users such as when their friends are online, when they are typing, when they last accessed the application as well when a message is sent and when its delivered to the recipients device.

On the other hand, WhatsApp as a MIM application for smartphones requires a mobile Internet connection to function and both parties must have the proprietary software installed on their mobile phone. The application further offers unique uses afforded by mobile technology such as sending and receiving current location information and get notifications on the go.

Differently from typical IM systems, users' do not control whom they can have on their contact list or the other way around as the software syncs the mobile contacts available. Thus, WhatsApp doesn't allow sorted lists other than the alphabetically ordered list replicated from the numbers user registered on their mobile.

Furthermore, WhatsApp distinguishes itself from its stationary correspondents on the disclosure of information about other users' current status, as it present's it on a separate window other than the list of conversations window or the current conversation window (Figure 1).



**Figure 1.** WhatsApp's different communication windows with other users. Available chats list (left); current chat with another user (center); current status of the other user of the chat (right) – requires pressing on the user name on the chat window.

Church and Oliveira (2013) studied the factors that influence the acceptance, usage and growing popularity of WhatsApp. Similar to (Quan-Haase 2010), they found social influence to be one of the main reasons for the adoption of WhatsApp, and remarked that the nature and the intent of WhatsApp supports social, informal and conversational communications which lead to high frequency of use.

## II.2. HUMAN NEEDS FRAMEWORK

Human needs have long been a central theme in psychology and a large number of frameworks have been proposed. Needs can potentially explain a wide variety of behaviors that individuals express (Baumeister & Leary, 1995) and once identified, they can be targeted to enhance personal thriving (Ryan & Deci, 2000). Driven by a lack of consensus regarding which needs are the most central or primary, Sheldon et al. (2001) aimed at deriving a list on an attempt to determine which are truly the most fundamental needs for humans.

Starting from Ryan and Deci's (2000) Self-Determination Theory of motivation and the "big three": *competence*, *autonomy*, and *relatedness*, they elaborated to a more fine grained list inferred from a wide assortment of theories and proposed a list of 10 universal human needs, using two basic criteria. First, if these needs truly are the most satisfying qualities of experience, they should be salient within individuals' most satisfying experiences. Second, the fulfillment of these needs should promote well-being and psychological thriving, as measured through the experiencing of positive affect.

The 10 needs they derived were: autonomy, competence, relatedness, self-esteem, self-actualized meaning, physical thriving, pleasure, stimulation, security and money-luxury. The needs complete description can be found in Table 1.

**Table 1.** The ten Human Needs (description taken from Sheldon (2001) appendix)

Need	Description
Autonomy-Independence	Feeling like you are the cause of your own actions rather than feeling that external forces or pressures are the cause of your actions.
Competence-effectance	Feeling that you are very capable and effective in your actions rather than feeling incompetent or ineffective.
Relatedness-belongingness	Feeling that you have regular intimate contact with people who care about you rather than feeling lonely and uncared of.
Influence-popularity	Feeling that you are liked, respected, and have influence over others rather than feeling like a person whose advice or opinion nobody is interested in.
Pleasure-stimulation	Feeling that you get plenty of enjoyment and pleasure rather than feeling bored and understimulated by life.
Security-control	Feeling safe and in control of your life rather than feeling uncertain and threatened by your circumstances.
Physical thriving-bodily	Feeling that your body is healthy and well-taken care of rather than feeling out of shape and unhealthy.
Self-actualizing - meaning	Feeling that you are developing your best potentials and making life meaningful rather than feeling stagnant and that life does not have much meaning.
Self-esteem-self-respect	Feeling that you are a worthy person who is as good as anyone else rather than feeling like a "loser".
Money-luxury	Feeling that you have plenty of money to buy most of what you want rather than feeling like a poor person who has no nice possessions.

Along with the theory, Sheldon et al. (2001) propose a methodological framework that asks participants to recall and narrate a recent, outstanding experience, satisfying or unsatisfying. After, they employ a validated questionnaire that measures need fulfillment for each of the derived needs. The questionnaire consists of 30 descriptive statements, 3 for each of the 10 needs that begin with the same stem: “*During this event I felt....*”. Participants are typically asked to carefully rate the described experience and thoughtfully differentiate between the different types of feelings using a 1 (“*not at all*”) to 5 (“*very much*”) scale. The complete list of the positive need-satisfaction items is presented in Table 2.

**Table 2.** Need-satisfaction items.

Scale/Item	During this event I felt...
Autonomy-Independence	That my choices were based on my true interests and values. Free to do things my own way. That my choices expressed my "true self."
Competence-effectance	That I was successfully completing difficult tasks and projects. That I was taking on and mastering hard challenges. Very capable in what I did.
Relatedness-belongingness	A sense of contact with people who care for me, and whom I care for. Close and connected with other people who are important to me. A strong sense of intimacy with the people I spent time with.
Influence-popularity	That I was a person whose advice others seek out and follow. That I strongly influenced others' beliefs and behavior. That I had strong impact on what other people did.
Pleasure-stimulation	That I was experiencing new sensations and activities. Intense physical pleasure and enjoyment. That I had found new sources and types of stimulation for myself.
Security-control	That my life was structured and predictable. Glad that I have a comfortable set of routines and habits. Safe from threats and uncertainties.
Physical thriving-bodily	That I got enough exercise and was in excellent physical condition. That my body was getting just what it needed. A strong sense of physical well-being.
Self-actualizing - meaning	That I was "becoming who I really am." A sense of deeper purpose in life. A deeper understanding of myself and my place in the universe.
Self-esteem-self-respect	That I had many positive qualities. Quite satisfied with who I am. A strong sense of self-respect.
Money-luxury	Able to buy most of the things I want. That I had nice things and possessions. That I got plenty of money.

For the unsatisfying experiences and measurement of need deprivation, after writing their description, participants are asked *"What was missing from this event, that is, why was it unsatisfying?"* followed by the same 30 descriptive statements having the wording altered so that they become negative. For example, *"During the event I felt that my choices were based on my true interests and values"* became *"During the event I felt that my choices were not based on my true interests and values"*. The complete need-deprivations items can be found on the appendix.

Next, Sheldon proposes the assessment of affective experience by asking participants to indicate how they felt during the event through the completion of the Positive Affect/Negative Affect scale (PANAS) (Watson, 1988).

The PANAS is a widely used and validated questionnaire, consisting of 20 items that efficiently measure the two primary dimensions of mood - Positive and Negative Affect. There are 10 descriptors for each dimension with each of them describing a mood adjective such as scared, ashamed, proud and excited. Each descriptor itself captures the specific content of the affect and, thus, expresses qualitative differences in experience. The complete verbal descriptors of the PANAS scale can be found in Table 3.

**Table 3.** The 20 verbal descriptors of the PANAS scale (taken from Watson (1988) appendix)

Affect	Descriptors
Negative Affect	<i>Afraid, scared, nervous, jittery, irritable, hostile, guilty, ashamed, upset, and distressed</i>
Positive Affect	<i>Active, alert, attentive, determined, enthusiastic, excited, inspired, proud, strong and interested</i>

Impelled by the demand of new approaches to the design of interactive products which accommodate experiential qualities of technology (McCarthy, 2004), the human needs theory (Sheldon, 2001) has recently been used within HCI [e.g., Hassenzahl, 2010; Partala, 2012; Tuch, 2013], where a clear link has been established between need fulfillment and positive experiences with technology. The methodology used by the needs theory offers a different perspective to reflect upon and understand situations, activities and product features in terms of the experience they provide.

Based on the proven potential of this new lens with interactive technology, in the next sections we focus our efforts on unique outstanding experiences on an attempt to obtain a new perspective to the inquiry of users' experiences with and need fulfillment through social media, namely Facebook and WhatsApp.

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## III. STUDY

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The current study aimed to understand users' behaviors and experiences on social media tools. We selected Facebook and WhatsApp due to their widespread use, yet different character, thus making it likely to uncover different use and need fulfillment profiles between the two media.

### III.1. RECRUITMENT

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For our study, a survey was built using the Qualtrics online survey software (<http://www.qualtrics.com/>). The tool allows the creation and deployment of online questionnaires by generating a link that can be used either individually to a unique participant or fed to a survey system. For each participant entry, the data is time stamped and easily retrieved.

In order to assess viability, a first version of the survey was distributed through the generated link within a sample of friends and academics peers. The retrieved data offered us enough cues to fine tune details such as the optimal time to finish the survey as well as the wording of the survey questions.

After the refinement of the questionnaire, we recruited participants to the final online survey through Amazon Mechanical Turk ([www.mturk.com](http://www.mturk.com)) and offered \$1.5USD for their effort. MTurk was chosen to deploy the survey as it allowed us to quickly and efficiently target a large audience from various countries, ages and cultures and a wide variety of heterogeneous experiences using either Facebook or WhatsApp.

While our study was constrained to Facebook and WhatsApp, MTurk provided no way of filtering the users towards our target audience. To overcome this, participants were presented with an initial qualifying question inquiring into the social media that they currently use or have used before. Between Facebook and WhatsApp, 13 additional social media tools (e.g.: Instagram, Twitter, Skype and others) were available.

Participants would be recruited to our survey when choosing at least one of the tools aimed for the study. This would make them eligible to answer the survey regarding their selected tool. If they happened to use both tools, then they were randomly assigned to either Facebook or WhatsApp. Regardless of the assigned survey, users would be randomly qualified under one of two conditions – reporting either a *satisfying* or *unsatisfying* experience. The Qualtrics software ensured that the surveys were deployed evenly either for the tool or for the satisfying/unsatisfying condition requested. We've implemented this condition to ensure a balanced number of resulting satisfying and unsatisfying experiences.

Once assigned to a questionnaire, the participants were asked to complete it on a 15m period of time. All materials were in English and each questionnaire consisted of three parts: a) Introduction, demographic and usage information, b) report of a positive experience, needs and affect and c) intensity scales.

In the introduction, we stated our interest in the experience of situations in which the selected social media plays a role followed by a small group of questions to collect demographics as well as usage information such as the frequency of use per day and the approximate number of years that the user started using the tool.

Following Sheldon's (2001) human needs methodology, participants were then asked to think of and write down a recent, outstanding, either a positive or a negative experience with either Facebook or WhatsApp depending on which of the condition they were assigned to. After, they were asked to relive that same experience and to rate it on two distinct scales: need fulfillment and experienced affect using the PANAS scale.

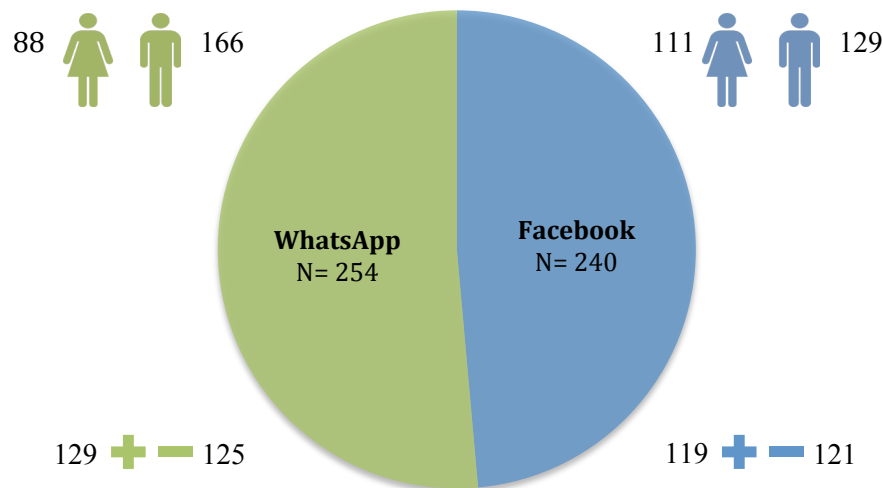
Finally, participants were asked to rate the tool in terms of intensity measured through a reduced version of Ellison's et al Facebook Intensity Scale, followed by a thank you note and an email address for further inquiries. A summary of the questions on each section together with the method employed is described in Table 4. The full questionnaires are available on the Appendix.

**Table 4.** Questions used on the Survey.

<p><b>Introduction, Demographics and Usage Information</b> Introductory description of the work. 3 questions for demographics: Gender, age and country. 2 questions for usage information: Frequency from "don't use it any more" to "more than 120m per day" and first time starting to use Facebook (or WhatsApp) from "less than one year" to "more than 4 years".</p> <p><b>Memorable Experience – based on Sheldon (2001) human needs framework</b> One open question: "Bring to mind the single most satisfying (or unsatisfying) event you have had with Facebook (or WhatsApp)."</p> <p><b>Need-fulfillment – based on Sheldon (2001) human needs framework</b> 30 questions answered from "very slightly or not at all" (1) to "extremely" (5), such as: "During this experience I felt (or "I didn't felt") I was very capable in what I did", "During this experience I felt (or "I didn't felt") a strong sense of physical well-being"</p> <p><b>Affect – based on Watson (1988) PANAS Scale</b> 20 questions answered from "very slightly or not at all" (1) to "extremely" (5). 10 were related to positive affects (e.g. "During this experience to what extent did you feel proud") while the remaining 10 were related to negative affects (e.g. "During this experience to what extent did you feel afraid")</p> <p><b>Intensity Scale based on Ellison (2001) Facebook Intensity Scale</b> 6 questions answered from "strongly disagree" (1) to "strongly agree" (5), such as: "Facebook/WhatsApp is part of my everyday activity", "I am proud to tell people I'm on Facebook/WhatsApp"</p>
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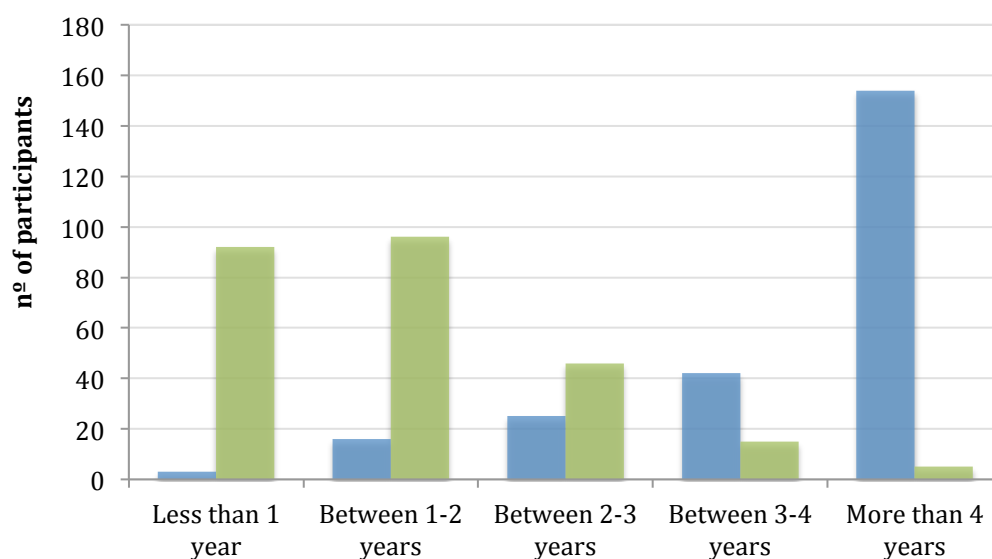
## III.2. PARTICIPANTS

A total of 494 participants completed successfully the study (*Facebook*: N=240, 119 satisfying experiences, 121 unsatisfying experiences, 129 male, 111 female, Median age = 30y, *WhatsApp*: N=254, 129 satisfying experiences, 125 unsatisfying experiences, 166 male, 88 female, Median age = 27y).



**Figure 2.** Demographic distribution and satisfying/unsatisfying experiences.

The majority of participants (64%) reporting on Facebook had used the tool for over four years, while most reporting on WhatsApp had used the tool for less than two years (74%). Over 60% of our participants had a US nationality, 30% Indian, and less than 10% had a nationality of a third country.



**Figure 3.** Duration when participants first start using the tool (*in years*).

### III.3. METHOD

The current study used a series of methods and scales derived from previous research (Sheldon's et al., 2001; Ellison's et al., 2007; Watson, 1988) on an attempt to identify users' experiences and need fulfillment using Facebook and WhatsApp as well as their self-reported intensity of use.

#### III.3.1. REPORTING A MEMORABLE EXPERIENCE

Following Sheldon's et al. (2001) methodology and a similar application within HCI employed by Hassenzahl et al. (2010), we asked participants to recall and narrate a recent outstanding experience, satisfying or unsatisfying, they had with the tool.

In order to obtain richer insights onto participants experiences, we asked them to give a deep thought and retell with details the event context by suggesting them to mention how and when it happened and how they felt during the experience. As with Sheldon's et al. (2001) study, we informed participants that they should think of "satisfying" and "unsatisfying" in whatever way it made sense to them and we added a couple examples of narratives (Table 5) based on the retrieved entries of the first test version of the survey. Considering that humans needs can be seen as qualities whose absence leads to unhappiness (Maslow, 1954), we also employed a question following the unsatisfying experience report that further explored the issue of need deprivation by asking participants to stress out what made the event particularly unsatisfying.

**Table 5.** Reported narrative examples (retrieved from the first version test survey).

	Facebook	WhatsApp
Satisfying Experiences	<i>"I got into a fitness competition on my gym and they posted some of the pictures on the following day. It felt great to receive a lots of likes even from unknown people and some even wrote great comments about my performance. That motivated me to go to the gym more frequently and I actually made some new buddies there."</i>	<i>"I got into this big time argument with my girlfriend because I was online at 4am and she confronted me on the chat asking me why I was online at that hour It was quite frustrating because she kept assuming I was holding some sort of secret from her. Although I shouldn't have to give any satisfactions about who I chat with I felt the need to explain myself to calm things down and be able to sleep without drama that night."</i>
Unsatisfying Experiences	<i>"When I broke up with my ex boyfriend and he started to post in his wall depressing songs and quotes. I got so pissed off that he made me feel like the villain and couldn't stand all the silly comments to cheer him up from people that didn't knew half of the story. I removed him from my friends list so I didn't had to see him playing the victim."</i>	<i>"Last summer when I was on my vacations my uncle sent me a picture of my newborn cousin just a couple hours after he was born I was so happy they remembered to share that special moment with me and felt amazing to be part of that moment even being on another country"</i>

### III.3.2. NEED FULLFILLMENT

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Sheldon's et. al (2001) original questionnaire rates the experiences fulfillment of 10 human needs (*autonomy, competence, relatedness, popularity, pleasure, security, physical thriving, self-actualising-meaning, self-esteem and money-luxury*) using 30 descriptive statements, 3 for each of the 10 needs.

On our study on the other hand, for each reported experience, we asked participants to rate the experienced fulfillment of six of these needs, namely *competence, relatedness, pleasure, security, self-esteem and popularity*.

Similar to Hassenzahl et al. (2010) and Tuch et al. (2013), *physical thriving* was excluded due to its low relevance to the context. *Luxury* was excluded due to its marginal significance even in the studies of Sheldon et al. (2001); *autonomy* and *meaning* were excluded, as they could be understood rather as an outcome of need fulfillment than a need in itself. Each need was captured with three items, 18 in total, from the original Sheldon et. al (2001) survey (see Table 2).

Internal reliability for all scales was satisfactory (see Table 6, diagonal). Table 6 further shows the interscale correlations. While in many cases substantial (average interscale correlation=0.41), they are always below the internal consistency. Thus, it is still plausible to understand the six needs as conceptually different.

**Table 6.** Needs along with their interscale correlations and internal reliability (diagonal).

Need	Competence	Relatedness	Pleasure	Security	Self-esteem	Popularity
Competence	(0.84)					
Relatedness	0.29	(0.91)				
Pleasure	0.47	0.44	(0.87)			
Security	0.28	0.37	0.33	(0.81)		
Self-esteem	0.36	0.13	0.35	0.50	(0.93)	
Popularity	0.30	0.71	0.37	0.54	0.40	(0.89)

### III.3.3. AFFECT

Experienced affect was measured with the Positive Affect Negative Affect Schedule (PANAS, Watson et al., 1988). The PANAS consists of a scale with 20 verbal descriptors (10 negative and 10 positive) of different affective experiences, namely *afraid, scared, nervous, jittery, irritable, hostile, guilty, ashamed, upset, and distressed* for negative affect (NA) and *active, alert, attentive, determined, enthusiastic, excited, inspired, proud, strong and interested* for positive affect (PA).

Participants reported how much they experienced each of the particular items of affect during their significant experience on a five point from 1 (“Not at all”) to 5 (“Extremely”). PANAS is a scale that assumes a hierarchical structure (Watson and Tellegen, 1985), with two broad factors capturing the valence of the experienced affect (positive, negative). Each of the descriptors captures the specific content of the affect and, thus, expresses qualitative differences in experience.

Internal reliability was excellent for both positive affect (Cronbach's Alpha = 0.93) and negative affect (Cronbach's Alpha = 0.91).

A correlation analysis between each universal need and affect was reported for participants satisfying and unsatisfying experiences using both tools (Table 7). Our findings show significant correlation between all needs and positive affect in satisfying experiences, whereas only *relatedness* had negative significance for negative affect in both Facebook and WhatsApp. On users’ unsatisfying experiences, *competence, pleasure, security, self-esteem* and *popularity* correlated to positive affect in Facebook while in WhatsApp only *competence* and *pleasure* showed significance. All needs correlated to negative affect on unsatisfying experiences with both tools. Overall, both tools exhibit similar need-affect profiles.

**Table 7.** Mean ratings of need fulfillment and correlation to positive and negative affect, clustered over satisfying (SE) and unsatisfying experiences (UE) with both tools.

Need		Facebook			WhatsApp		
		Mean (SD)	Corr. PA	Corr. NA	Mean (SD)	Corr. PA	Corr. NA
Competence	SE:	3.49 (1.00)	0.48**	0.09	3.58 (0.94)	0.32**	0.08
	UE:	2.07 (1.02)	0.45**	0.19*	2.53 (1.13)	-0.18*	0.30**
Relatedness	SE:	4.05 (0.97)	0.46**	-0.30**	4.29 (0.77)	0.29**	-0.22*
	UE:	2.66 (1.14)	0.13	0.20*	3.01 (1.45)	-0.04	0.26**
Pleasure	SE:	3.51 (1.03)	0.68**	0.04	3.59 (1.00)	0.53**	-0.05
	UE:	2.21 (1.13)	0.45**	0.26**	2.47 (1.66)	0.21*	0.24**
Security	SE:	3.01 (0.99)	0.38**	0.06	3.15 (1.00)	0.41**	0.16
	UE:	2.26 (1.02)	0.42**	0.37**	2.61 (1.19)	0.06	0.35**
Self-Esteem	SE:	3.84 (0.89)	0.62**	-0.13	3.84 (0.98)	0.44**	-0.09
	UE:	2.26 (1.14)	0.33**	0.33**	2.32 (1.20)	0.14	0.28**
Popularity	SE:	3.15 (1.15)	0.41**	0.03	3.48 (1.07)	0.46**	0.08
	UE:	2.39 (1.14)	0.34**	0.25**	2.57 (1.22)	0.14	0.27**

\*p<.05, \*\*p<.01

### III.3.4. INTENSITY OF USE

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Participants' intensity of use was measured through Ellison's et al. (2007) Facebook Intensity Scale (FBI). This scale was created in order to obtain a better measure of Facebook usage beyond simple measures of frequency or duration indices.

The intensity of use measurement includes a series of Likert-scale attitudinal questions designed to tap the extent to which the participant is emotionally connected to Facebook and the extent to which Facebook was integrated into their daily activities.

For our study, we employed a reduced version of the scale and participants' intensity of use of both Facebook and WhatsApp was measured through four items (Table 8) on a five point from 1 ("*Strongly Disagree*") to 5 ("*Strongly Agree*") scale. The remaining items (i.e.: "*I feel out of touch when I haven't logged onto Facebook for a while*" and "*I feel I am part of the Facebook community*") of the original scale were excluded as they did not apply or might lead to different interpretations on Facebook and WhatsApp.

**Table 8.** Reduced Version of FBI scale items employed on the survey.

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**Facebook Survey**

1. Facebook is part of my everyday activity.
2. I am proud to tell people I'm on Facebook.
3. Facebook has become part of my daily routine.
4. I would be very sorry if Facebook shut down.

**WhatsApp Survey**

1. WhatsApp is part of my everyday activity.
  2. I am proud to tell people I'm on WhatsApp.
  3. WhatsApp has become part of my daily routine.
  4. I would be very sorry if WhatsApp shut down.
- 

The Intensity score was computed by calculating the mean of all the four items in the reduced version of the scale. Internal reliability of the adapted scale was good for Facebook (Cronbach's  $\alpha=0.87$ ) and excellent for WhatsApp ( $\alpha=0.92$ ).

### III.4. DATA ANALYSES

Participants submitted a total of 494 experience narratives (each participant submitting a single narrative) with an average length of 70 words (median=69, SD=33). From this sample, the narratives were further classified by media as well as the nature of the experience reported (254 *WhatsApp*: 254 experience narratives, 129 satisfying, 125 unsatisfying; *Facebook*: 240 experience narratives, 119 satisfying, 121 unsatisfying).

Next, we examined participants' self-reported intensity of use for Facebook and WhatsApp under the two conditions of the study – *satisfying* and *unsatisfying* experiences.

In addition, we analyzed satisfying and unsatisfying experiences separately and attempt to understand the needs these the two tools fulfill in two ways. First, we examined participants' ratings for each reported experience with respect to the saliency of each of the six needs. Second, we performed a qualitative analysis with the goal of understanding the social practices that surrounded the use of the two social media tools.

We crystalized our qualitative findings with a classification of the reported narratives by the social practice they represent (Table 9) and we further discuss the experiences these practices mediated on users.

**Table 9.** Summary of Facebook and WhatsApp social practices.

	Facebook practices	WhatsApp practices
Satisfying Experiences	<ol style="list-style-type: none"> <li>1. <i>Expressing one's self.</i></li> <li>2. <i>Social Surveillance.</i></li> <li>3. <i>To find and to be found.</i></li> <li>4. <i>Interact with like-minded people.</i></li> <li>5. <i>Life logging.</i></li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Intimate synchronous communications.</i></li> <li>2. <i>Crafting desired experiences on recipients.</i></li> <li>3. <i>Making distant individuals feeling present.</i></li> <li>4. <i>Collective life logging.</i></li> </ol>
Unsatisfying Experiences	<ol style="list-style-type: none"> <li>1. <i>Content Fatigue.</i></li> <li>2. <i>Exposure trough Surveillance.</i></li> <li>3. <i>Unfriending people.</i></li> <li>4. <i>Untagging people.</i></li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Changing the norms in real-time communications.</i></li> <li>2. <i>Exposing personal content to wrong addressee.</i></li> <li>3. <i>Unsolicited group participation.</i></li> <li>4. <i>Monitoring other people.</i></li> </ol>

### III.4.1. INTENSITY OF FACEBOOK AND WHATSAPP USE

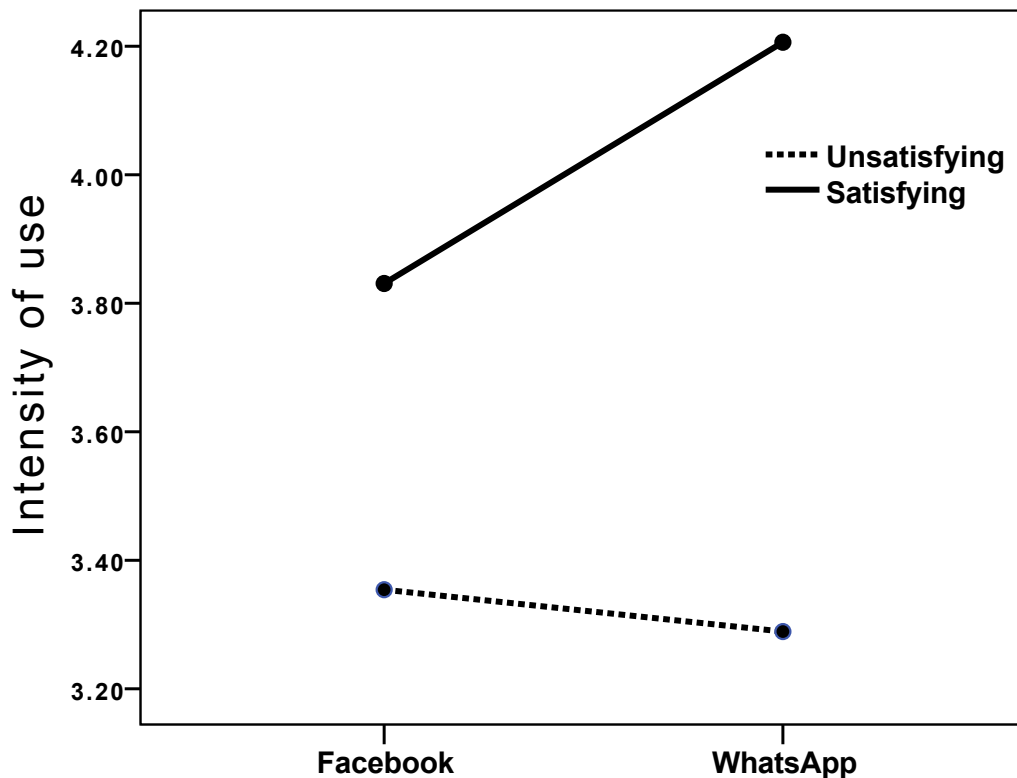
A one-way ANOVA with *intensity of use* as the dependent variable and *tool* (Facebook vs. WhatsApp) and *condition* (reporting on satisfying versus unsatisfying experiences) revealed no significant main effect for tool,  $F(1,478)=3.0$ ,  $p=0.08$ ,  $h_p^2=.11$ , but a significant effect for condition,  $F(1,478)=60$ ,  $p<.001$ ,  $h_p^2=.11$ , and a significant interaction between condition and tool,  $F(1,478)=6$ ,  $p<.01$ ,  $h_p^2=.01$ . The Intensity score was computed by calculating the mean of all the four items in the reduced version of the scale (Table 10).

**Table 10.** Computed Intensity score on Facebook and WhatsApp experiences

Intensity	Facebook Mean (SD)	WhatsApp Mean (SD)
Satisfying experiences	3.83 (0.86)	4.21 (0.60)*
Unsatisfying experiences	3.35 (1.15)	3.29 (1.22)

\* $p<.05$ , \*\* $p<.01$

Overall, a significant difference was found in the self-reported intensity of use of WhatsApp and Facebook for people reporting satisfying experiences, with WhatsApp users' reporting higher intensity of use. On the other hand, no significant difference was found in the intensity of use of the two tools amongst people reporting unsatisfying experiences (see Figure 4).



**Figure 4.** Self-reported intensity of use for Facebook and WhatsApp, for the two conditions of the study.

A bivariate correlation analysis between the intensity of use, the age of the participants, measured through an open-ended question and, for how long participants have been using the tool (measured through a 5-item Likert scale 1-“*Less than 1 year*”, 2-“*Between 1-2 years*”, 3-“*Between 2-3 years*”, 4-“*Between 3-4 years*”, 5-“*More than 4 years*”), was reported for participants satisfying experiences using both tools. The results are shown in Table 11.

**Table 21.** Bivariate correlations between Age, Intensity and the duration using the tools on participants satisfying experiences

		Age	Intensity	Duration on the tool
Age	FB:	1	<b>0.290**</b>	-0.072
	WA:	1	0.034	-0.004
Intensity	FB:	<b>0.290**</b>	1	0.098
	WA:	0.034	1	<b>0.253**</b>
Duration on the tool	FB:	-0.072	0.098	1
	WA:	-0.004	<b>0.253**</b>	1

\*p<.05, \*\*p<.001

Our findings show significant correlation between age and self-reported intensity on Facebook but not on WhatsApp. The older user's are, higher their intensity of Facebook use but not necessarily on WhatsApp.

A possible explanation might relate to the recent exodus of teenagers from Facebook to other social media tools and Facebook's increasing adoption from older audiences (Time, 2014), together with WhatsApp adoption success within the teenager group (Church, 2014) that reveals this media to be mostly dominated by younger users'.

Next, there is a significant correlation between how long users' use WhatsApp and their self-reported intensity of use (i.e.: Participants intensity of use increases when using WhatsApp for a longer time but this does not happen with Facebook).

As intensity of use measures participant's emotionally connectedness to the tool and the extent they had integrated it into their daily activities, a possible explanation might be that WhatsApp's short life span might have lead participants to a high initial engagement (74% of participants reported been using WhatsApp for less than 2 years), while at the same time, it hint's that Facebook users' might be disengaged after some years of use.

In the same conditions as above, a bivariate correlation between the ages of the participants, the intensity of use and the duration of its use were made for unsatisfying experiences using on both Facebook and WhatsApp. Results are shown in Table 12.

**Table 12.** Bivariate correlations between Age, Intensity and the duration using the tools on participants unsatisfying experiences

		Age	Intensity	Duration on the tool
Age	FB:	1	-0.060	<b>-0.183*</b>
	WA:	1	-0.030	0.024
Intensity	FB:	-0.060	1	0.105
	WA:	0.024	1	<b>0.265**</b>
Duration on the tool	FB:	<b>-0.183*</b>	0.105	1
	WA:	0.024	<b>0.265**</b>	1

\*p<.05, \*\*p<.001

Results show a significant negative correlation between users' age and for how long they use Facebook (i.e.: Older user's have been later adopters of Facebook) and between how long users' use WhatsApp and their intensity of use (i.e.: Apparently, user's intensity of use increases with user's continued use of WhatsApp). Both these findings are in consonance with the statement before that Facebook's older audience is generally growing and, because WhatsApp is a novelty, it might have had influence on an early engagement from its user's.

Overall, the same correlations for both satisfying and unsatisfying experiences show similar interpretations and there's no clear distinction across the two conditions of the user's reported experiences.

In the next sections, we further perform a throughout analysis of users' satisfying and unsatisfying experiences separately and we attempt to understand the needs these the two tools fulfill as well as the social practices surrounding them.

### III.4.2. SATISFYING EXPERIENCES

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Overall, we gathered 248 satisfying experiences from both Facebook and WhatsApp, which we next analyze quantitatively in terms of need fulfillment and affect, followed by a qualitative analyses.

### III.4.2.1. SALIENCE OF NEEDS

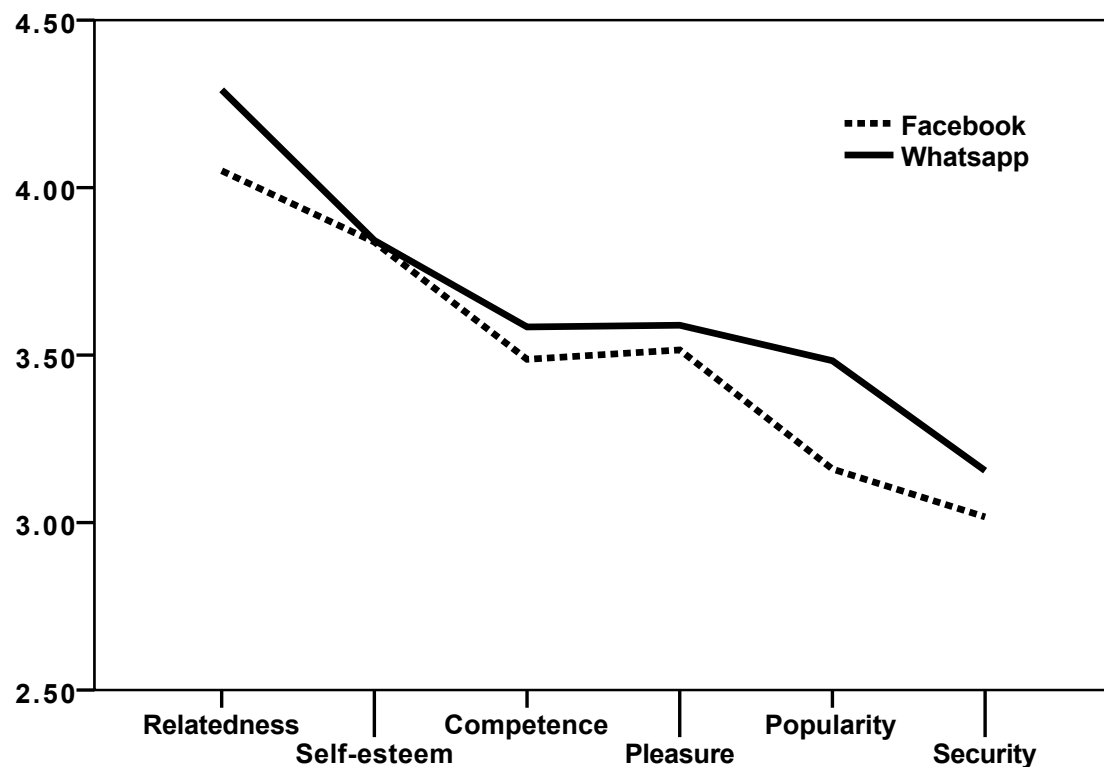
Table 13 presents the mean values and standard deviation for each of the 6 measured needs, in rank order. Differences between these means were tested using paired sample t tests. As it can be observed, *relatedness* and *self-esteem* emerged at the top of the list for both Facebook and WhatsApp, suggesting that these are the most salient experiential elements of satisfying experiences with both these tools and maybe for all social media of the same nature.

**Table 33.** Mean ratings of need fulfillment on Facebook and WhatsApp satisfying experiences.

Needs	Facebook Mean (SD)	WhatsApp Mean (SD)
Relatedness	4.05 (0.97)	4.29 (0.77)*
Self-Esteem	3.84 (0.89)	3.84 (0.98)
Pleasure	3.51 (1.03)	3.59 (1.00)
Competence	3.49 (1.00)	3.58 (0.94)
Popularity	3.16 (1.15)	3.48 (1.07)*
Security	3.01 (0.99)	3.15 (1.10)
<b>Affect</b>		
Positive Affect	3.67 (0.89)	3.79 (0.84)

\*  $p < .05$ , \*\*  $p < 0.01$

Although results show that the two tools exhibit a similar profile with relatedness and self-esteem being the most fulfilled needs followed by the remaining needs in the exact same order for both tools (see Figure 5 to better visualization), significant differences are found between the two tools with respect to two needs: *relatedness*, WA: mean=4.3, SD=0.8, FB: mean=4.0, SD=1.0,  $t(246)=2.2$ ,  $p<0.05$ , and *popularity*, WA: mean=3.5, SD=1.1, FB: mean=3.2, SD=1.2,  $t(246)=2.3$ ,  $p<0.05$ .



**Figure 5.** Need fulfillment for Facebook and WhatsApp among participants reporting satisfying experiences

Multiple regression analyses were used to test which, if any, of the needs significantly predicted participants' self-reported intensity of use.

For WhatsApp, *relatedness* was the single significant predictor of intensity of use ( $\beta=.56$ ,  $p<.001$ ), explaining 11% of the variance ( $R^2=.15$ ,  $F(6,121)=3.7$ ,  $p<.01$ ).

For Facebook, *self-esteem* was the single significant predictor of intensity of use ( $\beta=.31$ ,  $p<.001$ ), explaining 12% of the variance ( $R^2=.17$ ,  $F(6,110)=3.7$ ,  $p<.01$ ).

These results highlight the different nature and social needs Facebook and WhatsApp fulfill. In the next three sections we analyze the experienced affect that participants self-reported during this event and we perform a qualitative analysis of participants' experience reports with the goal of understanding the social practices that surround the use of these tools and the experiences these mediate.

### III.4.2.2. EXPERIENCED AFFECT DURING SATISFYING EXPERIENCES

Table 14 displays the experienced affect in participants' reported satisfying experiences. Significant differences are found between the two tools with respect to five items: *interested*, WA: mean=4.4, SD=0.8, FB: mean=4.1, SD=1.0,  $p<0.05$ , *excited*, WA: mean=4.1, SD=1.1, FB: mean=3.7, SD=1.3,  $p<0.05$ , *scared*, WA: mean=1.5, SD=1.0, FB: mean=1.3, SD=0.7,  $p<0.05$ , *hostile*, WA: mean=1.6, SD=1.0, FB: mean=1.3, SD=0.8,  $p<0.05$ , and *afraid*, WA: mean=1.5, SD=1.0, FB: mean=1.3, SD=0.7,  $p<0.05$ .

**Table 44.** Mean ratings for each item of Affect on Facebook and WhatsApp satisfying experiences

	Descriptors	Facebook Mean (SD)	WhatsApp Mean (SD)
Negative Affect (NA)	afraid	1.31 (0.66)	1.54 (1.06)*
	scared	1.30 (0.66)	1.55 (1.01)*
	nervous	1.74 (1.12)	1.88 (1.22)
	jittery	1.57 (0.98)	1.68 (1.10)
	irritable	1.33 (0.80)	1.48 (1.02)
	hostile	1.28 (0.84)	1.59 (1.06)*
	guilty	1.26 (0.74)	1.45 (0.94)
	ashamed	1.26 (0.70)	1.37 (0.87)
	upset	1.30 (0.75)	1.34 (0.74)
	distressed	1.54 (0.92)	1.62 (1.08)
Positive Affect (PA)	active	3.54 (1.19)	3.82 (1.11)
	alert	3.37 (1.32)	3.34 (1.41)
	attentive	3.91 (1.09)	3.89 (1.16)
	determined	3.51 (1.24)	3.57 (1.26)
	enthusiastic	3.87 (1.23)	4.02 (1.09)
	excited	3.71 (1.28)	4.09 (1.08)*
	inspired	3.57 (1.21)	3.60 (1.36)
	proud	3.71 (1.23)	3.62 (1.30)
	strong	3.39 (1.30)	3.51 (1.33)
	interested	4.14 (0.97)	4.41 (0.81)*

\* $p<0.05$ , \*\* $p<0.01$

During their satisfying experiences with WhatsApp, users' felt more interested and excited than Facebook users with their correspondent positive experiences.

Overall, results suggest that satisfying experiences with WhatsApp's lead to higher experience of positive affect than on Facebook, at least with respect to interest and excitement.

### III.4.2.3. SATISFYING EXPERIENCES WITH WHATSAPP

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Overall we found users' satisfying experiences with WhatsApp to tap to its ability to afford *intimate synchronous communications*, to support them in *crafting desired experiences on recipients*, in making distant individuals *feeling present* in a significant life event, as well to support them in collective *lifelogging* practices.

#### Loosing track of time with intimate communications

---

In agreement with prior work we found WhatsApp' to better afford intimate communications than Facebook (Hu, 2004; Quan-Haase, 2010). While both tools allowed for synchronous communication, Facebook provided better ability for multitasking, which in turn afforded asynchronous communication practices. On the contrary, in WhatsApp's restricted environment users experienced a heightened sense of presence in the communication.

First, due to their building of anticipation as they waited for the other party's response. A good example is the playful interactions between a participant and his mother where the waiting for the other person response became a valuable experience:

*"A little over a year ago I was introduced to this app. My mom soon after, left me a very funny voice message. I had no idea that this app was this clever. I could hear her perfectly and it was so easy to go back and forth leaving each other voice messages."*

Second, due to their ability to efficiently express their emotions and experiences, e.g.: *"I was friends with this one girl.... I told her I'd download it [WhatsApp]... For whatever reason, we got into a really heavy conversation about our lives, goals, dreams, all the big issues. It was really nice to be able to have that kind of deep, meaningful conversation with her and I learned a lot about her."*. Moreover, we found that through a wide variety of rich media such as smileys, images and voice memos, WhatsApp unlocked opportunities for users' to engage more personally with their close circles in different contexts such as expressing opinions in real time while shopping.

e.g.: *"Being able to use lots of smileys to express my emotions and sending/receiving lots of pictures on real time is really satisfying. (...) I really like for example when I go shopping, I can ask for opinions with pictures and its like my friends are actually there."*

Finally, we found that a deeper engagement with peers happened even at great distances without sacrificing the sense of presence, as a participant reflected, *"It was a great way to get to know a friend living in Sweden. Considering the geographical distance, we managed to get really close to each other."*

In fact, the sense of presence sometimes went as far as blurring the line between the virtual and the reality, as a participant explains the closeness felt and emotions lived during a communication with her family:

*“The single most satisfying moment was sharing my aunt’s 90th birthday party as it was happening. It was lovely to be there, although only in a virtual way. It felt real. We cried and laughed and it was lovely”.*

### **Crafting communication experiences**

---

Next, we found some of WhatsApp’s features, such as its voice memo feature, to provide users with the ability to craft a desired experience on the recipient, through crafting the *content* or the *timing* of a communication. A powerful example was the one of a father, whose daughter went on her first trip with friends from college. As she left, he sent her a voice memo reflecting on her childhood and her affairs. The ability to craft the message and its timing on WhatsApp allowed the father to express his emotions, without the interruptions and the uncomfortable feeling that might occur in a face to face or other synchronous communication, while enabling him to iterate on the content creation till the optimal result is achieved for his daughter. At the same time, this relieved his daughter from the anxiety relating to her response, which would exist in a synchronous communication, thus allowing her to focus on the voice message and thus providing a more vivid experience.

A wealth of similar satisfying experiences were reported both from senders and recipients, relating to WhatsApp ability to craft the content (e.g., through pausing or reshooting the voice message) as well as the timing of the message (e.g., friends sending a voice memo or photos for birthday wishes right after 12pm): *“Every year my friends used to celebrate my birthday. But for my last birthday I was out of station for on site project. And I was worrying a lot that I am missing all the fun for this birthday. But, surprisingly sharp 12 o’clock I received a video from one of my close friend. I felt very happy after seeing that video because, all my friends celebrated my birthday by cutting cake. That birthday was very special to me ever.”*

We found these WhatsApp abilities to also help user’s maintain regular contact with their close relationships at their own pace and with respect to both intervenient availability, (e.g., *I hadn’t heard from my close friend in a long time. We weren’t able to find the time to catch up and we were in different countries. She left audio messages on WhatsApp about all her life updates and I just sat and listened to them and sent replies. I found it rather satisfying since neither of us had to worry about finding dedicated time and still felt I like I had heard her out.*) as well as cultivate them through altruistic acts for others as reported by a couple of parents that was able to send a supporting message to their kid right before she or he opened a university acceptance letter: *“This year I had applied to medical school, and I was pretty down and out. My interviews had not gone so well, and I knew since I had PhD. I was going*

*to be considered last for most of the spots. My dad and mom sent me a voice message before I opened my MATCH file that told me they were very proud of me and no matter what happened they were proud of me. It made me feel so much better about opening my MATCH letter to find out if or where I was going to go to medical school at.”*

In fact, we found WhatsApp’s ability to craft content not only to mediate a variety of user’s positive experiences but in some cases, to play a critical role on shaping them, e.g.:

*“It was a rainy day around an year ago, when the girl was dating sent me a picture of the place I was heading too. She kept sending me the different pics of places which were in the way to my destination. When I reached the place she sent me the roses and was standing there with the bunch of roses in person. I proposed to her that day. Probably the best thing that ever happened to me.”*

### **Being there**

---

An interesting practice that emerged from our data was the one of *near-real-time sharing* of an event as it unfolds to make someone separated by distance feel present in the event, e.g.:

*“The single most satisfying moment was sharing my aunt's 90th birthday party as it was happening. It was lovely to be there, although only in a virtual way. It felt real. We cried and laughed and it was lovely”.*

We found WhatsApp's ability to share rich media such as photos, videos and voice memos in real time, to make the experience of sharing events more immersive and gratifying for both ends of the communication.

First, for the absent receiver of the event, (e.g.: *I have a friend who recently re-located to the middle east a couple of months ago. Him and me being best buds; we were missing out on a lot of things. My friend and I have always been great fans of video games and comics and such stuff. I never got a chance to go to Comicon and Gamescon but a few months ago he got the chance to visit Comicon and he shared all the videos and pictures from comicon via WhatsApp to me as he went through it. I think this was the most satisfying moment I had with WhatsApp*)

Second, as well as for the person sharing the event. In these cases, we found WhatsApp to be emotionally rewarding as it gave users’ the chance to feel good about doing something for the other person. A good example is reported by a participant that described how meaningful it was to them that they could share a family wedding as it happened with an absent member, *"My sister was planning a wedding last year. (...) before the wedding my great uncle got sick and couldn't travel. He's always been like a father to us, and everyone wanted him to be there. We hoped he would get*

*better but as the months went on, his condition deteriorated. So I used WhatsApp to make my uncle feel like he was at the wedding. (...) So I sent him a combination of photos and videos almost every 2 minutes. And created a family message for him. I used it throughout the entire event, and the reception too. It meant so much that he was able to be there, and enjoy it with us. Even though he couldn't travel."*

In other contexts, WhatsApp was used as an awareness technology, either for providing reassurance to distant family members (Brown, 2007), when for example one of the members of the family was undergoing a risky operation: *"My mother had to undergo a very risky operation. I was on edge the entire day. I could not focus in any of my classes... I felt awful that I could not be with my family as they waited for the results and when I got the all clear through WhatsApp I felt as if the weight of the entire world was lifted off of my shoulders."* Or, by allowing user's to "be there" for their close ones under restrictive conditions, e.g.:

*"Two months ago I was on a work assignment in Canada, my mom who has diabetes and hypertension suddenly became ill. I was distraught because it was impossible for me to leave my assignment to visit her in the hospital. My sister told me about WhatsApp and how they would allow me to see my mom in the hospital. I was overjoyed when I saw her via the App. I have been telling everyone whom I came across about whatsApp."*

## **Lifelogging**

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Interestingly, we found participants to use *WhatsApp*, not only as a communication tool, but also as a lifelogging tool.

A common practice was the creation of a family group where important life events, such as the first words of a baby, were shared among all family members, e.g.: *"Most cherished moment is when my cousin started to speak and my uncle sent those video clip in which he was saying papa. he was looking so cute and his voice so heart touching."* The tool not only allows users' to share meaningful events but also offers an easy way to store them for later retrieval, which in turn, offers user's the opportunity to relieve significant events of their lives as the previous participant finishes: *" (...) I still have this video in my phone [where the cousin started to speak]; whenever I remember him I just watch those videos again & again."*

This form of lifelogging displays a number of interesting properties. First, rather than being personal, it is a shared corpus, with input coming from different members. Second, its content entails purpose and authorship as it is captured from someone, directed to someone, and shared with a particular purpose (e.g., making one's family feel present in her life). Third, the resulting social interactions that take place around the lifelogs further augment the experience of revisiting the lifelogs and increase one's motivation for doing so. e.g.:

*"During last couple of months back my close friend shared a video about our old high school vacation trip, we almost forgot and completely lost the video clip (...) after viewing the video we could remember every good and bad happening with these guys."*

Interestingly, such lifelogging practices took place even among co-located individuals, attending the same event such as moments of a wedding, e.g.: *"(...) I was in the US and had no leaves to take. (...) everyone in my family group on WhatsApp started sending the videos and pictures of every event and ceremony that was going on. So I was very happy I had such a family group on WhatsApp."*

This practice denoted not only a form of *collective lifelogging*, but also a form of participation to a second thread of the event, unfolding in the online space.

#### III.4.2.4. SATISFYING EXPERIENCES WITH FACEBOOK

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Contrarily to WhatsApp that afforded intimate social interactions, users' most satisfying experiences with Facebook mainly stemmed from its support for expressing one's self, and from supporting their interactions with weaker ties. We also found Facebook to afford *life-logging* practices along with the added value that the accrued metadata (Odom, 2011) brought to them.

##### A stage for self-expression

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Similar to prior work (Urista, 2009), we found a significant part of users' most memorable, satisfying experiences with Facebook to relate to its support for expressing one's self. Features such as personal profiles, allow user's to portrait themselves and share their opinions, beliefs and actions to a large audience on a space fully related to them.

Users' commonly used Facebook to share their life accomplishments *e.g.*: *"When I graduated college, I had a job offer on the table from a big and well known company. I decided to make my "announcement" on Facebook that I'd be accepting the offer - this came with a lot of "likes" and congratulatory messages. It was a pleasing experience!"* or even as a platform to unleash hidden skills, *e.g.*:

*"I uploaded one of my recent drawings on Facebook (...) surprisingly enough I got so many comments and likes from people who were in my friend list. A week after I had uploaded that drawing, some friends of my friends wanted to pay me to draw for them. (...) If I had never uploaded that drawing on Facebook, I'd never known people were so interested in having their ideas/characters/portraits drawn by me".*

They inclusively used Facebook as a medium to publicly formalize occurrences of their lives whether with bad news such as the death of a family member or the beginning of a relationship: *"I recently got incredibly happy when me and my boyfriend decided to make our relationship "Facebook" official. (...) seeing his face and mine on Facebook with the relationship announcement filled me with giddiness. I got even happier when over 20 of my friends "liked" the life event."*

Overall and regardless of the motivation to share their personal information, we've found the resulting satisfaction from the self-expression practice to be generally related with the associated signs of social acceptance such as friend comments and likes, as well as the online popularity they obtained from it, *e.g.*: *"One time I posted a new picture of me. (...) I was dressed very nice. (...) I got over 60 likes. It was the most likes I got from any picture. It was a personal record. It was a great feeling."*

## Social Surveillance

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Interestingly, even though our survey asked for outstanding, memorable events, a significant part of users' experience narratives related to what is often depicted as a mundane daily use practice on Facebook: *social surveillance* - the act of tracking the actions, beliefs and interests of one's acquaintances (Lampe, 2006). In fact, Facebook affords surveillance or passive contact (Lampe, 2006) without any communication or interaction between peers through mechanisms such as the social newsfeed or the users' personal profiles.

We found that this practice would often serve to keep up with life changes in one's friends or to learn new information from shared posts such as health tips and the latest social trends of on the web, or even to stalk on people and compare the life development to those of their acquaintances, *e.g.*:

*"I used Facebook to find out what's going on my friends list and find out what's hot topic for today (...) and to see who posted the stuff that I can apply in my daily life like tips on health and some proverb that my friends posting their statuses. And I love to spy on my colleague on a daily basis to find out what's new in their life so I can tell I have a better life than they have."*

*"A good friend of mine studied abroad (...) It was hard for us to stay in touch (...) I smiled when I saw her looking happy and beautiful, (...) It made me realize how much she had changed, and I felt proud of her and glad I could witness it.", "(...) She had the most amazing photographs (...) she is the only real reason I am motivated to check on Facebook. Seeing where she is and what she is doing in her updates is fun since we no longer live in the same city."*

We further found users' satisfying experiences with surveillance to be associated with social information they have discovered by chance while using the tool: *"One time I saw a good friends baby pictures on there. She lives in another country and I don't speak with her often. Seeing those pictures gave me a great deal of satisfaction."*

Moreover, some user's would go as far as identifying these surveillance random episodes as life-changing, which made them reevaluate their lives and encouraged them to build a new attitude, *e.g.*:

*"My most satisfying experience on Facebook was probably when I saw a close friend who I competed with through high school getting accepted to an Ivy League graduate program. While I was happy for her in some capacity, it stirred a lot of feelings in me and prompted me to reevaluate how my own life was going since college graduation. It gave me fuel to start studying for post graduate tests and enroll in part time classes while I work full time to bolster my transcript and accomplishments."*

## **To find and to be found**

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One of the most gratifying experiences on Facebook, which is not supported by WhatsApp, is the ability to look up for people. This practice came out often as highly rewarding as it provides users' the opportunity to either find new or revive lost connections, *e.g.*:

*"There was a friend of mine who I lost contact with after school times. I missed him very much and searched for information about him and learned that he moved to a distant city. Once while checking out my account, I found his name and picture among suggested friends. This was a great and highly pleasant surprise for me."*

*"I found some cousins on FB that I hadn't met. Ever. It was pretty meaningful to get in touch with family members from South Africa that I didn't even know I had. "*

In the same way that Facebook affords mechanisms to search for connections, it also makes users' available to be found on the network. Similarly to (Hart, 2008), these practices were often associated with highly emotional, serendipitous encounters, and often provided a sense of belonging, when individuals were able to reconnect with schoolmates and others groups from the past, *e.g.*:

*"My friend moved away from my town when we were 10 years old (...) Through mutual friends on Facebook, she stumbled upon my Facebook page and added me. We were able to catch up and become close again after being separated. Without Facebook, I do not think that would have ever happened"*

## **Social capital and interactions with like-minded people**

---

Next, users' memorable, satisfying events related to Facebook's support for interaction with like-minded people. This manifested in a number of ways, such as social browsing - the development of new relationships sometimes with the aim of meeting offline (Lampe, 2007), *e.g.*:

*"(...) when I first poked (...) we both uploaded piano videos and started conversing and ended up hitting it off! We have now been dating for almost six months and we're getting an apartment together in August. It sounds silly, but Facebook has really changed my life. It led me to meeting the girl of my dreams who was always right in front of me. (...) Who knew a website would end up changing our lives forever?"*

Moreover, Facebook supported users' social interactions among like-minded people while leveraging the social capital, both online and offline, through the participation in online communities. Namely, when users would be looking for social support as in health-related communities, when they showed interested in learning technical how-

know (e.g., a community relating to farming techniques), or purely to have an interaction with like-minded individuals that shared the same interests such as the love for dogs, e.g.:

*"(...) being in contact with dog lovers and dog rescue networks. My associates and me will post photo's or stories of lovable, lost or just plain funny" dogmas". Our love of dogs has brought us closer together as friends and helped a community find a pet."*

Finally, a common manifest of this practice, which is not supported on WhatsApp, came through the organization of offline events around activities users' share the same passion with such as nature hiking, e.g.:

*"I've always done hiking and walks through nature (...) I shared some photos on Facebook, and from the comments I realized I had many friends who also shared my passion for hiking. I created an "event" on Facebook and I sent an invitation to all friends who lived near where I live. (...) Now our hiking group is larger and whenever we walk the setting is fantastic. This motivated me to do more hiking, as well as many of my friends who were not used to doing this kind of activities in nature."*

## **Lifelogging**

---

Last, lifelogging practices were often reported as a source for memorable satisfying experiences with Facebook. Similar to WhatsApp, we found the value of Facebook as a lifelogging tool to stem from the accrued metadata on the source material, such as likes, tags, locations and comments (Odom, 2010).

Different from WhatsApp, though, some distinctive aspects on which Facebook facilitated users' to log life events arise. When user's media is shared and kept online, value keeps emerging as the media accrues metadata through time (Odom, 2010). Also, contrary to WhatsApp's restricted environment primarily used with close friends, friends and sometimes family (Church, 2008), Facebook supports broadcasting and interacting with a larger audience which makes user's shared media attainable to accrue metadata even from people out of their close circles. In addition, Facebook media is structured (e.g., in albums and dashboards) and organized chronologically (i.e., timeline) on user's profiles, which provides easy access and revisiting of the material, e.g.:

*My dog of almost eleven years died when I was in high school. (...) It was devastating when she died. (...) my brother uploaded a Facebook photo album dedicated to her. It contained all the of the best photos we had of this dog since she was a puppy, and we were little kids. Looking back on all these photos made me remember and relive all of the good memories I had with the dog. It was very comforting to me (...)*

Finally and Similar to Odom (2010), we found Facebook to support collective reconstruction and revisitation of shared experiences with users' friends and family (e.g., an album of a family reunion shared and kept online where user's would access to tag the members of the family the pictures).

The revisiting of such material was often of high emotional value as in the case of a mother who lost her son and revisited photos of him and others' comments about him: *"My son passed away, and I had an outpouring of support from family members, friends and people that I didn't even know on my Facebook page. I have his pictures saved there and whenever I think about him I usually go to my page and pull them up and look at the comments about him on there. It makes me feel better and reminds of him and how much he is and we are loved."*

### III.4.3. UNSATISFYING EXPERIENCES

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Overall, we gathered 246 unsatisfying experiences from both Facebook and WhatsApp, which we next analyze quantitatively in terms of need fulfillment and affect, followed by their qualitative analyses.

### III.4.3.1. DEPRIVATION OF NEEDS

Table 15 presents the mean ratings for the same 6 candidate needs within the most unsatisfying event. Again, we construe these as deprivation scores, because they represent participants' views of what was missing in the unsatisfying experience. As can be seen, according to these ratings, the primary reason why the listed events were unsatisfying on both Facebook and WhatsApp, was that experiences of *relatedness* were missing.

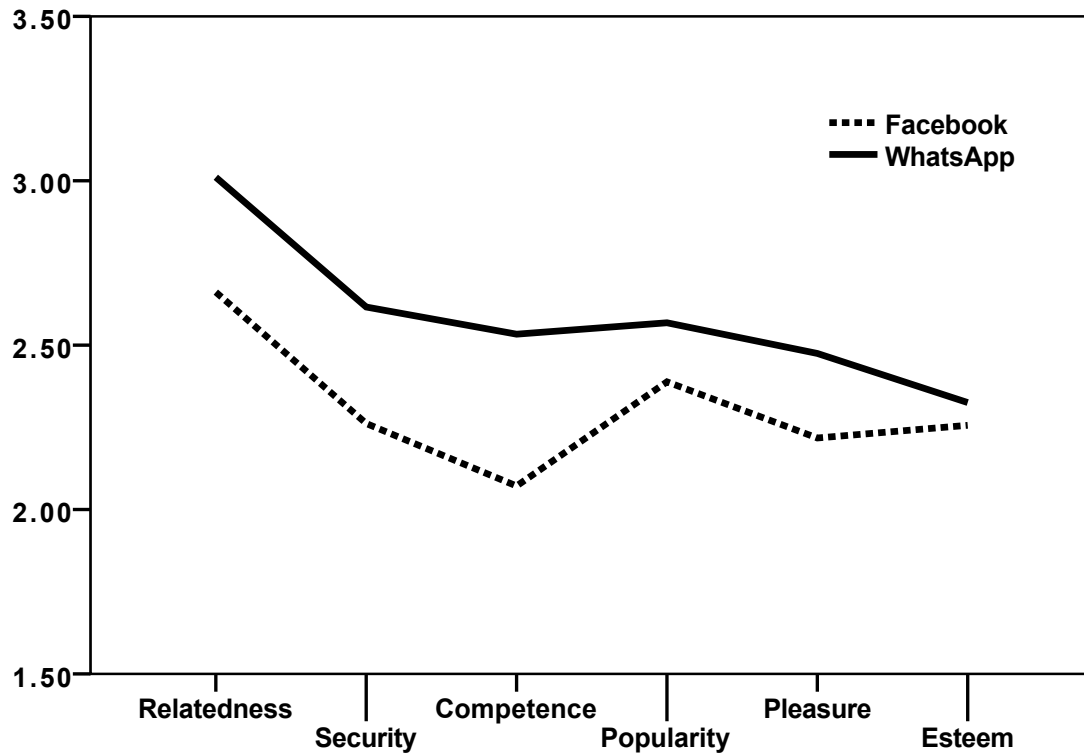
While both social media display relatedness as being the most deprived need, significant differences were found among the tools with respect to *competence*, WA: mean=2.5, SD=1.2, FB: mean=2.0, SD=1.0,  $t(222)=-3.7$ ,  $p<0.01$ , *relatedness*, WA: mean=3.0, SD=1.2, FB: mean=2.6, SD=1.2,  $t(222)=-2.2$ ,  $p<0.05$ , and *security*, WA: mean=2.6, SD=1.2, FB: mean=2.2, SD=1.0,  $t(222)=-2.3$ ,  $p<0.05$ .

**Table 55.** Mean differences in need deprivation scores on Facebook and WhatsApp unsatisfying experiences.

Needs	Facebook Mean (SD)	WhatsApp Mean (SD)
Relatedness	2.66 (1.14)	3.01 (1.14)*
Self-Esteem	2.26 (1.13)	2.32 (1.20)
Competence	2.07 (1.02)	2.53 (1.13)**
Pleasure	2.21 (1.14)	2.47 (1.17)
Popularity	2.39 (1.15)	2.56 (1.22)
Security	2.26 (1.02)	2.61 (1.96)*
<b>Affect</b>		
Negative Affect	2.34 (0.89)	2.40 (0.97)

\*  $p < .05$ , \*\*  $p < 0.01$

The rest of the needs, namely *pleasure*, *popularity* and *self-esteem* didn't reveal significant differences across user's unsatisfying experiences. Figure 6 further offers visualization on the experienced need deprivation in participants' reported unsatisfying experiences with Facebook and WhatsApp.



**Figure 6.** Need deprivation for Facebook and WhatsApp among participants reporting unsatisfying experiences

Next, multiple regression analyses were used to test which, if any, of the needs significantly predicted participants' self-reported intensity of use.

For WhatsApp, *competence* ( $\beta=.34$ ,  $p<.01$ ) and *pleasure* ( $\beta=-.40$ ,  $p<.05$ ) were the two significant predictors of intensity of use, explaining 10% of the variance ( $R^2=.15$ ,  $F(6,112)=3.3$ ,  $p<.01$ ).

For Facebook, none of the needs predicted users' self-reported intensity of use.

Overall these results suggest that while for Facebook no clear root cause of reduced intensity of use is identified, reduced intensity of use in WhatsApp is linked to deprivation of users' need to feel *competence*. At the same, *pleasure* was positively associated with reduced intensity of use, likely indicating users' initial exploratory, non-goal-oriented, interactions with the tool.

Finally, we found users' unsatisfying experiences with WhatsApp were significantly more deprived with respect to *competence*, *relatedness* and *security*, in comparison to those with Facebook.

### III.4.3.2. EXPERIENCED AFFECT DURING UNSATISFYING EXPERIENCES

Table 16 displays the experienced affect in participants' reported unsatisfying experiences. Significant differences are found between the two tools with respect to five items: *enthusiastic*, WA: mean=2.2, SD=1.4, FB: mean=1.8, SD=1.1,  $p<0.01$ , *excited*, WA: mean=2.3, SD=1.4, FB: mean=1.9, SD=1.1,  $p<0.05$ , *proud*, WA: mean=2.1, SD=1.3, FB: mean=1.8, SD=1.1,  $p<0.05$ , and *strong*, WA: mean=2.5, SD=1.3, FB: mean=2.1, SD=1.1,  $p<0.05$ .

**Table 66.** Mean ratings for each item of Affect on Facebook and WhatsApp unsatisfying experiences

	Descriptors	Facebook Mean (SD)	WhatsApp Mean (SD)
Negative Affect (NA)	afraid	2.04 (1.29)	2.07 (1.34)
	scared	1.88 (1.56)	2.02 (1.30)
	nervous	2.10 (1.17)	2.15 (1.28)
	jittery	1.95 (1.18)	2.21 (1.23)
	irritable	2.86 (1.31)	2.94 (1.39)
	hostile	2.32 (1.29)	2.40 (1.36)
	guilty	1.81 (1.14)	2.09 (1.21)
	ashamed	2.08 (1.30)	2.12 (1.30)
	upset	3.25 (1.35)	3.01 (1.38)
	distressed	3.08 (1.30)	2.94 (1.40)
Positive Affect (PA)	active	2.44 (1.26)	2.76 (1.38)
	alert	2.97 (1.25)	3.01 (1.37)
	attentive	3.11 (1.23)	3.00 (1.28)
	determined	2.59 (1.25)	2.65 (1.32)
	enthusiastic	1.76 (1.10)	2.22 (1.42)**
	excited	1.90 (1.14)	2.28 (1.38)*
	inspired	1.86 (1.22)	2.11 (1.37)
	proud	1.79 (1.15)	2.11 (1.34)*
	strong	2.13 (1.10)	2.52 (1.31)*
	interested	2.84 (1.37)	2.77 (1.49)

\* $p<0.05$ , \*\* $p<0.01$

During their unsatisfying experiences with Facebook, users' felt less *enthusiastic*, *excited*, *proud* and *strong* than WhatsApp users with their correspondent negative experiences.

Overall, results suggest that unsatisfying experiences with Facebook lead to lower experience of positive affect than on WhatsApp, at least with respect to enthusiasm, excitement and feeling strong and proud.

### III.4.3.3. UNSATISFYING EXPERIENCES WITH WHATSAPP

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Overall, despite the strongly satisfying experiences participants reported with WhatsApp, we found the use of the tool, and the social practices it affords, to often lead to social exposure, embarrassment and conflicts among its users. The root cause of these negative experiences was often WhatsApp's misfit to the social norms of communication. We describe below some of the most remarkable instances.

#### Changing the norms in real-time communications

---

We found the strength of WhatsApp in affording real time communications to also be a source of unsatisfying experiences.

Most of these unsatisfying experiences were often associated with WhatsApp's ability to display information about other user's availability within the application (e.g., "online" or "last seen"). As WhatsApp altered the norm of availability, it provided limited cues regarding one's availability to respond, often leading to incorrect inferences and conflicts among users, e.g.:

*"Once I was having an argument with my brother on WhatsApp. I was really angry with him (...) the argument was quite heated and I was typing fast and ignoring all other conversations. I was getting lots of notifications from this girl I had gone on a date with the day before (...) She was freaking out because she could see me online and assumed I was ignoring her, thought I was chatting with another girl. I replied angrily and she blocked me. I hated WhatsApp for showing me online even though I wasn't available to talk to anyone else."*

*"The biggest problem I've had with whatsapp is the "last online" feature. My boyfriend has gotten mad at me in the past for not seeing his messages and never looking at my phone. It's quite irritating and sometimes I wish it wasn't a feature because then he couldn't tell that I wasn't looking at my phone when sometimes I don't have it with me."*

In addition, we found WhatsApp to also condition the awareness about other people social context such as a girl that finished her relationship after fighting with her partner over WhatsApp because of the tension she felt by having a group of friends around witnessing the situation, or even to offer limited information about other people current life context which in turn lead to broken expectations and feelings of disappointment, e.g.:

*"One months ago, I had a chat on WhatsApp with my sister. She lives in Egypt, while I live in the United States, and we had not talked for more then six months at that time because of many problems that occurred. I tried to be closer to her and to fix the relationship between us, so I decided to reach to her on WhatsApp. Unfortunately, the response was very unsatisfying when she told me she was busy and not able to chat. I*

*was shocked because I expected her to have the desire to fix problem between us as well as I do. I ended up being disappointed and sad."*

### **Exposing personal content to wrong addressee**

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Usability problems some times lead users to expose private content, such as sending a personal photo to a wrong addressee, selecting a different than the intended video to be shared, or confusing communications during simultaneous chatting, e.g.:

*"I was chatting with my boyfriend and a friend simultaneously. I was also doing some office work on my laptop. Because of my carelessness I sent a intimate message to my friend which was meant for my boyfriend. It was embarrassing and I felt like an idiot."*

Not only doesn't WhatsApp allow a user to reverse these errors, it also leaves her unaware of them, e.g.:

*"When I first signed up (...) I was given the option of having WhatsApp find contacts I may know (...) there was an entry with my boyfriend's first name. I simply assumed it was him and I started sending him lovey-dovey messages. He never responded to a single one of them, which had me a little irritated. After a few days I realized that the person with my boyfriend's first name was not in fact my boyfriend at all. I have no idea who I messaged and I'm afraid it may have been someone else I knew. I feel like I may have embarrassed myself."*

### **Unsolicited group participation**

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Supporting group discussions was one of the frequent sources of satisfying experiences with WhatsApp. At the same time, however, unsatisfying experiences occurred when participants were joined into group discussions without soliciting their approval, or when the system exposed them when leaving a group discussion by letting everyone else know about that, e.g.:

*"(...) once one of my friends added me in a group conversation with other people that I don't want to talk to, and then they started asking me why I am not replying to the group conversation. It was quite irritating that WhatsApp let them get me in the group without asking me first."*

## Monitoring other people

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Last, unsatisfying experiences were frequently rooted monitoring practices and the conflicts these induced. The lack of support for plausible deniability (Lederer, 2004), along with WhatsApp feature that notifies the other party if one is online, often led to conflicts and was remarked by participants as an undesirable feature.

For instance, providing assertive time information regarding the last time one was seen online, enabled the monitoring of one's activities by her contacts, e.g.:

*"I got into this big time argument with my girlfriend because I was online at 4am and she confronted me on the chat asking me why I was online at that hour. IT was quite frustrating because she kept assuming I was holding some sort of secret from her."*

*"This is something which happens everyday. Most of the week my husband is out of town. Normally everyday I chat with him and then we say goodbye to each other. I generally put my mobile down after saying good night (without exiting WhatsApp) and I would continue doing other stuff. It so happens that my status would be still online. My husband will see that and he will ring me immediately asking with who I am chatting. Also I have noted that he never exits WhatsApp after we say good night. He will stay online and keep monitoring me. If I am online he will get angry. This frustrates me so much."*

Another commonly reported undesired feature that stemmed into conflicts was the WhatsApp notification system that reports users the status of a message that has been sent which allowed the recipient to analyze when it has been read and if they were being ignored purposely, e.g.:

*"(...) I was not aware of tick mark significance, One day one of my friend ask me a favor to come to my house and stay that night, I had few guest at my house I wanted to avoid her. I pretended her that I did not receive her message, She was waiting for my response, when I did not respond to her she got annoyed and called me, On asking about why I did not reply to her message, I told her that I did not read it, she got so angry and told me that I she receives 2 ticks after message means it was been read. And she understood that I was avoiding her. In few months she stopped talking to me."*

### III.4.3.4. UNSATISFYING EXPERIENCES WITH FACEBOOK

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We found users' unsatisfying experiences with Facebook to be primarily rooted in content fatigue and exposure to undesirable content through surveillance, as well as, similarly to WhatsApp, Facebook's breach of offline social norms regarding the dissolution of relationships and the exposure of others' identities.

#### **Content fatigue**

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One of the frequent sources of unsatisfying experiences with Facebook stemmed from content fatigue (cNet, 2013).

We found Facebook lack of support when it comes to filter and moderate other people produced content to generate tiredness over their publications such as when heated debates took place prior to political elections, e.g., *"The Presidential election campaign is the most unsatisfying event I have had with Facebook (...) For months, the newsfeed was full of negative political arguments. I made many 'friends' invisible. Seriously toxic climate."*, or when individuals were seen as portraying idealized self-identities or bragging about their lives, e.g.:

*"(...) watching people post things that in a sense seem fake. It seems people post things to make their lives look perfect and basically brag about the things they do. But in a sense it makes others feel like they're not keeping up with life. I try to avoid reading very much on Facebook for this reason...mainly just keep up with the people I'm closest to.... else it will just bring me down."*

*"My brother moved his family to Florida away from the rest of our family. His wife started posting every day about how great life was in Florida and how happy they were with their new friends. It made me feel hurt and betrayed and my mom and I started calling each other to complain about the posts."*

Another common source of fatigue over content stemmed from Facebook's unawareness of user's broken relationships, leaving them to deal with old partners undesired content over the network as the example of the boy who's had a recent break up and was being distressed with pictures of her ex-girlfriend with new boys, e.g.: *"When I broke up with my ex-girlfriend and she began putting up a lot of pictures of her partying and hanging out with new guys. We had agreed not to be petty about our break up, and even try to be friends after some time had passed. I felt it would strange that she would be so passive aggressive about it. (...) I did stop following her on my newsfeed."*

Similar to prior work, we found instances of individuals comparing their life accomplishments to those of their contacts (Chou, 2012), some times leading to diminished life satisfaction and self-esteem (Kross, 2013),

*e.g.: (...) I also became Facebook friends with another former roommate. He is now a VP of a big tech company and when he posts it is usually from an exotic and/or luxurious hotel in a far away location. I end up feeling down about my life and how it has gone.*

## **Surveillance**

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Supporting social surveillance was one of the frequent sources of satisfying experiences with Facebook. At the same time, however, practices of surveillance were often cited as a cause for unsatisfying experiences mainly because of the undesired social information participants witnessed by chance on the newsfeed or in other people's personal profile, which would often affect their opinion and judgment about them. A good example is a participant who discovered his employee had lied to him, *e.g.:*

*"I was unsatisfied when an employee called in sick, then posted on her Facebook about an event that she had gone to that same day - a concert. Obviously she wasn't sick. This made me pretty upset with the individual (...)"*

Moreover, similar to prior work (Mikami, 2010), we found Facebook open nature to often provide ambiguous information that would not otherwise be accessible which in turn exposed users' to potentially jealousy-provoking information, as in the case of a participant that found conversations of his wife with another man on her wall, *e.g.:*

*"I read on my wife's wall her conversations with an old classmate that is male. She was saying some pretty intimate things to this man and when I read them it really pissed me off. I confronted her about it and she assured me the comments were innocent and without any feeling. I still was pissed that she would talk to another man in such a way and have him talk to her in that way. I almost went so far as to divorce her. Even today it pisses me off."*

## **Unfriending**

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The dissolution of friendships, although a common behavior in Facebook (Madden, 2012), was often a source for unsatisfying experiences and diminishing self-esteem, *e.g.:*

*"(...) I am very selective and careful about who I accept (...) or ask to be their friend. I found a female friend who I liked on Facebook and sent a request and she accepted. But as time went on, one day I looked at my emails and had received a message*

*saying that a person has unfriended me on Facebook. I felt like a loser that she unfriended me and made me feel sad."*

Similar to (Sibona, 2011) we found changes in offline relationships to be the primary reason for the online dissolution of a relationship. However, different from offline where the dissolution takes place naturally, on Facebook this required an explicit and definitive act (Sibona, 2011). A common example was when participants ended up offline relationships, but often felt the need to put a final end to them online through the practice of "unfriending" the old partner on Facebook e.g.:

*"I broke up with my girlfriend but remained friends on Facebook. (...) Eventually, I unfriended her so that I would not have to keep thinking about her and waiting for the next post to show up."*

In addition, because Facebook isn't aware of the nature of its users' relationships, participants would take their own measures and purposely "unfriend" other people to avoid them and cease any interaction (Bevan, 2012), e.g.:

*"When the guy I liked started dating someone else. Both he and she were on my friends list. I had to see her post pictures of the two of them together. It was like a punch in the gut. I removed her from my friends list so I didn't have to look at her pictures anymore. Fortunately she wasn't a close friend so I doubt she noticed. He was taking a break from Facebook, but you can delete someone's inactive profile from your Facebook friends, so that's what I did."*

## **Tagging and Untagging**

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Last, a frequent source of unsatisfying experience related to Facebook's lack of a-priori control of one's self-identity. For instance, through tags, mentions and group photo posting, users could breach others' privacy and expose their identities without prior acceptance (Besmer, 2010). This practice often led to conflicts between users, as the case of a participant that had a friendship prematurely broken over misinterpretations brought by a publication a friend made on him. e.g.:

*"I met a girl on Facebook and got close with her. I mentioned this to a friend and he made a stupid post that he tagged me stating how he was happy I had a new girlfriend. The girl eventually saw it and thought I was going around telling people she was my girlfriend when we weren't dating. She thought I was creepy and trying to move forward too fast. We got into a huge argument over it because she didn't believe me when I told her it was just my friend being stupid and being misinformed. We ended up not talking anymore."*

Moreover, the lost control over the self-identity was typically associated with feelings of embarrassment and humiliation as the victimized users were not only exposed to a large network of people but also susceptible to judgment of other people through comments, e.g.:

*"Once my friend posted a pic of me sleeping with a baby cap on my head. There was lot of comments and I was humiliated a lot as a result of it".*

*"I was once tagged in an embarrassing photo a few years ago. This was before I was really Facebook savvy so I did not have privacy options set for me to review things I am tagged in before they can go on my wall and whatnot. So a bunch of people saw a picture of me drunk and acting foolish. I was not happy about it."*

Finally, we found this practice to be particularly unsatisfying when participants would be victims of other people intentionally defaming their identities online. A common example found was when participant's old or current partners would intentionally expose user's relationships issues publicly on Facebook, e.g.:

*"After I broke up with my girlfriend at the time, I asked her to take down all of the picture of us together. She did not. Instead, she posted pictures of us together, and with each picture, came a line of text that made me out to be the bad guy. Each picture clamed I was either inconsiderate, mean, unfaithful and a variety of other stuff. She sent these pics to my friends and family. I was irate. This destroyed any chance I had of being friends with her."*

*"I had an argument with my boyfriend, and he posted the details about it on Facebook. All of his friends commented on it, and so did all of my friends. I got really angry that he would post all the details for everybody to see. It became a source for another fight, with more comments from both sides. We broke up two weeks later. (...)"*

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## IV. DISCUSSION

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### IV.1. WHATSAPP AFFORDING INTIMATE COMMUNICATIONS

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Sherry Turkle (2012) argues that we “*turn to technology to make us feel connected in ways we can control*”. Tools such as Twitter, Facebook and instant messaging, provide us the control over what and how we communicate. But this has an enormous cost: we lose our capacity to communicate in face-to-face where this control no longer exists.

While we agree with Turkle’s (2012) observation, we found WhatsApp to unlock new opportunities for intimate communications that are not present in face-to-face and other synchronous communication channels such as the telephone.

For instance, WhatsApp supported individuals in crafting highly emotional personal messages (as in the case of the father’s message to his daughter), not only removing the interruptions and the social anxiety present in face to face (Valkenburg 2011), but also supporting them in crafting an optimal as well archival communication experience. Likewise, crafting the timing of the message allowed individuals to keep a proximate communication with distant relationships regardless of the other party availability as in the case of the two very close friends that figured out how to nurture their relationship by exchanging intimate voice memos about their life updates at their own convenience and without worrying about finding dedicated time for each other.

In fact, these WhatsApp affordances played a crucial role on shaping some unique and affectionate moments by allowing participants to push the boundaries of their creativity onto crafting complex messages for each other, as the example of a ‘treasure hunt’ engineered between a couple of lovers in which a series of pictures sent at the correct timing would eventually lead the participant to a wedding proposal, that he lately remarked as one of the most memorable events of his life.

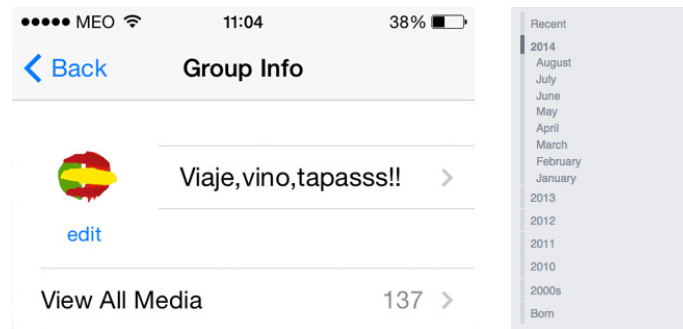
Next, established social practices such as the near-real-time sharing of an event with rich media enabled separated individuals to feel present in important life events, as in the case of the participant’s virtual participation in her aunt’s birthday, which she characterized as ‘feeling real’. In other cases, WhatsApp even allowed individuals to provide reassurance and ‘be there’ for their close ones when for example a distant family member was hospitalized.

In the same vein, despite the absence of non-verbal cues (Mikami, 2010), we found users to experience a heightened sense of presence in communications, likely due to WhatsApp’s restricted environment that afforded single tasking, and user’s building of anticipation as they wait for a response, as well as its capacity for rich emotional expression through smileys, images and voice memos.

## IV.2. SOCIAL MEDIA AS LIFELOGGING TOOLS

Next, although social media has previously drawn attention of the life logging field as important contributors of a growing online personal data overflow (van den Hoven, 2012), to the best of our knowledge, never before has Facebook or WhatsApp use been considered for this purpose.

Yet, we found that besides being used as communications tools, WhatsApp and Facebook afforded practices that highlighted aspects of life-logging and were being used likewise for such end. Contrary to users' emerging photo-taking practices and recent research with the Sensecam prototype that has lead to significant challenges with respect to the access, maintenance and revisiting of the ever-increasing photo collection (Doherty, 2012; Severin, 1997; van den Hoven, 2012), we found the two social media to effectively support users in storing, revisiting and reminiscing about past events of their lives, through organized structures (Figure 7) easily accessible by one or multiple individuals.



**Figure 7:** Dedicated group picture album on WhatsApp (left) and Facebook timeline (right).

Different from traditional lifelogging practices, lifelogging practices on Facebook and WhatsApp entailed a purpose and authorship with input coming from different members, and the resulting social interactions around the lifelogs, through commentaries, likes and tags, would further augment the experience and users' motivation of revisiting the life logs. In fact, we found these accrued, over time, metadata obtained from social interactions, to be often a significant part of the experience to be reminisced, as in the case of the mother that would frequently pull back the comments of support, accrued on the pictures of her lost son, to feel better and remind herself how much they were loved.

Interestingly, we found WhatsApp to afford a practice of collective lifelogging, whereas collocated individuals would capture and share their own perspective of the unfolding event, thus making their contribution to a shared repository but also participating to a second thread of the event, that was unfolding in the online space (e.g.: as in the case of a wedding where a group of family members shared pictures and videos with their distant relatives, as the event took place, on a dedicated group created that purpose).

### IV.3. FACEBOOK IS NOT THAT SOCIAL AFTER ALL

Contrary to WhatsApp, we found users' satisfying experiences with Facebook that related to practices that were not social in nature, such as the act of tracking on other members' lives and beliefs – social surveillance (Lampe, 2007). In addition, WhatsApp revealed new opportunities for intimate communications and provided significantly higher levels of need fulfillment with respect to *relatedness* - the universal need that reflects the feeling of having intimate contact with people who cares for you (Sheldon, 2001).

Even so, because Facebook may have better afforded information gratification through social surveillance, one would expect this to lead to heightened fulfillment of *pleasure-stimulation* (feeling enjoyment and pleasure rather than getting bored - Sheldon, 2001) in comparison to WhatsApp, but this did not happen (Table 17).

**Table 77.** Mean experiences for relatedness, pleasure, self-esteem and popularity on Facebook and WhatsApp satisfying experiences.

Needs	Facebook Mean (SD)	WhatsApp Mean (SD)
Relatedness	4.05 (0.97)	<b>4.29</b> (0.77)
Pleasure	<b>3.51</b> (1.03)	<b>3.59</b> (1.00)
Self-Esteem	<b>3.84</b> (0.89)	<b>3.84</b> (0.98)
Popularity	3.16 (1.15)	<b>3.48</b> (1.07)

Similarly, one would expect Facebook to provide a stronger sense of *self-esteem* and *popularity* through supporting self-expression and leveraging individuals' access to social capital (Burke, 2010; Ellison, 2007). To our surprise, Facebook did not present higher levels of need fulfillment with respect to *self-esteem*, comparing to WhatsApp. And, despite having witnessed through qualitative data that the gratification obtained from Facebook self-expression affordance was generally associated with the online popularity user's obtained from it (e.g.: through signs such as friend comments and likes), our data suggest that the use of WhatsApp leads to a significantly higher sense of *popularity* than the use of Facebook (Table 17).

One possible interpretation might be that people spend much of their online time looking up at other people's lives, that are often reframed and portrayed through a positive lens in broadcasting tools such as Facebook (Barasch, 2014). Such practices have been found to lead to constant or reduced well-being (Kross, 2013) as well as self-esteem, in that individuals compare their lives with the one's from their network and are led to think they are happier and have better lives (Chou, 2012).

## IV.4. UNSATISFYING EXPERIENCES WITH SOCIAL MEDIA

We found a large part of Facebook's unsatisfying experience to relate to content fatigue and exposure to undesirable content, while unsatisfying experiences on WhatsApp primarily stemmed from its breach of offline social norms, such as broadcasting users' context while failing to support plausible deniability (Lederer, 2004). Features that increased others' awareness of the time of one's last logon, current online availability, or whether a message has been read (Figure Y), while conveying a sense of presence and supporting asynchronous communications, also led to incorrect inferences about one's context as well as the monitoring of individuals' behaviors by others. In the same line, users' requested more control when WhatsApp added them to group discussions without their prior approval, or when exposing them when leaving a group discussion (Figure 8). Interestingly, alternative instant message applications do not share such limitations as they often provide control over one's broadcasted context (Nardi, 2000; Grinter, 2002).



**Figure 8:** WhatsApp features that display user context: current status (left); leaving a group chat (center) ; message tick system (right).

One should note, however, that unsatisfying experiences were overall weaker than satisfying ones, despite the strong psychological consequences they had on users, as in cases of public exposure and conflicts the tools induced. For instance, users' self-reported overall need deprivation was low (i.e., three or lower on 5-point intensity scale) and the self-reported intensity of use was relatively high (three or higher on a 5-point likert scale). One possible interpretation for this might relate to the repeating habitual patterns of use that typically characterize users' interactions with these two social media, and that shape an overall positive attitude towards the media (Church and Oliveira, 2013), thus leading to the experiencing of cognitive dissonance (Festinger, 1962) when individuals encounter unsatisfying experiences with the tool. This, if being true, might hint at a second power of habit-forming technologies (Oulasvirta, 2012) and may provide a better understanding of the pervasive nature of social media such as Facebook.

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## V. CONCLUSION

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This Thesis contributes with a thorough report on a study of the experiences and surrounding social practices of 240 Facebook and 254 WhatsApp users. With a focus on recent, outstanding memorable events, rather than typical use which is the focus of uses & gratification studies, we were able to uncover rich and new facets in users' experiences with Facebook and WhatsApp and provide a new perspective to the inquiry of users' experiences and need fulfillment through social media.

### V.1. FINDINGS SUMMARY

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Overall, we found users' satisfying experiences with WhatsApp to derive from its ability to afford intimate communications and support them in crafting desired experiences as well as to make distant individuals feeling present in important life events, while in Facebook they mainly stemmed from its support for expressing one's self and leveraging individuals access to social capital through interactions with weaker ties. Interestingly, we uncover a promising gratification on both Facebook and WhatsApp as we found them to be used as life-logging tools and effectively support it's users in storing, revisiting and reminiscing about past events. We further delve into unsatisfying events and found that unsatisfying experiences on WhatsApp primarily stemmed from its misfit of the social norms of communication, which often lead to social exposure, embarrassment and conflicts among its users. Facebook unsatisfying experiences on the other hand, generally related to content fatigue and exposure to undesirable content.

Next, we found Facebook and WhatsApp to exhibit similar overall need fulfillment profiles, with relatedness, self-esteem and competence, being the three most salient needs, yet manifesting in different ways and through different social practices.

In line with our qualitative findings that showed WhatsApp's unique opportunities to nurture intimate relationships, the tool revealed significantly higher levels of need fulfillment with respect to *relatedness*, comparing to Facebook. Curiously, the same happened for *self-esteem* and *popularity* despite Facebook's support for self-expression and important influence on access to social capital. While a large part of Facebook's satisfying experiences related to social surveillance, we suggest this results to be happening because Facebook is being used to compare to other people lives which often leads to reduced wellbeing and self-esteem mostly because people often portray their lives on a positive lens.

Finally, we found overall users' self-reported need deprivation to be low despite the strong consequences they had on users, which might be related to the repeating, overall positive, patterns of use of these two social media, which in turn leads to the experiencing of cognitive dissonance.

## V.2. LIMITATIONS AND FUTURE WORK

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There are some limitations of the present work, which require some discussion.

Although participants were randomly assigned to report on a single significant experience, either positive or negative, our study offers inconsistent results on the intensity of use, with the participants that reported negative experiences scoring less than those that report positive experiences, for both tools. There is no reason for these two populations to be different and one possible explanation is that when asked to think about a past experience (either a positive or a negative), participants were primed to just think about positive or negative about the tool assigned which in turn might have made them underestimate or overestimate their use intensity. Thus, we can't rule out priming from our self-reporting intensity use results and this should be taken in consideration when inquiring users' about significant experiences.

Next, although we worked with a sufficiently large sample and captured a wide variety of different experiences with both Facebook and WhatsApp, we used a unique channel to distribute the questionnaire which delivered us a sample where 90% of participants had the US or Indian nationality. While the relative salience that people place on certain needs might depend on the extent to which their cultures encourage and support those needs (Sheldon, 2001), other studies should bear in mind differences in need fulfillment within different cultures.

Overall, the work here described presents a methodology that yields valuable data and can be replicated in order to study various aspects of social media tools. Our findings show the great potential of this method for the identification of underlying uses that may debut from the analyses of significant experiences. Namely, we identified life-logging practices as a source of gratifications on both Facebook and WhatsApp, which might offer new opportunities for future study of social media within the context of the life-logging field. In the same line, we unveiled aspects of social media that allow individuals to nurture intimate communications and we alert for the implications that arose from exposure and removing plausible deniability from individuals on these communities. Future work should further examine the interaction between social practices and need fulfillment and have in consideration these findings when designing for social media tools.

Furthermore, the understanding of needs provides a new lens on users' motivations to use social media, and the comparison between their fulfillments on different tools might help to better understand the *why's* of social media adoption. We believe that by further studying the universal needs through user experiences within different social media will help practitioners to understand the intrinsic nature of these complex systems and get closer to explain why some of these systems thrive while others decline.

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# VII. APPENDIX

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## VII.1. SURVEY

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### Qualifying question

Please choose from the following list, the social tools that you **use** or **have used before**.

*NOTE: This is a qualifying step to further refine our audience, only those who meet our targeting audience will proceed.*

- ☐ Facebook   ☐ Google+   ☐ Viber   ☐ Instagram   ☐ WhatsApp   ☐ Twitter   ☐ Reddit   ☐ Vine  
☐ MySpace   ☐ Snapchat   ☐ Skype   ☐ Foursquare   ☐ LinkedIn   ☐ Pinterest   ☐ Tumblr   ☐ Other

### Description

#### UNDESTANDING THE USES OF FACEBOOK

##### INTRODUCTION

This survey attempts to collect information about the uses of Facebook. In particular, we want to understand why users use this community and how their experience develops as they adopt Facebook into their daily lives.

##### PARTICIPATION

We are targeting exclusively participants that use or have used Facebook before.

##### PROCEDURE

You will be asked to complete a short survey about the use of Facebook. The survey consists of **13 questions** and will take approximately 15 minutes or less. Questions are designed to determine your experience and opinions towards Facebook. This survey will be conducted with an online Qualtrics-created survey.

##### CONFIDENTIALITY

All data obtained will be kept confidential and will only be reported in an aggregate format (*the combined results from the study*). All surveys will be concealed and no one other than the primary investigator and assistant researches will have access to them.

##### ABOUT THE STUDY

This study is conducted by Pedro Teixeira, a Msc student at Madeira University, Portugal. For any questions regarding the study, please contact [pedroteixeira07@gmail.com](mailto:pedroteixeira07@gmail.com)

### Demographics Questions

#### What is your gender?

- ☐ Male  
☐ Female

#### How old are you?

#### Country of residence?

### Usage Questions

#### When did you first start using Facebook?

- ☐ Less than 1 year  
☐ Between 1-2 years  
☐ Between 2-3 years  
☐ Between 3-4 years

☐ More than 4 years

**On average, approximately how much time *per day* do you spend using Facebook?**

- ☐ I don't use it anymore
- ☐ 0-29min
- ☐ 30-59min
- ☐ 60-119min
- ☐ More than 120min

#### Unsatisfying Event

**Bring to mind the single most unsatisfying event you have had with Facebook.**

This question will be reviewed before the survey is accepted. To become eligible, your answer should be at least 3 lines length and contain a rich description of a single event that occurred to you while using this tool.

To create your rich narrative, try to describe how and when did it happen, how did you felt and why was this meaningful to you. Take a couple minutes to be sure to come up with a personal meaningful experience and retell the event as accurately and detailed as you remember.

**Below are some examples but you should think of "unsatisfying" in whatever way makes sense to you.**

- "When I found that the karaoke bar I've been a couple months ago had uploaded videos of their clients singing... including my drunk Beyonce act! There was lots of comments making fun and the worst part was when a friend of a friend tagged me and most of my contacts got to see it. It was pretty humiliating and I removed the tag asap."*
- "When I broke up with my ex-boyfriend and he started to post in his wall depressing songs and quotes. I got so pissed off that he made me feel like the villain and couldn't stand all the silly comments to cheer him up from people that didn't knew half of the story. I removed him from my friends list so I didn't had to see him playing the victim."*

**What made this event particularly unsatisfying?**

**During this experience I felt...**

	very slightly or not at all	a little	moderately	quite a bit	extremely
That my choices weren't based on my true interests and values.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I wasn't free to do things my own way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That my choices didn't expressed my "true self".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I wasn't successfully completing difficult tasks and projects.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I wasn't taking on and mastering hard challenges.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

That I wasn't very capable in what I did.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I didn't have a sense of contact with people who care for me, and whom I care for.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I wasn't close and connected with other people who are important to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I didn't have a strong sense of intimacy with the people I spent time with.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I wasn't "becoming who I really am".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I didn't had a sense of deeper purpose in life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I didn't had a deeper understanding of myself and my place in the universe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I wasn't experiencing new sensations and activities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I didn't had intense physical pleasure and enjoyment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I didn't found new sources and types of stimulation for myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That my life wasn't structured and predictable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sad that I didn't have a comfortable set of routines and habits.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I wasn't safe from threats and uncertainties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I didn't have many positive qualities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I wasn't satisfied with who I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I didn't have a strong sense of self-respect.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I wasn't a person whose advice others seek out and follow.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I didn't strongly influenced others' beliefs and behavior.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I didn't have a strong impact on what other people did.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**During this experience, to what extent did you feel...**

	very slightly or not at all	a little	moderately	quite a bit	extremely
interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
distressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
strong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
guilty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
scared	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
hostile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How do you feel about the event?	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
proud	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
irritable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
alert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ashamed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
inspired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
determined	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
attentive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
jittery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
afraid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Approximately, when did this experience occurred?**

- ☐ Last week  
☐ Last Month  
☐ Last Semester  
☐ Last Year  
☐ More than 1 year ago

**How would you describe the influence of this event on your Facebook use?**

- ☐ Not at all influential  
☐ Slightly influential  
☐ Somewhat influential  
☐ Very influential  
☐ Extremely influential

**Using single, easy-to-understand terms, please further elaborate *how* did this event influenced your Facebook usage.**

**The following question concern to your feelings about Facebook.**

With this section we intend to understand the impact the event had on your opinion and feelings regarding Facebook.

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Facebook is part of my everyday activity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am proud to tell people I'm on Facebook.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook has become part of my daily routine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel out of touch when I haven't logged onto Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

for a while.					
I feel I am part of the Facebook community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would be very sorry if Facebook shut down.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you for answering the survey.

We are looking for participants to perform a follow-up interview. Each interview will have an average duration of 10 minutes and all participants will enter into a raffle for a 20£ Amazon UK gift certificate.

If interested, please introduce your e-mail and we will contact you in order to set up the interview.

EMAIL

### Satisfying Event

#### Bring to mind the single most satisfying event you have had with Facebook.

This question will be reviewed before the survey is accepted. To become eligible, your answer should be at least 3 lines length and contain a rich description of a single event that occurred to you while using this tool.

To create your rich narrative, try to describe how and when did it happen, how did you felt and why was this meaningful to you. Take a couple minutes to be sure to come up with a personal meaningful experience and retell the event as accurately and detailed as you remember.

**Bellow are some examples but you should think of "satisfying" in whatever way makes sense to you.**

- "I used to occasionally check my longtime crush profile for news and take a look on his new pictures. I remember being very happy when he changed his relationship status to "single". All his publications that day sounded so sad and I though it could be a chance for me to get closer so I've cheered him up with some funny comments. We never had anything serious but our relationship moved away from Facebook and we got to be very close friends until today."
- "I got into a fitness competition on my gym and they posted some of the pictures on the following day. It felt great to receive a lots of likes even from unknown people and some even wrote great comments about my performance. That motivated me to go to the gym more frequently and I actually made some new buddies there."

#### During this experience I felt...

	very slightly or not at all	a little	moderately	quite a bit	extremely
That my choices were based on my true interests and values.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Free to do things my own way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That my choices expressed my "true self."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I was successfully completing difficult tasks and projects.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I was taking on and mastering hard challenges.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Very capable in what I did.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A sense of contact with people who care for me, and whom I care for.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Close and connected with other people who are important to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

A strong sense of intimacy with the people I spent time with.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I was "becoming who I really am."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A sense of deeper purpose in life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A deeper understanding of myself and my place in the universe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I was experiencing new sensations and activities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intense physical pleasure and enjoyment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I had found new sources and types of stimulation for myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That my life was structured and predictable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Glad that I have a comfortable set of routines and habits.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safe from threats and uncertainties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I had many positive qualities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quite satisfied with who I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A strong sense of self-respect.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I was a person whose advice others seek out and follow.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I strongly influenced others' beliefs and behavior.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That I had strong impact on what other people did.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**During this experience, to what extent did you feel...**

	very slightly or not at all	a little	moderately	quite a bit	extremely
interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
distressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
strong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
guilty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
scared	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
hostile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
proud	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
irritable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
alert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ashamed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
inspired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
disappointed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

determined	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
attentive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
jittery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
afraid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Approximately, when did this experience occurred?**

- ☐ Last week  
☐ Last Month  
☐ Last Semester  
☐ Last Year  
☐ More than 1 year ago

**How would you describe the influence of this event on your Facebook use?**

- ☐ Not at all influential  
☐ Slightly influential  
☐ Somewhat influential  
☐ Very influential  
☐ Extremely influential

**Using single, easy-to-understand terms, please further elaborate *how* did this event influenced your Facebook usage.**

**The following questions concern to your feelings about Facebook.**

With this section we intend to understand the impact the event had on your opinion and feelings regarding Facebook.

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Facebook is part of my everyday activity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am proud to tell people I'm on Facebook.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook has become part of my daily routine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel out of touch when I haven't logged onto Facebook for a while.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel I am part of the Facebook community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would be very sorry if Facebook shut down.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you for answering the survey.

We are looking for participants to perform a follow-up interview. Each interview will have an average duration of 10 minutes and all participants will enter into a raffle for a 20£ Amazon UK gift certificate.

If interested, please introduce your e-mail and we will contact you in order to set up the interview.

EMAIL

# VII.2. SHELDON’S ET. ALL (2001) NEEDS APPENDIX

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## Appendix

### Labels and Conceptual Definitions of Needs Used in the Measure of Individual Differences in Need Preferences in Study 1

1. *Autonomy-independence*: Feeling like you are the cause of your own actions rather than feeling that external forces or pressures are the cause of your actions.

2. *Competence-effectance*: Feeling that you are very capable and effective in your actions rather than feeling incompetent or ineffective.

3. *Relatedness-belongingness*: Feeling that you have regular intimate contact with people who care about you rather than feeling lonely and uncared for.

4. *Self-actualization-meaning*: Feeling that you are developing your best potentials and making life meaningful rather than feeling stagnant and that life does not have much meaning.

5. *Security-control*: Feeling safe and in control of your life rather than feeling uncertain and threatened by your circumstances.

6. *Money-luxury*: Feeling that you have plenty of money to buy most of what you want rather than feeling like a poor person who has no nice possessions.
7. *Influence-popularity*: Feeling that you are liked, respected, and have influence over others rather than feeling like a person whose advice or opinions nobody is interested in.

8. *Physical-bodily*: Feeling that your body is healthy and well-taken care of rather than feeling out of shape or unhealthy.

9. *Self esteem-self-respect*: Feeling that you are a worthy person who is as good as anyone else rather than feeling like a “loser.”

10. *Pleasure-stimulation*: Feeling that you get plenty of enjoyment and pleasure rather than feeling bored and understimulated by life.
- Received June 1, 2000  
Revision received August 31, 2000  
Accepted September 11, 2000 ■

VII.3. WATSON (2001) PANAS SCALE APPENDIX

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Appendix

The PANAS

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent [INSERT APPROPRIATE TIME INSTRUCTIONS HERE]. Use the following scale to record your answers.

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely
	<input type="checkbox"/> interested		<input type="checkbox"/> irritable	
	<input type="checkbox"/> distressed		<input type="checkbox"/> alert	
	<input type="checkbox"/> excited		<input type="checkbox"/> ashamed	
	<input type="checkbox"/> upset		<input type="checkbox"/> inspired	
	<input type="checkbox"/> strong		<input type="checkbox"/> nervous	
	<input type="checkbox"/> guilty		<input type="checkbox"/> determined	
	<input type="checkbox"/> scared		<input type="checkbox"/> attentive	
	<input type="checkbox"/> hostile		<input type="checkbox"/> jittery	
	<input type="checkbox"/> enthusiastic		<input type="checkbox"/> active	
	<input type="checkbox"/> proud		<input type="checkbox"/> afraid	

We have used PANAS with the following time instructions:

Moment	(you feel this way right now, that is, at the present moment)
Today	(you have felt this way today)
Past few days	(you have felt this way during the past few days)
Week	(you have felt this way during the past week)
Past few weeks	(you have felt this way during the past few weeks)
Year	(you have felt this way during the past year)
General	(you generally feel this way, that is, how you feel on the average)

Received May 10, 1987  
Revision received September 14, 1987  
Accepted November 11, 1987 ■

## VII.4. ELLISON ET. ALL (2007) FACEBOOK INTENSITY SCALE <sup>2</sup>

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### Facebook Intensity (FBI)

The Facebook Intensity scale is used to measure Facebook usage beyond simple measures of frequency and duration, incorporating emotional connectedness to the site and its integration into individuals' daily activities. You are free to use the Facebook intensity scale (FBI) as long as correct attribution is used.

Please cite:

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students use of online social network sites. *Journal of Computer-Mediated Communication*, 12, 1143-1168.

### Scale Items

1. Facebook is part of my everyday activity
2. I am proud to tell people I'm on Facebook
3. Facebook has become part of my daily routine
4. I feel out of touch when I haven't logged onto Facebook for a while
5. I feel I am part of the Facebook community
6. I would be sorry if Facebook shut down
7. Approximately how many TOTAL Facebook friends do you have? \*
8. In the past week, on average, approximately how much time PER DAY have you spent actively using Facebook? \*\*

Response categories range from 1 = strongly disagree to 5 = strongly agree, unless otherwise noted.

\*Can be asked as an open-ended (as in Ellison et al., 2007) or closed-ended (as in Steinfield et al., 2008) question. If asked as an open-ended question, Total Facebook friends must be transformed by taking the log before averaging across items to create the scale due to differing item scale ranges. If asked as a closed-ended question, a ten point ordinal scale may be used (e.g. 10 or less, 11–50, 51–100, 101–150, 151–200, 201–250, 251–300, 301–400, more than 400). You may wish to adjust these response categories depending on your population, etc.

Note that earlier versions asked students to distinguish among in-network and total friends. This may or may not be appropriate based on population, site layout etc.

\*\*Can be asked as an open-ended or closed-ended question. If asked as an open-ended question, Facebook minutes should be measured by having participants fill in the amount of time they spend on Facebook. Then the item should then be transformed by taking the log before averaging across items to create the scale due to differing item scale ranges. If asked as a closed-ended question an ordinal scale may be used (e.g. 1= 0-14min, 2=15-29 min, etc). Again, response categories may differ based on population means.

### Computing the Scale

The Facebook Intensity score is computed by calculating the mean of all of the items in the scale.

<sup>2</sup> FBI, "Facebook Intensity Scale" (<https://www.msu.edu/~nellison/TOIL/scales.html>) 2007, last accessed September 22, 2014.

## VII.5. QUALITATIVE NARRATIVES EXAMPLES

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### VII.5.1. SATISFYING EXPERIENCES WITH FACEBOOK

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*I found my brother through Facebook. I have never met him. He is on my biological dad's side and I don't talk to my dad. I hadn't talked to him in about 8 years. It was great to talk to him and we occasionally talk through Facebook. I still have never met him in person, but I am happy for getting to talk to him some, and if not for Facebook I probably never would have talked to him now.*

*When I got into university, I put the obligatory status about it. Within moments I'd got loads of likes and comments from people congratulating me and generally being awesome. It was an amazing feeling knowing that so many people were happy to see me get into university and it was satisfying knowing that I could share an important moment with so many people so quickly, and for them to all be happy.*

*I've always done hiking and walks through nature. Normally I went always alone or with some childhood friends. I shared some photos on Facebook, and from the comments I realized I had many friends who also shared my passion for hiking. I created an "event" on Facebook and I sent an invitation to all friends who lived near where I live. Due to pictures that had previously published many decided to accept the invitation. Now our hiking group is larger and whenever we walk the setting is fantastic. This motivated me to do more hiking, as well as many of my friends who were not used to doing this kind of activities in nature.*

*A friend of mine from high school that I have not spoken with for years recently posted on his Facebook that he had been called up to the majors to pitch for the Cleveland Indians. It was an extremely exciting moment for me, as I come from a very small town, and do not know any famous people. It was inspiring to see everyone from my small town congratulating him on his account.*

*My grandmother passed away several months ago. I wasn't sure how to tell people this - it seemed significant, but a quick "my grandmother died" seemed callous, too vague. But saying nothing seemed even worse. There's really no good, comfortable way to use Facebook to convey bad news. I ended up posting a picture of her from her wedding day, and writing a short (though longer than I had intended) tribute to her. I'm not sure if it was the right thing to do, but it didn't feel WRONG - so at least, that was something. The next morning, I woke up to hundreds of "likes" and comments on my post, from people both offering their condolences, as well as complimenting my writing. It was a very odd, but gratifying, juxtaposition of responses. I was glad I had posted, and it helped, knowing how many people I have in my circles who care about me.*

*I met one of my best friends through a Facebook group. He is the one person I feel comfortable confiding in. We started out as simply being members of a mutual group and began liking and commenting on each others posts. As we realized that we had many of the same interests, we added each other as friends and became even closer. We exchanged phone numbers and often text back and forth and sometimes call. He gave me back my self confidence and I will always appreciate his friendship.*

*A good friend of mine studied abroad in England when we were in college a few years ago. It was hard for us to stay in touch during that time, since she was busy and we were in different time zones. I checked her Facebook page from time to time for updates, and one day I saw she had posted photos of a makeover session with one of her good friends there. I smiled when I saw her looking happy and beautiful, because that wasn't the sort of thing she would have done in the past. It made me realize how much she had changed, and I felt proud of her and glad I could witness it.*

*I uploaded one of my recent drawings on facebook and since I don't have much confidence in my drawing skills I didn't expect anyone to like it. But surprisingly enough I got so many comments and likes from people who were in my friend list. Some even asked me whether I was taking commissions. A week after I had uploaded that drawing, some friends of my friends wanted to pay me to draw for them. Even now, after two years, I'm still earning some pockey money thanks to my art. If I had never uploaded that drawing on facebook, I'd never known people were so interested in having their ideas/characters/portraits drawn by me.*

*I was very nervous about a concert I had a solo in for school. A lot of people were taking pictures and videos which added to my nerves. I made it through the show, and the next morning when I checked Facebook there were a lot of pictures of me with many positive comments about how great my solo was and how awesome the entire show was. It really made me feel good that all the hard work I put in paid off and people liked it.*

*Years ago, you used to be able to do searches on Facebook by clicking one of your favorite books, movies, etc. It would bring up a list of other people who also have it as a favorite. One day, I was clicking on random things, looking for interesting people. After clicking V for Vendetta, I came across a profile of a guy who seemed interesting. I messaged him, and we started chatting regularly. Eventually, we met in person (we went to the same college). We're married now. I get so happy when I think back to that first time I saw his picture.*

*The single most satisfying thing event I've had with Facebook was when I opened my non-profit health helpline Facebook page. I won't get into too much details here, but I've been ill for over a decade. Nothing life-threatening, arguably, but it's something I really had to deal with for a long time, and opening a page on Facebook for people to message and discuss about their own illnesses was a really meaningful event in my life. This page was opened in 2012, and to this day I still get messages from people asking for advice and support.*

*My son passed away, and I had an outpouring of support from family members, friends and people that I didn't even know on my facebook page. I have his pictures saved there and whenever I think about him I usually go to my page and pull them up and look at the comments about him on there. It makes me feel better and reminds of him and how much he is and we are loved.*

*My daughter is a professional dancer. When she first moved to Chicago, I kept in touch with her by phone and kept in touch with what was going on in her life through Facebook. I was so proud to read a posting by her dance company in the Chicago Sun Times where she was featured as a lead dancer. The article was accompanied by a beautiful photo of her.*

*I got on facebook initially because I like to play games. However, I also saw facebook as a good way to stay in touch with family, my adult children and grandchildren. One day I was contacted by my oldest son to friend him. I had not talked to him in years. He had left home angry and had stayed that way. One of the happiest days of my life on facebook is when we reconnected and started to communicate through facebook. This led to me seeing him and hugging him for the first time in many years. We still talk through facebook and share pictures, memories and are rebuilding a positive relationship.*

*It was my wedding invitation page, three years ago. My wife and I made the page together two weeks before our wedding. We invited almost all my friends. We added all the information required to attend our wedding event. We were happy receiving many congratulations from hundreds of friends. They really added a lot to our event. It was actually a good thing to do, and a big motivation for my wife and I to start our new life with enthusiasm and happiness.*

*My most satisfying experience on Facebook was probably when I saw a close friend who I competed with through high school get accepted to an ivy league graduate program. While I was happy for her in some capacity, it stirred a lot of feelings in me and prompted me to reevaluate how my own life was going since college graduation. It gave me fuel to start studying for post graduate tests and enroll in part time classes while I work full time to bolster my transcript and accomplishments.*

*I have always been a very quiet, shy person. Even when my family gets together, I tend to stay by myself, leave a family get together early and sometimes not even attend. With Facebook, I am able to connect with family members that I do not even know well. I can interconnect with my great nieces and nephews, people who hardly know me and now I can chat back and forth with them and get to know them and they learn some things about me.*

*My husband and I moved to a new state and our daughter in law was pregnant with our third grandchild. On the day of the birth our son posted photos from the delivery room so we could see our newly born grandson! It was so exciting and wonderful to see our family in moment by moment photos and know everything was going smoothly. We were able to see the reactions of our son, daughter in law and tons of photos of the baby. I still have those photos on my Facebook page and go back and relive that day from time to time. We couldn't have had that experience in that way and shared it with friends and family in that way without Facebook.*

## VII.5.2. UNSATISFYING EXPERIENCES WITH FACEBOOK

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*I read on my wives wall her conversations with an old class mate that is male. She was saying some pretty intimate things to this man and when I read them it really pissed me off. I confronted her about it and she assured me the comments were innocent and without any feeling. I almost went so far as to divorce her. Even today it pisses m off.*

*When I made friends with someone through an online game. At first she would chat to me often and seemed like a lovely person who had a lot in common with me I used to really enjoy chatting to her. After we had been friends for a while she suddenly changed and began to post nasty comments about other mutual friends. I was shocked and decided to delete her from my friends list and block her from contacting me.*

*My husband was recently involved in the implementation of some governmental, nationwide policies. My mother keeps posting articles and pictures showing how flawed the policy is. I can't comment on any of it publicly, so I look like I'm agreeing with her by not arguing with any of her "facts". It's a frustrating situation and she ignores my requests to stop posting things without checking the facts.*

*I was unsatisfied when an employee called in sick, then posted on her Facebook about an event that she had gone to that same day- a concert. Obviously she wasn't sick. This made me pretty upset with the individual and proves that you should always be careful with what you put on your social media. The employee tried to deny it with me but it was clear that she didn't have her priorities straight.*

*It had to be a ex friend who posted many pictures of themselves bragging about their life. Pictures of themselves at the country club or the food they just ate. It was always about them selves and how much better they are the everyone else.*

*One time I posted an article I found online about crime rates and gun control and how it doesn't work. One of my friends commented on it expressing a different opinion than me and we ended up getting into a debate over the issue in the comments. He got pretty upset over what I was saying and ultimately ended up unfriending me on Facebook because of it. I haven't spoken to him since.*

*It was almost 5 years ago and I was married at the time. I woke up one morning and was having coffee and checking in on FB, when I came across a picture of my then wife hugging and kissing another man. That was the day I discovered she was having an affair and of course it was with her high school boyfriend that she had reconnected with on Facebook!*

*When I attended prom for the first time I found out later that someone had snapped pictures from the after party and had posted them clearly online. My mom was able to see the photos and found out that I had been drinking, even though I was underage. Some of the pictures were decently inappropriate as well and I had to ask the individual to remove them. The pictures weren't removed until too late, though, because almost all of my friends list saw them.*

*When I saw my friends making plans without me on facebook. It was even something that I originally planned to do and they went and did it without me. I was pissed.*

*I made the mistake of posting a negative comment about President Obama and the job he is doing in the White House. I had a few of my Facebook Friends disagree with me. Those friends and I kind of got into an argument about what I posted. A few people un-friended me. I don't talk politics on Facebook anymore because of that experience.*

*I joined Facebook several years ago to connect with extended family I had not seen in years. The family members are very snobbish and stuck up and they immediately started posting things that were designed to make me feel badly not only about the past but about the now. I finally left the family group after three years and blocked all the members of my extended family so I could live in peace and not be bombarded with their drama.*

*I was very upset when I was invited to my friends wedding through Facebook. I couldn't believe that we are so disconnected in a way with social media that people don't even take the time or effort to personalize or send out greetings or invitations anymore. It was disheartening and it made me reevaluate my social media usage.*

*The most unsatisfying experience I have had on Facebook took place in 2012 when all of the political crap was showing up. Distant family relatives and I actually ended up defriending each other because of our differences in political views.*

*After I broke up with my girlfriend at the time, I asked her to take down all of the picture of us together. She did not. Instead, she posted pictures of us together, and with each picture, came a line of text that made me out to be the bad guy. Each picture calmed I was either inconsiderate, mean, unfaithful, and a variety of other stuff. She sent these pics to my friends and family. I was irate. This destroyed any chance I had of being friends with her.*

*My brother moved his family to Florida away from the rest of our family. His wife started posting every day about how great life was in Florida and how happy they were with their new friends. It made me feel hurt and betrayed and my mom and I started calling each other to complain about the posts.*

*I had gone to a bachelorette party last year with a group of friends and coworkers. One of my closest friends was getting married the following weekend, so a group of us got together to celebrate. We had ended up going to a couple of local bars, and ended the night at a piano bar. A majority of the group had Facebook, and were also teachers at a local school district. We had made an agreement not to post any pictures to Facebook in order to avoid any backlash or problems. During the week following the party, pictures were posted by some of the bars that we had gone too. Nothing was too provocative, but they weren't appropriate for a teacher to have on their Facebook. We had to untag ourselves as well as request the user to delete the pictures.*

*I had a guy basically break up with me on Facebook. It was someone I had been seeing for a couple of months, and although we had never said we loved each other or that we were exclusive, I thought our relationship was headed somewhere and we were having fun. He went out of town for a weekend and I didn't hear from him for a few days, so I sent him a Facebook message and asked him if we were still on for our usual weekly trivia game, and he sent a message back saying he had started to date someone else and hoped we could still be friends! I was mortified to be dumped online!*

*I stumbled across a coworkers facebook account. On it I saw a photograph of him fooling around with some employees at a catering event he supervised that was held off site. in the photo, he was lifting an employee up, carrying him on his shoulders. This event occurred during a time he was on light duty for a shoulder injury. I called him out on it. He actually got defensive, said it was none of my business. He was fired. the entire thing left a bad taste in my mouth.*

*When two of my friends aired their dirty laundry for all to read. They had a horrible name calling posting match. Then they preceded to post very demeaning photos of each other. It was very embarrassing to have that mess appear for so many others to see.*

*I've posted charity link on my wall and to my surprise I got a lot of hateful comments. People who I thought were reasonable and had some empathy, were questioning my motives, looking for financial link between me and the charity organization, trying to look for causes that (in their opinion) were more worthy. The whole experience was quite and left me depressed. I stayed away from Facebook for a while but eventually it lured me back.*

*When my fiance and I broke up, after me struggling for a year to make it work, he posted a lot of "pity me" posts on his wall. We have a lot of mutual friends, so even though I wasn't looking at his page, I was hearing about it every day. He posted pictures of us. Sad songs. And he had made a list of people (guys) on my friends list and stalked their pages looking to see if I was talking to them. I wasn't. It was so irritating to have that link to him. I wish I could just delete every exchange we ever had.*

*A good friend of mine's father was arrested and charged for a crime. It blew up all over social media website, and many people spoke bad of him. He claimed he was innocent, but people did not believe him. His case went to court, where he was found not guilty. Although he was not ultimately found guilty, many people still shunned him and spoke unkindly about him behind his back.*

*When I saw my uncle had posted on my wall "Congratulations on your pregnancy". The reason this was unsatisfying is because I was not pregnant. My sister was pregnant. My husband and I have had trouble conceiving a child so this just really upset me that he posted it for everyone to see. I deleted the post as soon as I saw it but a few people had already seen it and also started congratulated me. I felt absolutely horrible and am still mad at my uncle to this day.*

*A friend of mine upload a video of me competing on a rap battle site. It was a few minutes worth of me and another guy going back and forth insulting and dissing each other in a lyrical art form. My supervisor at work and I are both mutual friends of the guy who uploaded the video. Even though he knew I sometimes partake in such competitions it was kind of embarrassing knowing that he seen it and shared it with a few other people.*

### VII.5.3. SATISFYING EXPERIENCES WITH WHATSAPP

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*My cat has never really liked anyone but me. My sister used Whatapp to show me my adorable kitty snuggling up to her while I was away on vacation. That is the first time he has allowed anyone but me to pet him and it made me feel so much better. I was able to enjoy my vacation much more once I knew he was okay.*

*This year I had applied to medical school, and I was pretty down and out. My interviews had not gone so well, and I knew since I had PhD. I was going to be considered last for most of the spots. My dad and mom sent me a voice message before I opened my MATCH file that told me they were very proud of me and no matter what happened they were proud of me. It made me feel so much better about opening my MATCH letter to find out if or where I was going to go to medical school at.*

*Last year when I am away from my home on an urgent official duty i missed my brothers marriage But with whatsapp I almost enjoyed all the functions same movement. My sisters send all updates on same time. And also I participated some games on previous day functions. Thanks to whatsapp.*

*The most beautiful moment I had with WhatsApp was when my girlfriend expressed her willingness to commit herself in a relationship with me. She sent some beautiful smileys and a selfie photograph of herself in the most gorgeous dress possible. That was the moment I loved the app for being so helpful in times of real need.*

*The most memorable event for me would be when my son brought me a new car and the surprise was that he went to the dealer and sent me the picture through whatsapp after selecting the car. Nobody informed me about this before and i also didn't believe it first at all. But when he came home with the car, i was like a statue just looking at the car.*

*Most cherished moment is when my cousin started to speak and my uncle sent those video clip in which he was saying papa. he was looking so cute and his voice so heart touching. Still i have this video in my phone whenever i remember him i just watch those videos again & again.*

*It was a rainy day around an year ago, when the girl was dating sent me a picture of the place i was heading too. She keep sending me the different pics of places which were in the way to my destination. When i reached the place she sent me the roses and was standing there with the bunch of roses in person. I proposes her that day. Probably the best thing that ever happened to me.*

*During last couple of months back my close friend shared a video about our old high school vacation trip, we almost forgot and completely lost the video clip but an anonymous friend founded it in his archives and shared it with us. The importance of this video was our closest and dearest two of ours lads was dead in a accident after that vacation shortly, after viewing the video we could remember every good and bad happening with these guys.*

*Every year my friends used to celebrate my birthday. But for my last birthday i was out of station for on site project. And I was worrying a lot that I am missing all the fun for this birthday. But, surprisingly sharp 12 o'clock i received a video from one of my close friend. I felt very happy after seeing that video. Because, all my friends celebrated my birthday by cutting cake, and wished me by the video. That birthday was very special to me ever.*

*After my high school Its been 7 years, I didn't happen to see my friends after the high school. Although they were my facebook friends but the connection between them was lost. But when I started using WhatsApp, I found out that there's a group created on behalf of my High school batch and when I joined in the group it was like before when were in Highschool days...lots of funny comments, lots of comments without limit and freedom to express ourselves as high school guys..*

*First thing it comes to my mind is this one fine time my husband surprised me by presenting a watch which has a gold strap with diamond stones and he sang a beautiful song for my birthday and I have recorded it. That is the amazing moment in my life and I really wont forget those lovely moments. I love my husband.*

*Two months ago I was on a work assignment in Canada, my mom who has diabetics and hypertension suddenly became ill. I was distraught because it was impossible for me to leave my assignment to visit her in the hospital. My sister told me about WhatsApp and how they would allow me to see my mom in the hospital. I was overjoyed when I saw her via the App. I have been telling everyone whom I came across about whatsapp.*

*I was feeling down pretty bad after several person issues had arisen in a short period of time. My girlfriend knew about what was going on for quite a while and wanted to help. With my birthday coming up, she had a sketch portrait of my deceased father commissioned and instead of waiting to show it to me in person, she sent me a picture of it with a voice recording telling me how everything was going to be okay and as long as she was in my life, nothing bad would happen.*

*This May, I was able to follow my best friend's graduation party who lives overseas via WhatsApp. I was sad I didn't get to be there physically due to financial reasons and she promised me she'd share as much details about the event as possible and she did. I was able to see videos of her receiving her diploma, video of her sitting with other graduating candidates and I also was able to see how her party was afterwards*

*My sister was planning a wedding last year. She wanted to get married in July in North Carolina. But before the wedding my great uncle got sick and couldn't travel. He's always been like a father to us, and everyone wanted him to be there. We hoped he would get better but as the months went on, his condition deteriorated. So I used Whatapp to make my uncle feel like he was at the wedding. He didn't know how to use it but his nurse did. So I sent him a combination of photos and videos almost every 2 minutes. And created a family message for him. I used it throughout the entire event, and the reception too. It meant so much that he was able to be there, and enjoy it with us. Even though he couldn't travel. A*

*When my husband and my son moved ahead of me out of state, they had been gone for a couple of weeks and I began to miss them so much that I couldn't talk to my son on the phone without crying. My husband surprised me one day with a voice message from my son saying hi to me and that he loves me. This began a tradition until we could be together again.*

*I have a friend who recently re-located to the middle-east a couple of months ago. Him and me being best buds; we were missing out on a lot of things. My friend and I have always been great fans of video games and comics and such stuff. I never got a chance to go to Comicon and Gamescon but a few months ago he got the chance to visit Comicon and he shared all the videos and pictures from comicon via WhatsApp to me as he went through it. I think this was the most satisfying moment I had with WhatsApp*

*My brothers and I were all on vacation in New Orleans, but we have varied interests, so we went off on our own a lot. I sent pictures of the sculpture garden to them and they sent me pictures of the various places they went to. It was great to have a shared experience in the same city without having to be there for every moment. I really felt connected to my brothers because of that.*

*A few weeks ago I was in San Francisco hanging out by the Bay Bridge when an old friend IM'd me on my phone with WhatsApp and told me she was in the same area. After she described where she was we got in touch and went out to eat. It was really cool and wouldnt have been possible without WhatsApp.*

*I was friends with this one girl but we didn't know each other very well. We'd talked just a few times, and I wanted to get to know her better. Well, one day she asked if I had WhatsApp, and I didn't, but I told her I'd download it and we could talk there. For whatever reason, we got into a really heavy conversation about our lives, goals, dreams, all the big issues. It was really nice to be able to have that kind of deep, meaningful conversation with her and I learned a lot about her. It made me feel that there really are amazing people out there.*

*In mid February of this year, my best friend messaged me a picture of herself standing in an airport, smiling and giving a thumbs up. This was significant because she had been trying for months to get approval from her school to study abroad in Germany. I knew this picture meant she had finally gotten permission and had her financial aid in order. I was so happy for her, because I knew she had been planning this for quite a long time and dreaming of what it would be like to experience new cultures.*

*The most satisfying time I had on whatsapp was last week when I took my son to the park. He is three years old and I was able to capture his first success on his bicycle and the cute things he said on video. WhatsApp enabled me to send the video for free to family members abroad. It felt great to show him off so conveniently to others who wouldn't have seen otherwise.*

#### VII.5.4. UNSATISFYING EXPERIENCES WITH WHATSAPP

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*I was chatting with my boyfriend and a friend simultaneously. I was also doing some office work on my laptop. Because of my carelessness I sent a intimate message to my friend which was meant for my boyfriend. It was embarrassing and I felt like an idiot. My friend new about my boyfriend and it was easy for me to make him understand my mistake.*

*This happened a few weeks ago. I was working on a big project at work and didn't have a lot of time to finish it. A close friend of mine have send me a message. I saw the message but did not reply because I was too tired and went to bed. The next day I forgot about it and because of the fact that he can see my activity on the app he was under the impression that I chose not to respond although I saw the message. I finally explained everything but he was angry with me for a while.*

*One months ago, I had a chat on WhatsApp with my sister. She lives in Egypt, while I live in the United States, and we had not talked for more then six months at that time because of many problems that occurred. I tried to be closer to her and to fix the relationship between us, so I decided to send to her on WhatsApp. Unfortunately, he response was very unsatisfying when she told me she was busy and not able to chat. I was shocked because I expected her to have the desire to fix problem between us as well as I do. I ended up being disappointed and sad.*

*One of the most unsatisfying event in whatsapp was, "the whatsapp app will always show online whenever there is internet connection. There is no way to go offline while using internet. Whenever I was chatting to one of my friend, the entire whatsapp will be online to my entire friends. Due to this problem, a fight arise between me and my girlfriend, She messaged me at a time, but I didn't reply her due to other conversation between my friends. But for my girlfriend, the whatsapp shows that I was online, she asked me, "you was online, but not replying to me" so the fight came between us. This was the most unsatisfying event that I had with whatsapp.*

*One time I was messaging my girlfriend who was in Canada for vacation at the time and we used WhatsApp as a way to communicate. I remember having a conversation with her through the app and I asked her a question. I saw that she read the question but did not respond. I was worried and a little upset that she was able to read the message but did not respond at all.*

*I got into this big time argument with my girlfriend because i was online at 4am and she confronted me on the chat asking me why i was online at that hour. IT was quite frustrating because she kept assuming i was holding some sort of secret from her.*

*It was when I pasted a message containing one filthy joke to a group that contained my entire family members. That was the worst day for me personally as I had a big time fight with my mom and my cousins of whom I was very close with. It was only after I convinced them that my friend had apparently trying to play a prank and that had gone bad than he had anticipated. It was really an eye opener and I have always kept my phone on lock with pin ever since.*

*I used to chat with my boss when ever we are away from our office. It is not allowed to be engaged on any online application while at work. My boss has noticed an occasion when I was online during office hours and he started to question me about this. This happened as I had an important interview in WhatsApp. But the boss was arguing that I was online for more than 3 hours.*

*The most frustrating and unsatisfying experience that I encountered when using WhatsApp was when I was confronted by my now ex-boyfriend for ignoring his messages. Since I didn't have the push notifications feature set up on my phone, I wasn't seeing that he was messaging me when he was studying abroad. Because of data rates while abroad, WhatsApp was our primary form of communication. I had been very swamped at work and didn't have the opportunity to be constantly checking the app that wasn't conveniently available at the time. As a result, we ended up getting into a huge argument and decided that it would be best for him to e-mail me first to tell me to sign on to the app when he wanted to talk to me. I was very frustrated that he felt that I was ignoring him.*

*I was busy reading a very interesting novel when my husband sent me a message asking me what I was doing. i did not want to respond to him because he has the habit of sending me message after message when is on business and is free. just because it is free he loves to send me messages. i cut him short and he got upset.*

*I was housesitting, and using whatsapp to communicate with the home owner. We were using WhatsApp because she could use it for free while traveling internationally. I had priority questions about the plumbing and I texted them to her. I had to wait several hours for a response. After about three hours point the message showed that she read it, but she still hadn't responded. I got a response about 6 hours later.*

*2 years back when i started using whats app i was not aware of tick mark significance, One day one of my friend ask me favour to come to my house and stay that night, I had few guest at my house i wanted to avoid her. I pretended her that i did not receive her message, She was waiting for my response, when i did not respond to her she got annoyed and called me, On asking about why i did not reply to her message ,i told her that i did not read it, she got so angry and told me that i she receives 2 ticks after message means it was been read. And she understood that i was avoiding her. / Fow months she stopped talking to me. /*

*I have a friend who works odd hours at a grocery store. He stocks the shelves at night while everybody else is asleep. So, whenever he's on break at work, he sees me on WhatsApp and starts sending me messages, usually waking me up from my sleep. A few weeks ago, I came into work with red eyes and could barely stay awake because he kept IM'ing me all night. Now, I've gotten to the point where I turn the volume off on my phone before going to sleep, just to keep people from bugging me.*

*I guess the most frustrating time was when the app said a few of my friends were online and I sent them a group chat only to not get responses from any of them. It was around early evening, maybe 8pm or so. I was hoping to have a discussion with friends but they later told me they weren't online or were busy. I was upset with them for not responding for a while, but after their explanation I wasn't sure who to believe.*

*I was on a hiking trip and contrary to my girlfriends beliefs there is neither cell service nor wifi at the top of a mountain. On the descent I finally got signal again only to be deluged with berating messages about how I'm not answering her. I explained I was where I told her I would be, on a mountain, and she still wasn't satisfied with my responses. It was rather frustrating and an off-putting situation to be in.*

*Once I was having an argument with my brother on WhatsApp. I was really angry with him because of something that happened at an earlier family meeting. The argument was quite heated and I was typing fast and ignoring all other conversations. I was getting lots of notifications from this girl I had gone on a date with the day before and it was annoying that should would keep messaging me even though I wasn't replying. She was freaking out because she could see me online and ignoring her, thought I was chatting with another girl. I replied angrily and she blocked me. I hated WhatsApp for showing me online even though I wasn't available to talk to anyone else.*

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