

1-1-2010

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Recommended Citation

Krasnova, Hanna; Koroleva, Ksenia; and Veltri, Natasha F., "INVESTIGATION OF THE NETWORK CONSTRUCTION BEHAVIOR ON SOCIAL NETWORKING SITES" (2010). *ICIS 2010 Proceedings*. Paper 182.
http://aisel.aisnet.org/icis2010_submissions/182

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INVESTIGATION OF THE NETWORK CONSTRUCTION BEHAVIOR ON SOCIAL NETWORKING SITES

Completed Research Paper

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Abstract

By enabling connections between individuals, Social Networking Sites, such as Facebook, promise to create significant individual as well as social value. Encouraging connections between users is also crucial for service providers who increasingly rely on social advertising and viral marketing campaigns as important sources of their revenue. Consequently, understanding user's network construction behavior becomes critical. However, previous studies offer only few scattered insights into this research question. In order to fill this gap, we employ Grounded Theory methodology to derive a comprehensive model of network construction behavior on social networking sites. In the following step we assess two Structural Equation Models to gain refined insights into the motivation to send and accept friendship requests – two network expansion strategies. Based on our findings, we offer recommendations for social network providers.

Keywords: Social networks, Social ties, Structural modeling/Structural equation modeling (SEM), Grounded Theory

Introduction

Social Networking Sites (SNSs), like Facebook or StudiVZ, are popular platforms that enable users to create profiles and link to others (Boyd and Ellison 2007). More than 400 million users are currently active on Facebook. With an average user having 130 SNS ‘friends’ (Facebook 2010a), SNSs are all about making connections. Social ties created on these platforms promote socialization, satisfy individual need for belonging, as well as desire to get updated and entertained (Krasnova et al. 2008; Rosen and Sherman 2006). Furthermore, by establishing their social presence online, SNS users create a playground for self-presentation and identity expression (Donath and Boyd 2004).

Beyond individual benefits, ability of SNSs to facilitate links between individuals from various backgrounds has a potential to create social value. Ellison et al. (2007) show that by allowing users to gain enhanced access to resources provided by the members of their networks, SNSs can help reverse the trend of diminishing social capital (Putnam 1995) and thus make a significant contribution to the modern society.

From the perspective of an SNS provider, encouraging network expansion and connectivity between users is crucial for the success of viral marketing campaigns. Social ads, which take advantage of a user’s friends as a basis for targeted advertising, constitute an important backbone of Facebook’s business model. A simple example is sending a movie preview to friends of a user, who has recently become a fan of a certain movie page on Facebook (Smith 2007). Following this lead SNS providers are doing their utmost to encourage more links between their members by, for example, placing suggestions to add friends on the sidebar of the user’s profile or giving users an opportunity to import ‘friends’ from Email and IM contact lists (Smith 2009a).

Given the importance of SNS-enabled social connections in creating individual and social value as well as supporting platform sustainability, it is especially pertinent to understand the factors that play a role in the process of individual network formation. To address these issues this study seeks to answer the following research question: *How do SNS users construct their networks?* Differentiating between available approaches to the network building behavior we are particularly interested in *individual motivation to accept a friendship request (FR) as well as send one.*

Related Work

A multitude of theories (e.g. social exchange theory, theory of the social organization of friendship ties, equity theory, attachment theory) seek to explain how and why friendships and social ties are formed offline. For example, it is suggested that social position plays a significant role in friendship choice (Hallinan 1978/1979; Rainio 1966). Another popular explanation is a principle of social homophily according to which people are more likely to associate with others who are similar to them than with those who are different (McPherson et al. 2001). Overall, most of the existing body of literature focuses on offline friendships. At the same time the analysis of computer-mediated relationships – ‘friending’ - might reveal different dynamics.

Whereas offline friendship is rooted in mutual recognition, sympathy and appreciation (Wright 1978), ‘friends’ in the context of SNSs refer to “*all articulated relationships, regardless of intensity or connection type*” (Boyd 2010, p. 94). A number of studies offer insights into the *structure* of individual social networks online. In these studies existing offline friends are often contrasted with new online acquaintances – ‘strangers’ (Boyd 2010; Pempek et al. 2009; Thelwall 2008). For example, Pempek et al. (2009) find that students are mainly utilizing Facebook to connect to friends that they have a *pre-established offline* relationship with. At the same time, Madge et al. (2009) report that incoming freshmen use SNSs as means of making *new* friends at the university before actually moving there. In this context it becomes crucial to understand the reasoning behind user behavior of adding existing vs. new ‘friends’, since presumably diverging motivating mechanisms are in place here.

Apart from acknowledging that users differentiate between various degrees of familiarity when adding others to their friends’ lists, existing research offers only mixed and mainly qualitative insights into *why* a particular person is integrated into one’s online network. Donath and Boyd (2004) argue that users may add ‘friends’ for the same trivial reasons as they add others to their address-books: to have an easy access to contact details. Looking through a socio-psychological lens, Boyd (2010) stresses the importance of such incentives as impression management and self-presentation. Furthermore, Ellison et al. (2007) find that users can accumulate social capital by the virtue of being connected to a wider range of people on SNSs. For example, by communicating with a closely-knit circle of friends

a user can gain emotional support, whereas a loose network of ‘weak ties’ may provide her with useful information and perspectives (Donath and Boyd 2004; Ellison et al. 2007; Granovetter 1973). As a result, expectations about these outcomes may motivate users to expand their networks.

Investigating the impediments to online relationships, Lewis and West (2009) underscore the negative role of privacy concerns in ‘friending’ decisions. At the same time Boyd (2010) argues that reliance on privacy controls may mitigate this privacy-related anxiety and thereby motivate articulation of ‘friendships’.

Looking beyond individual motivation, Livingstone (2008) argues that platform culture and social norms regarding ‘friending’ underlie individual behavior, inducing users to constantly negotiate “*over what is socially appropriate*” (Boyd 2010, p. 95). Moreover, besides complying with universal social norms present on the platform, which generally favor sending and accepting behaviors, some users may feel pressured to accept a FR not to appear rude to the sender (Boyd 2006).

Summarizing, even though previous studies offer a number of insights into the network construction behavior there are several gaps which need to be addressed. First, existing research offers only scattered insights and no study exists, to the best of our knowledge, investigating the process of network building in a comprehensive way. Second, most findings are too general and reveal no details of the ‘friending’ dynamics. For example, whereas one factor may be particularly relevant in adding a good acquaintance, it may play no role whatsoever when a user has to handle a FR from a ‘stranger’. Third, most of the findings are of qualitative nature and hence mainly advance “*conjectures rather than [present] testable evidence*” (Thelwall 2008, p. 1321). Aiming to address these shortcomings, our study consists of *two parts*. In the *first part*, we use Grounded Theory approach to analyze qualitative data obtained through interviews with Facebook users¹. A comprehensive framework of ‘friending’ behavior on Facebook emerges as a result of this analysis. Building on the qualitative results, in the *second part* we test two causal models which aim to deliver empirically validated insights into individual motivation to accept and send FRs to people with various degrees of familiarity.

Qualitative Study

Research Method: Grounded Theory

Taking into account underexplored nature of our research question, we use Grounded Theory methodology to obtain initial insights into the dynamics of the network construction behavior. Application of Grounded Theory (GT) is rooted in the iterative comparative analysis during which data and emerging theory are routinely compared for validity (Seidel and Recker 2009; Strauss and Corbin 1990; 1998). This approach helps researchers to analyze available data systematically and uncover the underlying relationships in the data. Qualitatively validated insights obtained on the basis of this approach can then be verified with other methods.

Data Collection and Sampling

When using GT approach, data collection goes hand in hand with data analysis (Glaser 1992). For this reason interviews – the source of our qualitative data – were conducted in two stages. In the first stage, two trained interviewers asked respondents (all students, aged 20-25, 7 male/1 female, different cultural backgrounds) a number of open-ended questions about their behavior with regard to handling FRs, for example: *What influences your decision to accept a FR?* In order to approximate the interview situation to the real Facebook experience as well as provide ground for discussion, respondents were additionally offered 8 paper-based Facebook profiles of unknown people. Respondents were asked to comment on each profile with regard to the *likelihood* with which they would accept or send a FR to the suggested ‘friend’. These eight interviews of 25 minutes each were analyzed in order to generate preliminary hypotheses as recommended by Glaser (1992). Insights obtained in stage 1 served as a basis for extended follow-up interviews, which were conducted by 2 authors of this study until *theoretical saturation* was

¹ Strauss and Corbin (1998) argue that a researcher should try to refrain from reviewing available theory before working with qualitative data. Authors of this study have previously focused mainly on privacy-related constructs in their past research (identifying references) and did not have strong theoretical knowledge in the area of SNS ‘friending’. Thus, in compliance with these requirements, this section was written only after relevant constructs have emerged from the qualitative data.

achieved. Eight resulting interviews lasted between 45 and 60 minutes and included elements of observation, as respondents (all students, aged 20-25, 4 male/4 female, different cultural backgrounds) were asked to login to their Facebook accounts and perform their usual actions while the interviewer was asking questions regarding their actions and experiences. For example, once a respondent entered her contact list, she was asked to comment on the structure of her network. This reduced possible deviations related to distorted recall of one's behavior. In order to ensure that a respondent naturally starts commenting on her behavior regarding FRs, each respondent was sent 2 FRs as arranged by the authors: one FR was from a person the respondent was likely to see in college, but did not personally know (often mutual friends were present) and the other one was from an unknown person. All interviews were video-recorded, transcribed and analyzed using a specialized software atlas.ti 6.1.1. The coding was done by the two authors of the study in order to ensure consistency of emerging concepts.

Data Analysis

We pursue the 'Straussian' line of GT which allows for prior knowledge of the phenomenon in question as well as formulation of the research question, requires absence of an a-priori theory and uses a paradigm model (Matawire and Brown 2008; Seidel and Recker 2009; Strauss and Corbin 1990; 1998). In their approach Strauss and Corbin (1990; 1998) differentiate between 3 stages of data analysis: *open, axial and selective coding*. The process of *open coding* involves identification of initial codes (concepts) by looking for patterns in the data through the process of constant comparison, which then serve as a basis for higher-level categories (Strauss and Corbin 1990; 1998). The following quotation provides an example of an open coding in our study: "*I think, it is good to stay in contact (staying in contact). It is just for convenience (convenience of social interaction) ...and it might even somehow help to substitute things like couch surfing (getting accommodation)..." (interview quote Q)². In the next step, multiple concepts identified during open coding were combined into higher-level categories. For example, the category "Feeling of Personal Obligation" united the following codes: "*social pressure*", "*don't want to offend*", "*feeling of an obligation*", "*feeling guilty*", "*being nice*", "*don't want to be rude*". The next stage of our analysis – *axial coding* – was dedicated towards grouping of categories into families and uncovering the relationships between resulting categories and subcategories at their respective dimensional levels. The coding paradigm by Strauss and Corbin (1990; 1998) helped identify emerging relationships and served as the basis for our conceptual framework. Examples of axial coding will be provided throughout the study. In the following stage of *selective coding* we systematically related a core category - our phenomenon '*handling friendship request*' - to other categories as well as condensed several categories to bring concepts to a higher level of abstraction.*

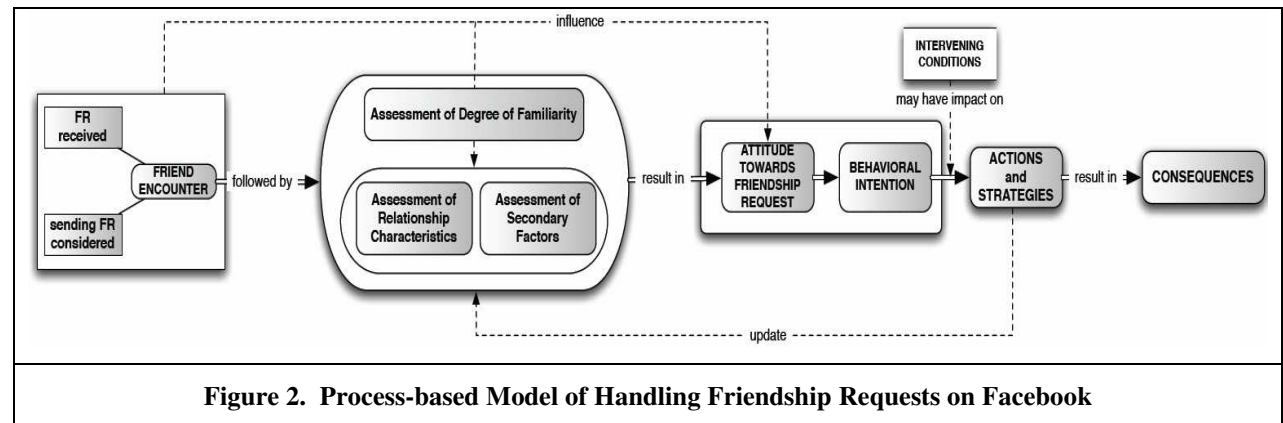
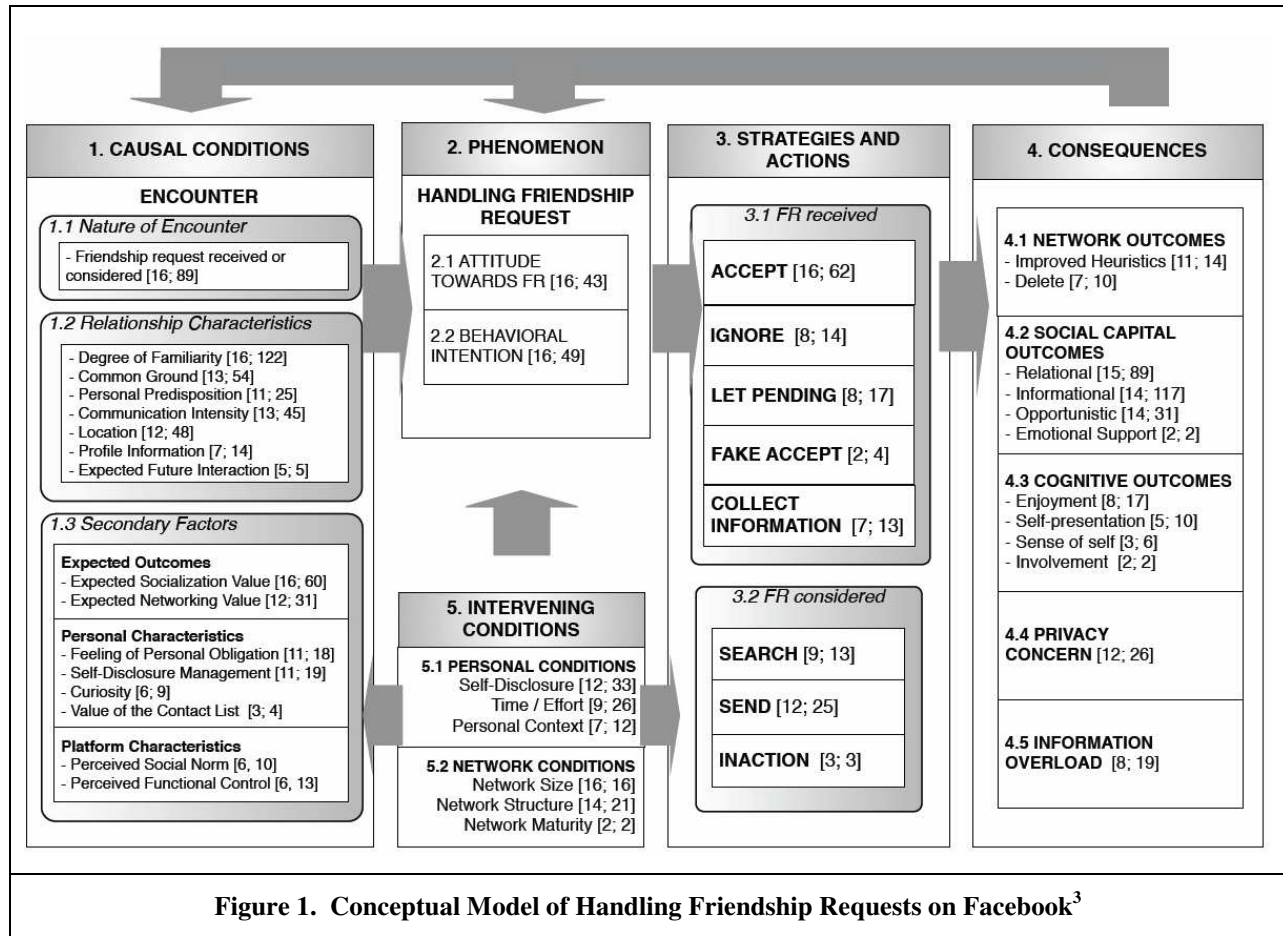
Results of the Qualitative Analysis

For the ease of comprehension we first introduce and shortly describe the result of our analysis – a conceptual and a process models depicted in Figures 1 and 2 respectively. Both Figures depict the same process of network construction behavior: Figure 1 aims for a comprehensive illustration of all variables involved in the course of handling FRs. Figure 2 depicts a simplified sequential view on 'friending' on Facebook. In the following sections we provide detailed explanations of all major constructs identified during the qualitative analysis as well as analyze the interrelations between them.

Conceptual model depicted in Figure 1 illustrates the context in which handling FRs takes place on Facebook. In line with the coding paradigm (Strauss and Corbin 1990; 1998), it describes *causal conditions* that influence the user's attitudes and intentions towards a FR, outlines possible *actions* at user's disposal when it comes to dealing with a request, and depicts an array of *consequences* which follow as a result of a chosen strategy. We recognize that the major *causal condition* leading to the attitude towards the FR is the virtual *encounter* of two people on a social network. We explore the properties of such an *encounter* which we find crucial to a user's *attitude, intention* and corresponding *actions*. These encompass the *nature of encounter* itself, the *relationship characteristics* with the person in question as well as various *secondary factors*, such as *personal* and *platform characteristics* as well as *expected outcomes*. *Strategies and actions* in dealing with a FR differ with respect to whether it was *received* or is being *considered*. Further, *consequences* can be related to the *network* itself, the possibility to obtain *social capital, cognitive benefits of enjoyment* or *sense of self* as well as such negative aspects as *privacy concerns* or *information*

² Some quotes were edited for grammar and style to ensure their readability.

overload. Finally, *personal and network intervening conditions*, reflecting the broader structural context in which the formation of *attitude* and *intention* takes place, can either constrain or facilitate the network construction process.



³ The first number in square brackets next to each category in Figure 1 reflects a number of respondents mentioning this category (max. 16). The second number reflects a number of times this category was mentioned in all transcribed interviews. Even though frequency of occurrence of a particular category maybe strongly biased and does not represent the aim of the GT approach, these numbers give reader an additional insight into the relative importance of a particular category in the overall conceptual model.

In contrast to a comprehensive approach in Figure 1, Figure 2 presents a simplified sequential *process* of how FRs are handled: Whenever an ‘encounter’ with a potential ‘friend’ takes place (FR is received or a potential FR is being considered), users initially question the *degree of familiarity* with the person in question. Outcomes of this evaluation either directly lead to an *attitude* or are further complemented by the assessment of other *relationship characteristics* as well as *secondary factors*. Once the attitude towards a certain FR is formed, it is translated into *behavioral intention*, which, if the broader context (*intervening conditions*) is favorable, leads to its realization (*actions*). The result is a set of *consequences*. Furthermore, existing *heuristics* used for assessing a FR can be updated a result of this (positive or negative) experience. Based on the same concepts as Figure 1, Figure 2 offers a new dynamic view of the phenomenon of handling FRs.

Phenomenon: Handling Friendship Request

We integrate *attitude* and *intention* towards a FR as central properties of our *phenomenon* (see boxes 2.1 and 2.2 of Figure 1 respectively). As revealed by our data, and confirmed by many behavioral theories, *attitude*, reflecting an evaluative judgment (e.g. *good–bad*, *harmful–beneficial*, *desirable - undesirable*), is the most powerful predictor of *intention*, which in turn, determines behavior (Ajzen 1991; 2005; Crites et al. 1994; Fishbein and Ajzen 1975). As construction of an individual network is in most cases under one’s own volitional control (Ajzen 1991), the *intention*, reflecting individual readiness to perform a certain action (Ajzen 1991), typically gets directly translated into *action*. The mechanism at place is quite simple: *Positive attitude* usually leads to *intention* of *accepting* a FR or initiating a *search* for the person in question. At the same time a *negative* stance results in *leaving the request pending*, a decision to *collect additional information*, *ignore* the request or *avoiding sending* one. As our phenomenon is action-oriented, *attitude*, *intention* and *action* interact closely with each other, as illustrated by the following example: “*If I do know them I will accept (DEGREE OF FAMILIARITY: high; INTENTION: accept). Sometimes I accept it, but on a limited profile for people that I don’t really know (DEGREE OF FAMILIARITY: no familiarity; ACTION: accept). There are people at the university who have added me that I never spoken to and I feel kind of socially obliged to add them (ATTITUDE: negative; FEELING OF PERSONAL OBLIGATION: high; INTENTION: accept/send)*” (Q).

Causal Condition “Encounter”

Encounter of two people, which on SNS takes place by receiving a FR or sending one, is the triggering event leading to the formation and development of *attitude* and *behavioral intention*. As a result ‘*encounter*’ is conceptualized as the main *causal condition* in our conceptual model (see box 1 of Figure 1). In the following we aim to explore its various properties on the basis of our interview data. Overall, Strauss and Corbin (1990; 1998) argue that causal conditions by themselves rarely influence a phenomenon; it is the *properties* of the causal conditions which combined lead to its development. In the context of our study we differentiate between three groups of properties characterizing ‘*encounter*’: (1) *nature of encounter* (e.g. FR received vs. FR considered to be sent) (see box 1.1 of Figure 1), (2) *relationship characteristics* between the parties involved in the *encounter* (box 1.2 of Figure 1) as well as (3) *secondary factors* involved in the *encounter*, such as *expected outcomes* from adding a ‘friend’ to the network, *personal characteristics* of a user as well as *characteristics* of the virtual *platform* where ‘friending’ takes place (box 1.3 of Figure 1). In the following sub-sections we analyze each group of these properties in detail.

Nature of Encounter

Following our data, ‘*nature of encounter*’ with a ‘friend’ represents a significant determinant of *attitude* towards a particular FR (see box 1.1 of Figure 1). SNSs typically allow users to construct their networks in two ways: (1) *passive path* – involves receiving a FR and requires a *response*; or (2) *active path* – typically takes place through encounter via suggestions, or by remembering someone and *sending* a FR. We find that sending vs. responding to a request provides a simple cue underlying the very basic heuristics users adopt when forming their *attitude*. Generally, users are more prone to accept than to send FRs, since sending requires more effort and motivation: “*I wouldn’t probably make the effort of finding new people on Facebook, but if somebody finds me, I will of course accept*” (Q). Some respondents even claimed to never send FRs to others. Overall, sending a request places higher requirements on the recipient in terms of relationship characteristics and anticipated outcomes: “*I could add him [send a FR] if he will take the same class as me...otherwise why do I need him?*” (Q).

Relationship Characteristics of Parties in an Encounter

As our data shows, attitudes that users develop towards a FR are tightly related to various *relationship characteristics* between parties involved (see box 1.2 of Figure 1). Particularly *degree of familiarity* appears to play a key role in the attitude formation process: It is the most frequently mentioned category in our study. Moreover, all of the 16 interview respondents claimed to evaluate a FR on the basis of how well they knew a person. Despite the fact that the degree of familiarity can be a highly granular characteristic our respondents consistently differentiated between *three* major dimensional levels:

High degree of familiarity: Requests from people users know *well* typically result in positive evaluative judgments: “*I am always happy when people from my past send me an invite*” (Q). Similarly, *sending* a FR was not viewed as a challenge whenever users encountered a good acquaintance via suggestions, common friends, or just by memory recall: “*If I see that one of my office colleagues is on Facebook, I would definitely send a request, because I have nice memories of my work*” (Q). However, as our data shows, characteristics: such as lack of personal predisposition, expectations about the need to exert higher control over one’s self-disclosure, and low probability of future face-to-face interaction may outweigh the importance of high degree of familiarity and lead to negative attitudes: “*This girl I know well, but I don't like her, so I ignore*” (Q).

Low degree of familiarity⁴: A variety of factors are at play when it comes to handling FRs from people of *low* familiarity. Some respondents valued the opportunity to keep in touch and possibly obtain information or other benefits from the people they did not know very well: “*I went on a hiking trip this summer and he was the guide of the group and we talked and he is cool and that's why I added him to know what other expeditions or trips they have in the mountains*” (Q). For others, however, receiving such a FR led to a *negative* attitude, especially when exacerbated by other factors, such as expected necessity to engage in self-disclosure management: “*I know their name, I know their face, but I never talk to these persons, and it is strange to show my life to someone that I don't tell my life in real*” (Q). *Lack of time* and *unwillingness to take an effort* – intervening conditions in our model - also often prevent users from sending a request to a ‘friend’ with *low* familiarity: “*I really don't feel I need to have her in my friends list ... I wouldn't make the effort*” (Q).

No familiarity: As a rule of thumb, most respondents in our sample claimed not to add ‘*strangers*’: “*100% I wouldn't add people that I hadn't seen before. I would never add anybody that I don't know*” (Q). With no existent relationship at hand, other secondary factors (e.g. common ground) may come into play. These, however, should be strong enough to outweigh the absence of familiarity: “*I still add some, when I see that there are really a lot of common people, and probably they come from the university where I studied before*” (Q). Thus, despite allegedly strong attitudes regarding ‘zero tolerance to strangers’, many users were willing to bend their rules when faced with a real situation providing evidence for the gap between claimed attitudes and real behavior.

Other Relationship Characteristics: As shown above, the assessment of the degree of familiarity was in some cases complemented by the evaluation of other relationship characteristics, such as *common ground*, *personal predisposition*, *communication intensity*, and often a *location* of parties involved in a virtual encounter (see box 1.2 of Figure 1). To illustrate how these characteristics enhance the intention to add a contact, consider the following example: “*I would add a person, if I know him/her (degree of familiarity), if I might have some contact with them in the future (expected future interaction) and if they are interesting (personal predisposition)*”.

Secondary Factors Characterizing Encounter

Expected Outcomes

Our data reveals that outcomes, which can be expected as a result of SNS friendship, often constitute an important part of the individual decision-making process. Following our data, we distinguish between two types of generic outcomes: *expected socialization* and *expected networking value* (see box 1.3 of Figure 1). The former reflects such unspecific relationship-related outcomes as friendship maintenance or development. The latter is more concrete and often rooted in self-interest. Examples include: getting advice, help, information, and often accommodation.

Expected Socialization Value: We find that beliefs regarding *socialization value* are salient across the whole familiarity spectrum. Our respondents expected to extract significant social benefits by keeping in touch with a large

⁴ The line between low and moderate degrees of familiarity is a fine one. As a result a large spectrum of weak acquaintances is covered by this category.

number of 'friends' in their contact lists: "[Facebook] is a great catalyst for social interaction, because you can keep in contact with so many more people than you would be able to with conventional methods". Participants believed that SNSs help them bring a relationship with less or unfamiliar people to a new level: "Without Facebook there would have been no social relationship at all" (Q). Our findings are strongly supported by empirical evidence which confirms the importance of social interaction in one's desire to join and participate on SNSs, with a number of friends in the network being an indicator of user activity (e.g. Ellison et al. 2007; Krasnova et al. 2010a).

Expected Networking Value: When it comes to less familiar people, notably our respondents were keen on estimating possible 'networking value' of such contacts – potential for an opportunistic outcome in the future and a possible compensation for the risks that such 'friendship' implies: "He is the first entrepreneur friend I know and he sent an invite, so maybe this will be helpful sometime later" (Q). Importance of expected networking value evidently increases as the level of familiarity decreases: "[I would add]...if the person is male, because I am single ...or someone working in the World Bank or such..." (Q).

Personal Characteristics

According to our data, characteristics of a user play an important role in how FRs are handled as described below:

Feeling of Personal Obligation: Respondents often felt obliged to accept a FR – a perception rooted in the unwillingness to offend others or appear rude to them. A request from a *well-familiar but unwanted* guest was often accepted to avoid "social embarrassment": "The person that irritates me here most, is my cousin's boyfriend. And I accepted him because I know him pretty well and he is my cousin's boyfriend" (Q). In the case of distant acquaintances this factor was particularly noticeable when *common ground* was present or *future interaction* was expected: "I rejected someone and then they bumped into me and it was horrible. Now I tend to just accept people". Interestingly, this pressure was sometimes perceived even with respect to unfamiliar users: "I heard about him from a friend but I never saw him. But still I feel guilty to reject" (Q).

Expected Self-Disclosure Management: One of the major concerns about adding people to one's contact list is the anticipated necessity of controlling one's self-presentation behavior – a concept we name 'self-disclosure management'. Having experienced the necessity to limit disclosures in the past, our respondents were particularly worried about the expected social discomfort posed, for example, by the presence of immediate family members or colleagues in their friends' lists: "So if I think that the person should not know what I generally post on Facebook, I would not add the person. For example, I did not add my 18 year old cousin" (Q).

Curiosity: SNSs allow users to follow up on each other in an easy-to-use and interactive environment. In this way the tools help to satisfy the natural curiosity of users by providing them with a possibility of social surveillance of their 'friends': "For my elementary school friends I was curious how they have changed... As they added me and I was confirming, I watched the pictures to find out what kind of people they had become..." (Q). In fact, simple curiosity often leads users to accept a request when no other reason seems convincing enough: "I suppose I would add somebody if I met them, just out of curiosity, especially if it was a good looking girl" (Q).

Value of Contact List: Even though most respondents we surveyed claimed to have around 30-40 people they *know well and follow* regularly, the average size of their network was significantly higher (ca. 300 contacts). This paradox can be partly explained by the *value* users place on their contact lists: "I always think that it's better to have more friends, because it's not obliging to anything, and why not" (Q). Following our respondents, profiles with higher number of friends were perceived as more trustworthy and added more weight to its owner in the eyes of others – a finding confirmed by previous work (e.g. Boyd and Heer 2006).

Platform Characteristics

Several *platform characteristics* were found to have an impact on how FRs were handled as described below.

Perceived Social Norm: SNSs were created with the aim to facilitate communication by connecting people with each other in a virtual space. Following our data, these original goals are still reflected in the *social norms* prevailing on such platforms. Indeed, some of our respondents were convinced that looking for and adding new friends was simply "a common practice": "Usually this is how it works, because whenever I meet people it's already a tradition to log in and wanting to add this person" (Q).

Perceived Functional Control: Modern SNSs offer users refined means to manage accessibility of their information via *functional controls*. For example, Facebook has recently introduced a new update of privacy settings

allegedly enabling users with more control over their information. Our findings show that presence of privacy settings gives users psychological reassurance that despite adding, for example, a less familiar contact to their friends' list, they could always limit access to their information via available *functional controls*: “*I can imagine adding someone because of some self-interest ...I can add this person and then restrict their access to my profile, let them see only one or two pictures*” (Q). However, intervening conditions such as *lack of time* or *unwillingness to take an effort* often lead to underutilization of privacy controls and motivate users to manage their self-disclosures rather than use privacy settings.

Strategies and Actions

Nature of encounter – FR received vs. FR considered - is a primary determinant of actions at a user's disposal. Once a FR is received, two basic functional options are available: *accept* or *ignore* (see box 3.1 of Figure 1). Another common alternative is to *leave the request pending* in order to delay making the final decision: “*I couldn't decide right now, but I think I will let her stay in the list before confirming or before ignoring...it's like giving myself time to think or to remember*”(Q). In addition respondents were likely to try to *find some information* about the sender, as often they assumed to know the person, but possibly not to remember her: “*If I see the picture on Facebook, then I pay more attention at school and then if I see her, I remember that I had a conversation with her*” (Q). Another intricate strategy – *false accept* – can be adopted when a user is unwilling to accept a FR but at the same time cannot immediately ignore it: “*When family members send me a friend request, I first say confirm, because otherwise they would be mad, but then delete them the next day*” (Q). Other than receiving a FR, users can either take an active position and *search* for people themselves or simply do nothing (*inaction*) (see box 3.2 of Figure 1). Overall, proactive network construction is well supported by the functionality of the site: “*Facebook gives you suggestions... People that you might know, so I add them then*” (Q). *Searching* for someone and *sending* a FR typically requires stronger reasons than would be necessary if the user had to make a decision about a received request. For example, expectation of possible benefits may motivate users to make an effort of sending as explained above.

Intervening Conditions

Intervening conditions, related to behavior and characteristics of people involved in an encounter (see box 5.1 of Figure 1) as well as particularities of their existing networks (see box 5.2 of Figure 1), can have an effect on actions users undertake. For example, favorable personal context in the moment of taking a decision about a FR can impact behavior considerably: “*I'm just new in the city and I'm just getting to know people. ... so I add everyone*” (Q). Further, *size* and *structure of the network* of friends play an important role in dealing with FRs. For example, if the network is too big, it can put constraints on the individual network construction behavior: “*I think 450 friends is too many, there are useless people that I wouldn't have a conversation... and I would like to clean... Facebook suggests me to get in touch... but I don't add her because there is no use*” (Q).

Consequences

The way users choose to construct their networks leads to a set of *consequences* (see box 4 of Figure 1). For example, every time a user deals with a FR her experience is enriched and *heuristics* she employs to construct a network *are improved*: “*There are a few people I got an invite from and I accepted it, but I barely know them... So I wouldn't want my homepage filled with updates about people I really don't want to know about so much*” (Q) (see box 4.1 of Figure 1). Indeed, negative experience with *information overload* – a possible and likely consequence of the inadequate network construction behavior (Koroleva et al. 2010) – may lead a user to be more considerate in accepting FRs in the future or even to start deleting major ‘social spammers’ (see box 4.5 of Figure 1).

A myriad of indirect outcomes can result from adding people to the network, the most valuable of which are the gains in *social capital* (see box 4.2 of Figure 1). They encompass (1) *relationship improvements*, such as, reviving, maintaining and developing ‘friendships’; (2) various *informational benefits* including finding out useful information, broadening the horizon or being socially updated; (3) *opportunistic benefits*, such as, getting help in matters where one's own expertise is not enough: “*If you've got a professional problem with studies and someone of your friends are good at that, you would ask them for help?*” (Q); (4) or even *emotional support*: “*I know my friends are always there for me*” (Q). Moreover, adding people may result in the attainment of *cognitive benefits* (see box 4.3 of Figure 1), such as (1) *enjoyment*, (2) enhanced possibilities for *self-presentation*, or (3) *increased sense of self*. Furthermore, (4) *user involvement* on the platform may improve as a result of enhanced connectivity – an

outcome of special importance for SNS providers. On the negative side, users may suffer from elevated *privacy concerns* as a consequence of uncontrolled network expansion (see box 4.4 of Figure 1).

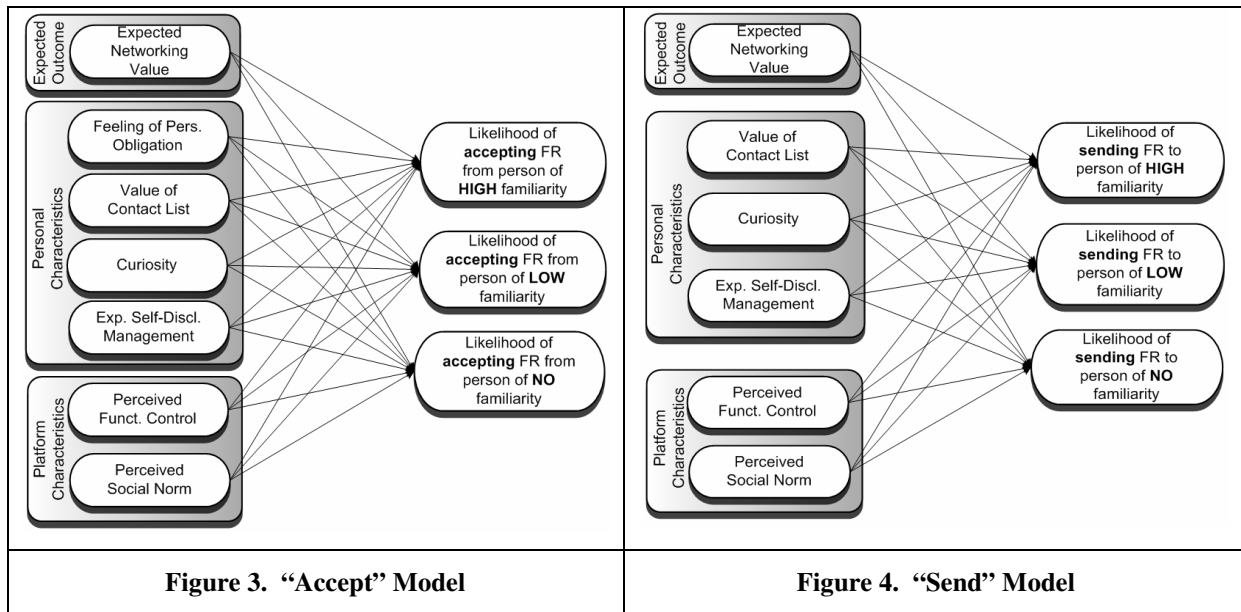
Empirical Study

Empirical Testing in the Light of Grounded Theory

Even though GT is in most cases exclusively based on the qualitative data (e.g. Orlikowski 1993; Pace 2004), Glaser (1992) is calling for more use of quantitative evidence to support research propositions. Pace (2004) complements this view and points out that while the main aim of the GT approach is to build theory (e.g. expressed in a set of propositions), other methods can be used to verify it. Following these arguments, in our study we used GT approach to derive a conceptual model on the basis of the interview data as described above. In the next step we employ Structural Equation Modeling methodology to quantitatively test a set of relationships as suggested by the qualitative data.

Empirical Model

Sending and *accepting* a FR are two ways of constructing a network. Following Figures 1 and 2, the assessment of the *degree of familiarity* represents the most crucial heuristic when it comes to handling FRs. Generally, it holds that the more people know each other the more likely they are to accept or send a FR to one another. Overall, it is expected that users will evaluate *familiarity* parameter upfront. In the next step, other *relationship characteristics* and *secondary criteria* - *expected outcomes*, *personal* and *platform characteristics* - will come into play determining the final outcome. *How strongly* (and if at all) these factors are likely to influence the final decision is, however, still unclear.



Against this background, understanding the interaction between the likelihood of accepting / sending a FR to people of various familiarity and secondary factors represents one of the most challenging and interesting parts of our conceptual framework derived using GT (see Figure 1). As a result, the second part of this study is dedicated to testing this part of our theoretical model. Specifically, we focus on the *impact of secondary factors on the likelihood of accepting or sending FRs to people with various degrees of familiarity*. Hypothesized relations between independent and dependent variables are summarized in two separate empirical models as shown in Figures 3 and 4. By testing these models we explore whether *expectations regarding networking value, value placed on the contact*

list, curiosity, expectations regarding self-disclosure management, perceived functional control and perceived social norm influence one's likelihood to accept ("Accept" Model) or send ("Send" Model) a FR to a person of high, low and no degrees of familiarity. It is important to note that feeling of personal obligation to add a FR is only part of the "Accept" model for obvious reasons. Finally, expected socialization value is the only secondary factor missing in our empirical model. Even though omitting this factor definitely resulted in the loss of the explanatory power of the tested models, a significant impact of this factor on SNS participation and willingness to engage with others has received strong support in our qualitative study, as it was mentioned more frequently than any other secondary factor. Furthermore, its relevance has been validated in other quantitative and qualitative studies (e.g. Boyd 2010; Krasnova et al. 2010a; Livingstone 2008; Lewis and West 2009).

Survey Design and Sampling

Students at a U.S. university were offered to participate in the online survey in exchange for several points of extra credit. Taking part in the study was completely voluntary, with Facebook membership and the age above 18 stated as conditions for participation. Even though our choice of the target audience was partly dictated by practical reasons, behavioral research suggests that results obtained on the basis of college samples are largely generalizable to the overall population (Kruglanski 1975). Moreover, a whopping 96% of students use Facebook in a typical American university (Facebook 2010c), providing evidence for students representing an important user group. The responses were collected in Fall – Winter 2009/2010, with a final net sample consisting of 229 observations. Median age of the respondents was 22 (mean 24); 63.3% were male and 36.2% were female; 71.2% had U.S. origin. Majority of the respondents were majoring in business-related disciplines: 26.7% in Management Information Systems, 20.9% in Finance, 18.7% in Marketing, 17.1% in Management. Median number of Facebook friends for respondents was 305 (mean 357, min 3, max 1860).

Development of Measurement Scales

To operationalize constructs in our study we relied on the existing scales wherever possible. However, in many cases scales had to be modified or developed anew to reflect the specific context of our research as shown in Table 1. Content validity of such scales was ensured via intense discussions with SNS users: As a result a few items were either removed or improved. Unless specified otherwise, all items were anchored on a 7- point Likert scale, with all constructs modeled as reflective.

Particular attention was paid to the operationalization of our dependent constructs: *Likelihood of Accepting / Sending a FR*. A variety of situations were formulated in order to reflect *high, low and no degrees of familiarity*. Each situation was then used twice: to evaluate (a) the likelihood of accepting such FR and to assess (b) the likelihood of sending a FR to such person. Responses to these items were then used to operationalize dependent constructs for "Accept" and "Send" models respectively. Once the data was collected, hypothesized differentiation across the degrees of familiarity was verified on the basis of Exploratory Factor Analysis (EFA): As a result, one item exhibiting poor loading was removed.

Operationalization of *Expected Networking Value* construct aimed to reflect the usage of one's contact list for personal gain, e.g. information or job search. Here "*Linkage to External Assets/Information Diffusion*" dimension of bridging social capital formulated by Williams (2006) was taken as a basis and then modified and extended. Six items from the Social Curiosity Scale by Renner (2006a) were selected as the most suitable to operationalize *Curiosity* in the context of our study, as they underscore social aspects of this construct, namely "*interest in how other people think, feel, and behave*" (Renner, 2006b, p. 305). Items for *Perceived Functional Control* construct were borrowed from Krasnova et al. (2010b) and aimed to capture user's perceptions of control over one's information and actions of others via privacy settings. Items measuring other constructs - *Feeling of Personal Obligation, Value of Contact List, Expected Self-Disclosure Management and Perceived Social Norm* – were self-developed.

Table 1. Construct Operationalization	
Construct / Source	Survey Items
<i>Likelihood of Accepting FR: Once you have received a FR, how likely are you to accept it from:</i>	
<i>Likelihood of Sending a FR: How likely are you to search for and send a FR on FB to:</i>	
High degree of familiarity (self-developed)	1. ... someone you know well from university; 2. ... an old acquaintance; 3. ... a good friend from childhood; 4. ... someone you worked tightly with on the same project; 5. ... someone you meet at sport every week.
Moderate - Low degree of familiarity (self-developed)	1. ... someone you visit a course with but do not really know well; 2. ... someone you have met once at a conference; 3. ... someone you have talked to at a party; 4. ... someone you had an interesting conversation with on the train.
No Familiarity (self-developed) Answer Categories: 1=Very Unlikely; 7=Very Likely	1. ... someone you don't know but who has one mutual friend with you on Facebook; 2. ... someone you don't know but whose profile is interesting for you (interesting CV, interesting country of origin, etc.); 3. ... someone you heard a lot about but did not have a chance to meet; 4. ... someone you don't know but who has something in common with you (same school, work); 5. ... someone you don't know but who has several mutual friends with you on Facebook; 6. ... someone you don't know but with whom you have common interests (similar hobbies, music tastes, favorite movies).
<i>Independent Variables:</i>	
Expected Networking Value (partly based on Williams, 2006)	1. Based on the people I interact with on Facebook it is easy for me to hear about new job opportunities (Williams 2006); 2. Through the people I interact with on Facebook it is easy for me to find out useful information (about places to visit, things to see, how to, etc.); 3. If I need to, I can ask my Facebook friends to put me in contact with someone important for me; 4. The people I interact with on Facebook help me stay in touch with what is new and popular (Williams 2006).
Feeling of Personal Obligation (self-developed)	1. I often feel obligated to add a particular contact; 2. It would be rude to reject a friendship request; 3. It is just polite to accept a friendship request if you get one; 4. If someone I know, but don't really like, sends me a friend's request I will be polite and accept it.
Value of Contact List (self-developed)	Having a lot of friends in my profile: 1. ... lets me have more weight in the eyes of others; 2. ... makes my profile look more trustworthy to others; 3. ... makes me feel good; 4. ... enhances my reputation/status among Facebook users; 5. ... makes my profile look more interesting and appealing to others.
Curiosity	Items: 1, 2, 3, 6, 7, 10 of the Social Curiosity Scale by Renner (2006a).
Expected Self-Disclosure Management (self-developed)	1. The more friends I have on Facebook, the more I have to control what I reveal about myself; 2. The more friends I have on Facebook, the more I have to think what I post; 3. Having many friends on Facebook hinders my self-expression; 4. The more friends I have on Facebook, the less I can treat Facebook as a private space.
Perceived Functional Control (based on Krasnova et al. (2010b); Answer Categories: 1= No Control at all; 7= Full Control	How much control do you have on Facebook (e.g. through functionality, privacy options/policies) over: 1. ... who can collect and use the information you provide; 2. ... what information is accessible to whom (Krasnova et al. 2010b); 3. ... the actions of other users (e.g. tagging you in pictures, writing on your or their Wall, etc.); 4. ... the information other users can communicate about you on Facebook (by writing on your wall, commenting on your and their photos, tagging you etc.).
Perceived Social Norm (self-developed)	On Facebook it is common: 1. ... to accept friendships' requests; 2. ... to look for and add new friends; 3. ... to try to make as many friendships as possible; 4. ... to get to know new people.

Research Methodology and Model Evaluation

Partial Least Squares (PLS) approach was chosen to evaluate Structural Equation Models formulated above. The choice of this approach was dictated by several reasons. First, PLS is a preferable methodology in situations when the study in question has an exploratory nature with the theory behind the model still in development (Fornell and Bookstein 1982). Second, taking into account that many of the variables in our sample were not normally distributed, PLS was particularly suitable as it does not place strict restrictions on data distribution. All calculations were carried out using SmartPLS 2.0.M3 (Ringle et al. 2005). Evaluation of our models has been done in two steps: Assessment of the Measurement Models (MMs) was followed by estimation of the Structural Models (SMs) as described below.

Validity of our MMs was checked by evaluating Convergent and Discriminant validity of the measured constructs. Convergent validity was assessed by estimating the Indicator Reliability, Composite Reliability (CR) and Average Variance Extracted (AVE) parameters. Indicator Reliability is ensured when factor loadings exceed the level of 0.7 (Hulland 1999). Bagozzi and Baumgartner (1994) additionally state that lower values are also possible as long as the indicators together appropriately reflect the construct, suggesting 0.4 as the lowest threshold. This criterion was met for all items in our models, with only four and two indicators lying between 0.55 and 0.60 in the “Accept” and “Send” models respectively and the rest exceeding the benchmark of 0.7. Cronbach’s Alpha (CA) was also assessed to examine Internal Consistency of the measurement scales exceeding the threshold of 0.7 for all constructs in our study (Nunnally 1978). The CR and the AVE values for all constructs were higher than the required level of 0.6 (Ringle 2004) and 0.5 (Fornell and Larcker 1981) respectively. Different criteria results are summarized in Table 2 providing evidence of Convergent validity for all constructs. Discriminant validity provides evidence that the constructs in a model are sufficiently different from each other. It is ensured when the square root of AVE for a particular latent variable is higher than the correlation between this variable and any other latent variable included in the model (Fornell and Larcker 1981). This requirement was fulfilled for all constructs in both models.

Table 2. Quality Criteria of the Constructs							
Construct	Mean for “Accept” / ”Send” Models	“Accept” Model			“Send” Model		
		CA	CR	AVE	CA	CR	AVE
<i>Likelihood of accepting / sending FR to people with:</i>							
High degree of familiarity (HDF)	6.103 / 5.444	0.903	0.924	0.710	0.839	0.886	0.608
Low degree of familiarity (LDF)	4.532 / 3.517	0.860	0.905	0.704	0.835	0.890	0.668
No Familiarity (NF)	2.905 / 2.156	0.929	0.945	0.740	0.945	0.956	0.784
<i>Independent Variables:</i>							
Expected Networking Value	4.193	0.784	0.858	0.602	0.784	0.857	0.600
Feeling of Personal Obligation	3.070	0.820	0.880	0.647	n.a.	n.a.	n.a.
Value of the Contact List	3.197	0.938	0.952	0.800	0.938	0.953	0.801
Curiosity	4.197	0.832	0.867	0.525	0.832	0.878	0.548
Expected Self-Disclosure Management	4.590	0.845	0.886	0.661	0.845	0.879	0.646
Perceived Functional Control	4.317	0.859	0.873	0.639	0.859	0.903	0.700
Perceived Social Norm	4.104	0.785	0.859	0.603	0.785	0.853	0.596

When using PLS, evaluation of the Structural Model encompasses estimation of the R²-values for dependent constructs, the path coefficients and the corresponding p-values as summarized for “Accept” and “Send” models in Table 3. P-values were derived on the basis of bootstrapping results with 200 samples. The R²-values show that our model explains only 3.0% of variance in the *likelihood of accepting people with high degree of familiarity* (“Accept” Model, Figure 3). However, R²-values reach 16.1% and 23.0% when it comes to explaining the *likelihood of accepting FRs from people of low and no familiarity* respectively. At the same time, independent variables explain 13.6%, 20.0% and 21.7% of variance in the *likelihood of sending FRs to people of high, low and no familiarity* (“Send” Model, Figure 4). Taking into account the explorative nature of this study, such explanatory power of both

“Accept” and “Send” models is satisfactory. At the next step significance of the path coefficients was evaluated for both models. We find that while *expected networking value* and *value placed on the contact list* motivate and *expectations regarding increased self-disclosure management* deter users from *sending* FRs to well familiar people, no construct in the “Accept” model has a significant influence on one’s willingness to integrate people one knows well. At the same time *feeling of personal obligation* as well as *perceptions regarding social norms* are found to play a significant role in one’s willingness to *accept* people of *low and no familiarity*. Additionally, *value of the contact list* was found to have a positive influence on one’s attitude towards *accepting* ‘strangers’.

Table 3. Path coefficients and their significance levels

Independent Variable / Dependent Variable	“Accept” Model			“Send” Model		
	HDF ⁵	LDF	NF	HDF	LDF	NF
Expected Networking Value	0.027	-0.053	0.000	0.257*	0.111***	0.042
Feeling of Personal Obligation	0.046	0.189*	0.228*			
Value of the Contact List	-0.079	0.046	0.186*	-0.097	0.138**	0.222*
Curiosity	0.018	0.101	-0.019	0.136***	0.042	-0.093
Expected Self-Disclosure Management	-0.122	-0.101	-0.057	-0.194*	-0.039	0.038
Perceived Functional Control	-0.064	0.035	0.144	0.047	0.164*	0.206*
Perceived Social Norm	0.073	0.245*	0.202*	0.068	0.255*	0.269*
R-squared (R ²)	3.0%	16.1%	23.0%	13.6%	20.0%	21.7%

*: Significance at 1%, **: Significance at 5 %, ***: Significance at 10%;

Whether or not users *send* a FR to a person of *low or no familiarity* is to a large extent determined by the *value one places on the contact list*, perceptions regarding the *social norm* as well as one’s *reliance on functional controls*. Moreover, users appear to integrate *expected networking value* into their decision when it comes to proactively integrating people of *low familiarity*. The implications of the obtained results are discussed in the following sections.

Discussion

There is a great interest on the part of SNS providers and general public in enhancing connectivity between dispersed user groups. As a result, there is a pressing need to understand what motivates users to include others into their networks. In an attempt to address these issues, we initially relied on the GT approach to develop a comprehensive model that explains the dynamics behind a network construction behavior. A conceptual model derived through a qualitative analysis of the interview data was then tested in a quantitative study. Combining results of these two research approaches together, our study delivers an array of fascinating insights into the individual network construction behavior. Below we discuss the implications of our findings and compare them to the existing theoretical knowledge as suggested by Strauss and Corbin (1990; 1998).

Based on our qualitative data, whether a FR is *received* or *considered* to be sent has important consequences for the network construction process. Many respondents in our sample claimed to “*generally just accept people who add [them] but not [to] actively seek them*” (Q). However, in reality it is impossible that all users only accept the requests, since before the request is accepted it must be sent by someone. Nevertheless, Lewis and West (2009, p. 1220) argue that there is “*more status involved in being added*” as opposed to “*doing the adding*” – hinting at the social desirability bias that induces interview and survey respondents to claim that they accept more frequently than seek new connections. This discrepancy between claimed sending vs. accepting behavior was confirmed by our quantitative data: As Table 2 shows, survey respondents were always more likely to accept a FR than to send one regardless of the degree of familiarity and other contextual factors (differences across all items were statistically significant). This reluctance to proactively extend one’s network has many explanations. For example, as most user

⁵ HDF, LDF, NF stand for likelihood of accepting / sending FR to people with high degree of familiarity, low degree of familiarity and no familiarity respectively.

networks are quite mature, users may not be willing to extend major efforts to deliberately expand them even further. These findings are not comforting for SNS providers who make every effort to increase user connectivity (Smith 2009a). As a consequence, this unwillingness to send FRs underscores the importance of our empirical “Send” model in determining the factors to *reverse* this trend.

We find that when it comes to sending or accepting a FR, the first question users ask is: ‘*Do I know him/her?*’ with a *degree of familiarity* being the most important criteria for a final decision. Generally, the greater the *degree of familiarity* the higher the *likelihood of accepting or sending a FR* as shown in Table 2. Interestingly, empirical test of the “Accept” model reveals that no factor is critical for accepting a FR from a well familiar person. This is in line with our qualitative findings which show that, with rare exceptions, knowing a person well is generally enough to accept a FR. At the same time, there can be immense variation in attitudes when it comes to accepting friends who are less familiar. These findings are in line with previous studies. For example, Boyd (2010) shows that while accepting close friends is a usual practice, teens have higher reservations when it comes to classmates they barely know. Integration of ‘strangers’ into one’s contact list causes even more resistance (Livingstone 2008). This trend is worrisome, as many social scientists stress the value of SNSs in supporting ‘weak ties’ with less familiar people from various backgrounds.

Based on our quantitative data, we find that *expectations regarding networking value* (e.g. getting professional advice, useful information) motivate users to send – but not to accept - FRs to people with high and low degrees of familiarity. This is in line with our qualitative findings, which show that respondents place higher demands on the recipient when they act as ‘senders’ as opposed to ‘recipients’. In this case, self-interest in attaining certain outcomes may serve as a powerful stimulus to be proactive. At the same time, opportunistic expectations do not seem to motivate friendships with ‘strangers’: Due to limited information on the profile it may be either difficult for users to assess what value they can extract from others; furthermore, users may be generally unwilling to integrate unfamiliar people into their contact list no matter how ‘useful’ they may appear.

Feeling of personal obligation was found to induce the acceptance of FRs from people of low and no familiarity. As it is “*easier to say yes than no*”, users may expand their networks, so as not to appear rude to others (Boyd 2006, p.8). Interestingly, significance of this factor in the case of unfamiliar people contradicts a popular opinion that users see “*little social cost to rejecting Friend requests from strangers*” (Boyd 2010, p. 97). Furthermore, we find that *value* users place on the *size of the contact list* was motivating them to send and accept ‘strangers’ as well as to send requests to their distant acquaintances. Donath and Boyd (2004) mention that some users may feel embarrassed by the small size of their network, and thus deliberately expand it - behavior known as ‘*collecting*’. Whether or not network providers should promote such behavior is questionable, as collected links may just reflect what Jones (1997, p. 17) calls ‘*aimless connectedness*’. However, the motive of collecting may result in positive outcomes when other factors, such as common interests, are involved.

Curiosity was found to motivate users to send FRs to people they know well. Respondents in our qualitative study were particularly interested in reconnecting and finding out about people they knew well in the past, but lost connection to: “*I was just curious where my classmates are now*” (Q). This urge to follow on the information of others appears to be so powerful that it brings users to take an effort and send a request by themselves.

Numerous qualitative and quantitative studies confirm the importance of privacy-related constructs in determining user participation on SNSs (e.g. Boyd 2006; Krasnova et al. 2009; 2010a). Driven by the desire to expand their networks, many users early on were inviting ‘friends’ from various social circles only later to realize the privacy risks inherent in the presence of these multiple audiences. Over time users have learnt from their mistakes (Lewis and West 2009). In our study we find that users are deterred from sending requests to people they know well to avoid the negative impact of these contextual conflicts on their *self-disclosure* behavior. Indeed, ‘well familiar’ people often belong to such sensitive categories as family members or work colleagues. Hence, it is logical that users might prefer to avoid proactively initiating such ‘friendships’. Apart from limiting information they disclose, our interview respondents claimed to *rely on privacy settings* to mitigate privacy threats coming from their Facebook ‘friends’. In line with our quantitative results, such functional assurances offer users incentives to send FRs to distant acquaintances and even ‘strangers’. Possibly, users find comfort in the fact that if something goes wrong they can still unilaterally limit access to their public information using available functionality. Overall, importance of privacy controls for ensuring SNS participation was supported by several studies (Krasnova et al. 2010a; Xu et al. 2008). Specifically, in her study of teens, Livingstone (2008, p. 406) notes that “*the operation of privacy settings and provision of private messaging on the sites are teenagers’ top priorities*”.

Lewis and West (2009) argue that *social norms* represent a ‘contextual frame’ in which users interact with others, determining how requests should be handled within the context of their social network. Our qualitative analysis shows that users perceive Facebook as a place where it is common to make contacts beyond a close circle of friends. This is supported by our quantitative evidence which shows that social norms about ‘friending’ emerge as one of the most influential factors, motivating users to expand their contacts’ lists. This result is interesting, as it signals that despite a strong correlation between network construction behavior and resulting individual outcomes, individuals still exhibit such strong propensity towards ‘herding’ behavior.

Managerial Implications

SNS providers place an increasing emphasis on social advertising and viral marketing campaigns as a bedrock of their business strategy. The mechanism of “social filtering” inherent on SNSs ensures that the information gets to its required recipient: As friends know the preferences of their friends better than any marketing tool, they can effectively direct marketing-relevant information to them. As it is coming from their personal connection, this information appears to be more trustworthy and, hence, more valuable for the recipient. In fact, irrespective of the level of familiarity, the information received on SNS is usually regarded as more targeted and personal, compared to other channels. Many companies are already exploiting this valuable feature of Facebook. For example: Amazon employs user profile information to provide product recommendations for gifts to friends (Fitzsimmons 2010c), retailers sort their products based on the amount of ‘likes’ on Facebook (Fitzsimmons 2010d), other companies are employing new technologies such as RFID chips (Fitzsimmons 2010a) or barcodes on mobile phones (Fitzsimmons 2010b) to enhance the spreading of likes in real time. While “liking” promotes curiosity among users and thereby generates activity, profile information delivers valuable insights into customer base. This way SNSs like Facebook become powerful marketing tools for companies, who place an increasing emphasis on the creation of new relationships between users, possibly with people from different circles. Against this background, our study delivers an array of practical implications for SNS providers who are seeking to understand the dynamics behind the network construction behavior.

As perceptions regarding *social norms* emerge a powerful determinant of *accepting* and *sending* behavior to distant acquaintances and even ‘strangers’, PR campaigns and direct communication via SNS interface can be used to influence user perceptions about what constitutes a ‘common’ practice on the site. As for now, Facebook declares that it “*helps you connect and share with the people in your life*” (Facebook 2010b) – a slogan placed on its main login page. Even though this motto leaves room for interpretation, it mainly orients users to communication with already familiar people. In this sense, Facebook’s potential to connect unfamiliar individuals on the basis of e.g. common interests is missed.

Moreover, in order to encourage the formation of friendships with less familiar individuals, the friends’ suggestions mechanism - currently based on friends of friends as well as the e-mail contacts of the user and her friends - can be improved (Northrup 2009). Based on our findings, we advise to extend this algorithm with such characteristics of friendship building as *shared interests or common location* as identified in our qualitative study. Furthermore, connections to less familiar but ‘useful’ people who carry the potential to create networking value should be promoted on the basis of employment and educational information.

Location emerges as a promising venue for enhancing existing interactions and creating new contacts. With the introduction of the ‘Places’ feature, Facebook users can check into locations thereby informing their contacts about their whereabouts. This may also enhance their opportunities to meet other people with shared interests (Sharon 2010). Even though location-based services integrated on the SNSs are likely to facilitate the process of friendship building, they also pose some threats in terms of sharpened necessity to engage in *privacy management*: As users have the possibility to check in their friends to various locations, the problems to privacy – and hence the choice of friends – become particularly acute. In the light of these controversies, SNS providers need to enable users with enhanced *control* possibilities as well as privacy-friendly default settings in this area in order to ensure network sustainability and expansion.

Overall, our study underscores the role of *control* perceptions in motivating users to send FRs to distant acquaintances and ‘strangers’. Acknowledging this fact, Facebook continuously engages in improving granularity and usability of its privacy settings (Smith 2009a). These changes should, however, be implemented in a constant contact with users (e.g. via various feedback mechanisms such as blogs or open forums). Unilaterally giving users “more control” may paradoxically leave them with repulsive feelings of helplessness, denial and even outrage. For

example, a recent (possibly well-meant) overhaul of privacy settings on Facebook has provoked a sweeping wave of criticism on the part of various user groups and media (Boyd and Hargittai 2010).

Given that *social curiosity* constitutes an important factor in motivating users to proactively expand their networks (send a friendship request), SNS providers can incorporate features to address these needs into their platform design. For example, results of numerous application-based “tests” (e.g. “What nationality are you?”) or Facebook’s News Feeds, aim to instantly gratify users’ need for information about their ‘friends’. However, even though News Feed has proven its ability to deliver socially relevant information to Facebook users, our qualitative findings suggest that the problem of *information overload*, as a side effect of the continuous information stream, should be tackled as soon as possible. Indeed, as networks grow, users become increasingly irritated by the rising amount of ‘useless’ messages from ‘less interesting’ people. This may lead to decreased attention and participation levels on SNSs (Koroleva et al. 2010). In order to prevent users from cutting their networks as a measure of last resort to fight *information overload*, SNS providers should concentrate their efforts on improving information filtering mechanisms to account for such ‘hard’ factors as *location, demographic characteristics*, as well as – and even more so, for such ‘soft’ relationship-relevant mechanisms as a *degree of familiarity, communication intensity* or *personal predisposition* to a network ‘friend’. Taken together, results of our study provide a starting roadmap for SNS providers on their way to managing user networks.

Concluding Remarks and Future Research

Before we draw any conclusions, we would like to highlight some limitations of our study, which, however, represent interesting opportunities for future research. First, given the limited exposure, our sample size was small, compared to the population that we tried to study. Second, we relied on a student sample of mature Facebook users with slight male overrepresentation collected in the USA. Even though student samples are generally acceptable when the research question is “universalistic” in nature and involves psychological constructs (Kruglanski 1975), we strongly encourage validation of our findings with a more representative sample. Indeed, although Facebook originated in the USA as a campus network and students still represent a large proportion of its population, other demographic and social segments are gaining relevance as well (Smith 2009b). Overall, the results of our study can be only cautiously externalized to a more global population and are mainly valid for young Facebook users with mature networks studying in the American college. Third, the dependent variables used in our quantitative study combine the likelihood of adding/sending a FR with the most crucial parameter of the decision-making process: degree of familiarity. This modeling reflected the best judgment of the authors at that time and was also dictated by the complexity of the cognitive patterns in the network construction behavior. At the same time, other approaches to modeling the process of network construction are also possible and should be explored. For example, degree of familiarity could be integrated as a moderating variable. At this point, it should be noted that quantitative part of our study tests only a fragment of the model derived on the basis of qualitative data. Testing a holistic model of network construction behavior on SNSs is another promising path for future research. Fourth, the construct “*expected socialization value*” was omitted from our quantitative study and should be included into future model validations to ensure model completeness. Finally, our model could be re-examined to include other networks apart from Facebook, as the network construction behavior in MySpace or professional networks such as LinkedIn may be driven by other factors.

Overall, our study is the first attempt to investigate the network construction behavior of SNS users in a comprehensive manner. Taking into account importance of individual network expansion for the business model of SNS providers we have placed a particular emphasis on understanding the motives of this process. The study has been done in two steps. First, application of GT approach has helped us identify a number of factors which influence the way users handle FRs on SNSs. In the next step, importance of a subset of these factors in motivating users to accept and send FRs to people with various degrees of familiarity has been verified empirically by evaluating two structural equation models. This additional assessment has shed the light on the intricate dynamics taking place on these platforms.

Acknowledgement

We (Hanna Krasnova and Ksenia Koroleva) would like to thank our supervisor *Prof. Oliver Günther* for supporting our research endeavors. We also would like to thank our independent reviewers for their valuable feedback.

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