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Article

Let the Weakest Link Go! Empirical Explorations on the Relative Importance of Weak and Strong Ties on Social Networking Sites

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Abstract: Theoretical approaches as well as empirical results in the area of social capital accumulation on social networking sites suggest that weak ties/bridging *versus* strong ties/bonding social capital should be distinguished and that while bonding social capital is connected to emotional support, bridging social capital entails the provision of information. Additionally, recent studies imply the notion that weak ties/bridging social capital are gaining increasing importance in today's social media environments. By means of a survey ($N = 317$) we challenged these presuppositions by assessing the social support functions that are ascribed to three different types of contacts from participants' network (weak, medium, or strong tie). In contrast to theoretical assumptions, we do not find that weak ties are experienced to supply informational support whereas strong ties first and foremost provide emotional support. Instead we find that within social networking sites, strong ties are perceived to provide both emotional and informational support and weak ties are perceived as less important than recent literature assumes.

Keywords: social capital; bridging/bonding social capital; social support online; social networking sites

1. Introduction

Social networking sites (SNS) like Facebook have experienced an enormous growth in membership numbers in the last few years. Facebook alone has about 1.189 billion active users worldwide [1], with profiles on which people present themselves by providing details on their education, work, interests, and friends, by uploading photos and posting comments that can be viewed by family, friends, and acquaintances. Similarly, services like Google+ and the microblogging service Twitter allow people to set up their own profiles and share feelings and information with more or less tailored audiences.

In providing these features, these platforms allow people to present themselves and stay connected with their social contacts, even across long distances, time zones, and generations. In doing that they (can) satisfy a fundamental human need, the need to belong, which is a necessary precondition for well-being [2–4]. While in the early times of Internet communities and social networking sites (SNS) a common assumption was that the new technologies will first and foremost be used to establish connections to strangers, it became apparent that SNS are predominantly used to electronically link to people one knows from offline life [5,6]. However, unlike real life interactions, social media communication entails the notion of context collapse in the sense that people from very different groups and contexts (e.g., friends, colleagues, family) are present in the audience [7,8]. Independent of the origin of the people one connects with, online networks imply an important resource—what Bourdieu [9] refers to as social capital [10,11]. This refers to the fact that establishing and maintaining relationships leads to emotional, structural, and economic advantages since the people one is related to can offer various forms of support. Social networking sites are well suited to establish and maintain social capital and, for this reason, have been shown to be able to positively influence well-being [10]. Numerous studies demonstrate a positive relation between intensity of SNS usage, perceived social capital, and well-being [10,12,13]. In line with this, the loss of social capital (for example when a Facebook contact is lost by "unfriending") is accompanied by negative feelings [14]. Based on sociological concepts posited by Putnam [15] and Granovetter [16], social capital is distinguished into strong ties/bonding social capital and weak ties/bridging social capital [11]. Strong ties such as family and close friends are assumed to predominantly provide emotional support, whereas weak ties (*i.e.*, colleagues and acquaintances) are suggested to provide informational support as they come from adjacent networks and therefore are able to bridge to other sources of information [15]. Starting out from Granovetter's [16] thesis that weak ties have particular strengths that make them even more important than strong ties and the assumption that social networking sites are especially well suited to cater for (but also take advantage of) weak ties [17], current research on social capital in SNS gravitates to the opinion that weak ties are especially powerful and that bridging social capital is what makes SNS valuable.

Therefore, in sum, the current research on social capital in social networking sites is built on three presuppositions: (a) It is reasonable to distinguish in a dichotomous way between strong ties/bonding social capital and weak ties/bridging social capital; (b) strong ties provide emotional support and weak

ties provide informational support; and (c) weak ties are more important in social networking sites as the technological functions make it easy to stay in touch with weak ties and to exchange information. While some of these assumptions have been qualified (for example, Williams [11] acknowledges that bonding and bridging capital are related and that the factors empirically are oblique rather than orthogonal) or critically discussed against the background of empirical data (for example, Patulny and Svendsen [18], who criticize the primacy of weak ties), to date none of these assumptions has been challenged sustainably. In fact, most empirical studies test questions within this theoretical framework (see, for example, Ellison *et al.* [10], who show that the intensity of Facebook use is positively associated with perceived bridging and with perceived bonding social capital but do not consider the relation of both dimensions) but scholars rarely conduct a critical test of the basic assumptions themselves. Therefore, the goal of the present study is to empirically address the presuppositions and to provide first data to foster a discussion on the basic theoretical framework. In this line, the present research explores whether the dichotomous conceptualization does justice to the nature of relationships individuals manage online, whether people perceive weak ties to predominantly provide information whereas strong ties provide emotional support and whether weak ties are perceived as relatively more important in SNS.

2. Theoretical Background

2.1. Social Capital and Tie Strength in Offline Research

It has long been suggested that networks with other people and interpersonal relationships constitute an important resource that has been termed social capital [9,19]. Social capital has been defined as "the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" [20] (p. 119). By establishing and maintaining relationships, people can access a complex collection of emotional, structural, and economic advantages. People invest in these relationships (*i.e.*, by interacting with other people) since they expect returns in the sense of future social resources [21].

The different relationships people might maintain have been dichotomized by using various terms. For example, Granovetter [16] differentiated between strong and weak ties. In his much cited article, he described the "strength of weak ties" by demonstrating that searching for a job was not most positively affected by the number of strong ties to family and close friends but was dependent on weaker but widespread relationships with acquaintances. Referring to Granovetter [16], Putnam [15] described the attributes of weak ties and strong ties as bridging and bonding social capital. Strong ties are related to bonding social capital in that they provide emotional and social support, whereas weak ties (such as acquaintances and colleagues) are associated with bridging social capital and are therefore more likely to provide information that is not yet known. The latter relationships are therefore not characterized by depth but by breadth in the sense that they provide information that might broaden horizons or world views. This is due to the fact that, usually, weak ties are people from different backgrounds connecting (*i.e.*, bridging) between social networks who provide access to novel information. Therefore, in sum, these different kinds of relationships make different kinds of benefits available.

2.2. Social Capital and Tie Strength in Online Research

That the Internet may be suitable to support the establishment and maintenance of social capital was suggested even before the emergence of social networking sites [22]. Later on, the dichotomization depicted above has been transferred to online networks and has been operationalized in a popular measurement approach that further elucidated the dichotomous nature of the social capital approach. Williams [11] was the first to provide a reliable and comprehensive measure that distinguishes between perceived bridging and bonding social capital. He set out not to measure the network itself but to assess the outcome of social capital in terms of bridging and bonding effects in online as well as offline settings. Based on Putnam's [15] approach, he conceptualized and validated the Internet Social Capital Scale, which consists of a 10-item bonding subscale (e.g., "There are several people online I trust to help solve my problems") and a 10-item bridging subscale (e.g., "Interacting with people online makes me interested in things that happen outside of my town"). Putnam's [15] suggestion that the two types of social capital are related and not mutually exclusive was confirmed empirically as the factors were shown to be oblique rather than orthogonal to one another.

Ellison, Steinfield, and Lampe [10] were the first to apply the concept of social capital to Facebook empirically. Based on pilot interviews, however, they suggested complementing the measurement approach with a third type of social capital, which they termed maintained social capital. The items focus on the ability to get assistance from a previously inhabited community and refer to the fact that a primary function of Facebook is to keep in touch with high school friends. This subtype, however, has not been taken up comprehensively and will therefore not be considered in the following. Also, other authors have tried to give alternatives for the dichotomy, for example Teten and Allen [23], who suggest including latent ties, and Gilbert and Karahalios [24], who distinguish seven dimensions which can be used to differentiate ties, namely intensity, intimacy, duration, reciprocity, structure, emotional support, and social distance.

In their study, Ellison *et al.* [10] confirm that the intensity of Facebook use is positively associated with both individuals' perceived bridging social capital and perceived bonding social capital. Numerous subsequent studies have similarly focused on consequences of Facebook usage on perceived social capital and, more importantly, well-being: For example, Valenzuela, Park, and Kee [25] found a positive relationship between intensity of Facebook use and students' life satisfaction and social trust. Also, data by the Pew Research Center [26] demonstrated that Facebook users perceive higher levels of social and emotional support in their lives than other Internet users and non-Internet users. This is interpreted as due to the fact that Facebook users report they have significantly more close relationships than other Internet users and non-Internet users.

Additionally, various studies highlight the importance of moderating aspects. For example, the early study by Ellison *et al.* [10] already demonstrated that people with low self-esteem especially benefit from online interaction by accumulating social capital, which is connected to greater well-being. The authors suspect that this can be explained by the fact that those who use Facebook intensely reported having higher bridging social capital than those who used Facebook less. Therefore, Facebook use may be helping to provide increased information and opportunities for social contact so that especially students who have low satisfaction and low self-esteem can benefit from Facebook usage. However, other studies show that insecurity can also have detrimental effects: In the study by Liu, Shi, Liu, and

Sheng [27] the relation between social networking site usage intensity and social capital was stronger for people with low attachment anxiety, while people with high attachment anxiety obviously were not able to use the social networking site to enhance their social capital.

However, not only the personality of the user but also the way social networking sites are used determines the influence of Facebook usage on social capital. Hinting at the importance of users' active engagement in social networking sites, Burke, Marlow, and Lento [28] demonstrated that greater use of social networking sites is especially associated with increased social well-being, social capital, and reduced loneliness when engagement with Facebook is active rather than passive. Guo, Li, and Ito [29] showed that the usage of social networking sites with a social or informational goal is associated with an increase in perceived bridging social capital as well as increased life satisfaction. Usage with an entertainment goal, however, was not able to predict the perceived social capital and fostered feelings of loneliness. Kwon, D'Angelo, and McLeod [30] relate perceived bridging and bonding social capital to various motives and gratifications for Facebook usage. They show that intensity of Facebook usage as well as the gratification dimension of social relationships predicts bridging social capital while the dimension of escapism is negatively related to bonding social capital. Aubrey and Rill [31] found that habitual Facebook usage is connected to online bridging and offline network capital. The motive of socializing with others plays an important role as it mediates the relationship between Facebook usage and the acquisition of bridging and bonding social capital.

In a recent article, Ellison *et al.* [17] focus on bridging social capital and—instead of merely assessing the intensity of Facebook usage—explore the relationship between specific Facebook communication behavior and perceived bridging social capital. They conclude that social grooming and attention-signaling activities play an important role in maintaining access to resources in one's network as measured by bridging social capital. This is in line with prior results by Ellison, Vitak, Steinfield, Gray, and Lampe [32], who argued that one has to disclose information about oneself in order to be able to benefit from the network. Therefore, it is also important to know which aspects will influence the willingness to self-disclose. Craig and Wright [33] demonstrate that what prompts people to self-disclosure is having similar attitudes and social attraction. Self-disclosure will then foster long-term interdependence, which is crucial for maintaining relationships (for processes of mutual reinforcement of social capital and self-disclosure, see also the results of Trepte and Reinecke [34]).

2.3. On the Relation of Bridging and Bonding Social Capital and Their Relative Importance

When critically revisiting the assumptions and results depicted above, several aspects have to be discussed. First, it has to be decided whether the dichotomy between bridging and bonding is reasonable and, second, it has to be analyzed whether one of the social capital types is superior to the other, as has often been implied.

With regard to the first aspect, sociological literature has long discussed the usefulness and validity of the dichotomy between bridging and bonding social capital. For example, Coffé and Geys [35] criticize the distinction as rather *ad hoc* and conclude that most groups are likely to be both bridging and bonding to some extent. Similarly, Norris [36] argues that the conceptual distinction should be seen as a continuum rather than a dichotomy. Patulny and Svendsen [18] even warn that the strength of the bridging/bonding distinction can turn into a weakness if researchers assume that the two are mutually

exclusive. As mentioned above, Williams [11] also acknowledges that the dimensions are not mutually exclusive and empirically demonstrates that the factors are oblique instead of orthogonal. However, until today the distinction has still been used in a dichotomous way and not all authors seem to consider the fact that the dimensions might not be mutually exclusive. Empirically, Gilbert and Karahalios [24] even try to predict tie strength by means of social media data. In their study, they use more than 2000 social media ties to build a model that distinguishes between strong and weak ties with over 85% accuracy. This, on the one hand, can be interpreted as the distinction having merit; on the other hand, apparently, starting out from a theoretical model will restrict the findings upfront. As already mentioned above, the authors nevertheless suggest additional dimensions apart from the dichotomous distinction.

What has also been neglected so far is testing the assumption that weak ties predominantly provide informational support whereas strong ties first and foremost provide emotional support. Here, also, it has to be asked whether it is reasonable to dichotomize support into these two forms. In this regard, the approach could be augmented by specific concepts from psychological analyses which distinguish four types of social support [37,38]. The first form, emotional support, refers to offering empathy and caring. The second form is named instrumental support and implies specific aids and services, such as helping in moving. Thirdly, they mention informational support, which comprises giving advice, suggestions, and useful information. The fourth form is appraisal support, which includes providing feedback related to the self of the support-receiver.

Even more crucially, it has to be discussed whether—in both online and offline contexts—one of the social capital types is more important than the other. Starting out from Granovetter's [16] article, which was aptly called "The Strength of Weak Ties", the social capital literature has been dominated by approaches claiming that weak ties may be more important than strong ties. Originally, Granovetter [16] criticized the opposite, namely that most network models in sociology deal with strong ties. As a consequence, he stresses the cohesive power of weak ties and focuses on relations between groups. Subsequently, numerous empirical studies have supported Granovetter's thesis and confirmed that the diversity of a weak-tie network leads to greater gains [39]. Also, in organizations workers benefit from using computer-mediated weak-tie connections [11,40]. Additionally, weak-tie social networks grant access to broader social opinions, whereas cohesive, strong-tie groups shelter group members from outside opinions [41]. Similarly, Williams [11] summarizes that strong ties have little diversity in their backgrounds and tend to show out-group antagonism. Also, in a large-scale field experiment using social network technologies, weak ties have been shown to be superior in information dissemination [42]. While stronger ties were individually more influential, weak ties were responsible for the propagation of novel information within the social media environment.

Stressing the advantages of weak ties has even led scholars to assume that weak ties are so powerful that they can also fulfill functions that were originally ascribed to strong ties. Sandstrom and Dunn [43] report that interactions with weak ties in the offline context were related to social and emotional well-being. Their results suggest that the value of acquaintances should not be underestimated and that they are related to feelings of belonging. They conclude that "the current results are consistent with the idea that the more peripheral members of our social network shape our day-to-day happiness. So, chat with the coffee barista, work colleague, yoga classmate, and dog owner—these interactions may contribute meaningfully to our happiness, above and beyond the contribution of interactions with our close friends and family" [43] (p. 920). Similarly, Rozzell *et al.* [44] demonstrate that, on social

networking sites, relationally non-close individuals provide the same amount of social support as relationally close individuals.

Recently, however, criticism on the primacy of weak ties has also been uttered. Patulny and Svendsen [18] (p. 36) criticize hierarchies that place bridging over bonding and cite Colin Williams [45], who rhetorically asked, "What is so wrong with having deep relationships with other individuals rather than fleeting acquaintances?". In line with this, other research shows that social and emotional support is strongly dependent on bonding social capital (see, for example, Wellmann & Wortley [46], who show that tie strength is the strongest predictor of feelings of emotional support). That, indeed, loose contacts might not be sufficient to increase social and emotional support, is shown by Kalpidou, Costin, and Morris [47]: They demonstrate that first-year students, at least, do not benefit from intense Facebook usage and its opportunity to connect socially. For them, the number of Facebook friends was negatively associated with emotional and academic adjustment. Only for students in later college life was the number of Facebook friends positively related to social adjustment and attachment to the institution.

Adding to the literature on the relative importance of weak ties, it has been discussed that the Internet and especially social networking sites are well suited for the maintenance of weak ties. From the early days of the Internet on, it has been argued that computer-mediated social networks can assist in maintaining both weak and strong ties [48]. But already the pioneering work of Ellison *et al.* [10] on social capital in the context of social networking sites suggested that Internet-based linkages are especially important for the formation of bridging social capital. Social networking sites allow their users to create large networks in which they can form and maintain weak ties cheaply and easily [49]. Hampton, Lee, and Her [50] show that due to the pervasive nature of new technologies, Internet-based networks are more diverse (and therefore more valuable in terms of bridging social capital) than at any time in recent history. Based on this assumed primacy of weak ties on social networking sites like Facebook, Ellison *et al.* [17] in recent articles even limit their research on social capital to the bridging type. They show that not only generic Facebook use is related to bridging social capital but that specific Facebook relationship maintenance behaviors (e.g., wishing a Facebook friend "Happy Birthday") can be identified to better explain the accrual of bridging social capital (see Tong and Walther [51], who consider Facebook as a relationship maintenance tool). In line with these results, Trepte, Dienlin, and Reinecke [52] demonstrate that social networking sites are not well suited to lend emotional support but that they are better suited to leverage informational support compared to offline social contexts. Summarizing previous research, Kwon *et al.* [30] also strongly suggest and conclude that Facebook is more prone to support bridging social capital, although they acknowledge that results are inconsistent and they also cite studies showing a connection between Facebook usage intensity and bonding social capital.

2.4. The Present Research

Altogether, the literature suggests that when distinguishing between bonding and bridging social capital, bonding social capital/strong ties will provide emotional support and bridging social capital/weak ties will provide informational support. Also, it is assumed that bridging social capital/weak ties are especially important in social networking sites as the Internet in a unique way enables people to stay in touch with weak contacts (which are valuable information resources as they have different backgrounds)

and to mutually provide information. Moreover, it has been suggested that weak ties are not only valuable in the way they are assumed to be valuable in the theoretical framework (*i.e.*, by providing information) but can additionally lend emotional support—which makes it seem plausible and worthwhile to have and cultivate large networks on Facebook.

Therefore, the goal of the present study is to empirically address the presuppositions and to provide first data to foster a discussion on the basic theoretical framework. In this line, the present research explores whether the dichotomous conceptualization does justice to the nature of relationships individuals manage online, whether people perceive weak ties to predominantly provide information whereas strong ties provide emotional support, and whether weak ties are perceived as relatively more important in SNS.

In order to address these questions, we choose to follow a strictly user-centered approach. Our results therefore do not allow us to derive any knowledge on which function weak and strong ties actually fulfill or whether either weak ties or strong ties are in fact more beneficial in social networking sites, but we focus on the perception of the user (as has been done in most recent studies on social capital in SNS). Additionally, we suggest focusing not only on the perception of the whole network but on having participants imagine specific Facebook friends when answering questions on emotional and informational support. Commonly, studies on SNS employ one scale to measure bridging and bonding social capital (as, for example, the scale by Williams [11] mentioned above) and another for the network in general. By breaking this down to specific contacts we expect a better validity in regard to people's impressions about the relative importance of different kinds of ties. What is new in our approach is trying to disentangle the type of connection (weak/bridging *versus* strong/bonding) from the alleged function (informational *versus* emotional support) by asking participants about the value and functions they ascribe to three different types of online contacts (close, medium, and non-close contacts).

In line with what we discussed above, we were interested in the relationship between bridging social capital/informational support and bonding social capital/emotional support. In the literature, it has been shown that—when considered for the whole network—both aspects are related. We therefore assume that, also on the level of single contacts, bridging social capital/informational support and bonding social capital/emotional support will correlate meaning that those who are expected to provide emotional support are also expected to provide informational support.

> H1. Bridging social capital/informational support and bonding social capital/emotional support correlate when assessed for three different types of contact.

With regard to disentangling types of contact and support functions, we want to test whether the theoretically derived mapping of weak ties to informational support and strong ties to emotional support holds in the perception of the users and when focusing on specific strong/weak ties. We therefore derive from the literature that:

> H2. Participants perceive higher bonding social capital/emotional support for persons with whom they have stronger relationships than for persons with whom they have weaker relationships.

H3. Participants perceive higher bridging social capital/informational support for persons with whom they have weaker relationships than for persons with whom they have stronger relationships.

In contrast to the primacy of weak links as assumed in the literature summarized above, we expect that when asked directly which type of contacts they perceive to be more important on Facebook, it will be the strong instead of weak contacts. Recent literature has employed innovative measures in order to assess the subjective importance of Facebook features and services by asking participants how much money they would spend [53]. Related to this, we assume that participants would rather share a cash prize with strong ties and would be willing to invest more in strong ties:

H4. Participants allocate greater amounts of a cash prize to persons with whom they have stronger relationships than for persons with whom they have weaker relationships.

H5. Participants are willing to invest more in persons with whom they have stronger relationships than in persons with whom they have weaker relationships.

In order to gain additional knowledge on what influences the perception of bonding and bridging social capital as measured for the whole network instead of for single ties, we conducted additional analyses. Based on the literature of social support types [37,38], we aimed to explore which of the support types (measured as number of contacts in the network that provide emotional support, instrumental support, informational support, and appraisal support) would be the strongest predictors for perceived quality of bonding social capital and bridging social capital. Referring to the literature, which states that informational support is related to bridging social capital and emotional support is related to bonding social capital, we hypothesize:

H6. Reported number of contacts providing emotional support will best (compared to number of contacts providing informational support, instrumental support, and appraisal support) predict perceived quality of bonding social capital.

H7. Reported number of contacts providing informational support will best (compared to number of contacts providing emotional support, instrumental support, and appraisal support) predict perceived quality of bridging social capital.

We assumed that age, gender, and number of Facebook contacts, as well as individual need to belong, will influence the criteria and were therefore taken into account as control variables.

Additionally, in order to see which kind of support by online contacts will be valued most, we were interested in what will best predict the perception of usefulness of contacts. Here, we opted to ask how many of the contacts are perceived to be deletable (see recent research on unfriending [54]) and tested which kind of perceived social support will contribute most to keeping people from deleting some of their contacts. Therefore, we asked:

RQ1. Which kind of support (reported number of contacts providing emotional support, informational support, instrumental support, and appraisal support) will best predict the number of contacts that can be deleted?

3. Method

3.1. Sample

Three hundred and thirty-seven participants (186 female) took part in the online survey. Fifteen cases were excluded because they either indicated they have fewer than 20 friends on Facebook (n = 11, which makes it difficult to adhere to the task of identifying three different kinds of contacts) or more than 1000 (n = 4). Moreover, we excluded one person who entered an irrational number for the distance between the own and the contact's residence and four participants who completed the survey in less than 5 min. The final sample included N = 317 participants (179 female, 134 male; four gave no answer to the question). Their age ranged from 16 to 64 (M = 25.35, SD = 6.97). Most of them were students (71.9%), 13.2% were employed, 3.5% self-employed, 3.2% non-working, 2.8% pupils, 2.2% officials, and 3.2% indicated another occupation. The majority had at least a university entrance degree (94.95%); 35.96% even had a university degree.

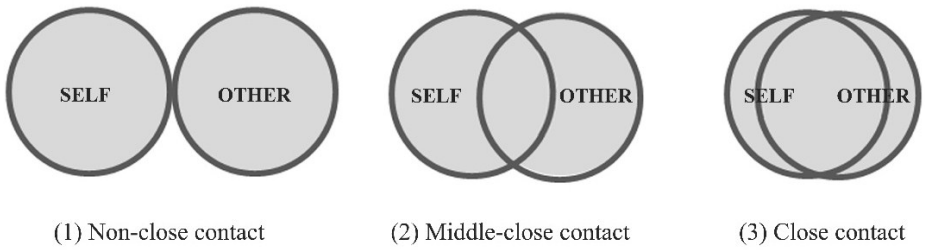
With regard to their Facebook use, participants stated to spend M = 59.61 (SD = 71.54) min per day on Facebook in the last week. Moreover, the number of Facebook contacts ranged from 25 to 920 with a mean of M = 229.56 (SD = 153.29).

The survey addressed German Facebook users (as the survey was administered in German) who were recruited online via postings in several Facebook groups and online forums. At the end of the questionnaire, participants had the opportunity to take part in a raffle for one of six coupons (1 × 50€, 5 × 20€) for a large e-commerce site.

3.2. Measures

In order to identify three kinds of contacts that systematically differ with regard to tie strength, we retreated to Granovetter's definition of tie strength: "the strength of a tie is a (probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie." [16] (p. 61). By using three illustrations, (1) no overlap of other and the self; (2) partial overlap; (3) great overlap, of the Inclusion of Other in the Self scale [55], we asked participants for each of the three graphics to think of one of their Facebook contacts who represents the relationship presented by the graphic (see Figure 1). The scale has been demonstrated to have convergent validity with the Relationship Closeness Inventory [56] and the Sternberg Intimacy Scale [57] and is therefore ideally suited to assess the dimensions mentioned by Granovetter [16]. Recent literature demonstrates that the measure can be employed successfully to measure relationship closeness on Facebook [44].

Figure 1. Illustrations of relationship strength.



Additionally, in the sense of a manipulation check, we measured the following attributes for each kind of tie:

Frequency of offline contact was measured by two items ("How often do you meet this person offline (personally)?" and "How often do you talk with this person on the phone?"), rated on a 7-point scale from never to often. Due to the fact that only two items were combined, the internal consistency of the items was not very high (1st contact: Cronbachs $\alpha = 0.70$; 2nd contact: $\alpha = 0.52$; 3rd contact: $\alpha = 0.55$).

Frequency of online contact was measured by five items ("How often do you communicate with this person online (other than via Facebook; e.g., by email or Whatsapp)?", "How often do you visit the Facebook profile of this person?", "How often do you read Facebook posts of this person?", "How often do you write private messages with this person via Facebook?" and "How often do you react to Facebook posts of this person (e.g., by liking or commenting)?"), rated on a 7-point scale from never to often. The internal consistency of the items was satisfying (1st contact: $\alpha = 0.84$; 2nd contact: $\alpha = 0.74$; 3rd contact: $\alpha = 0.78$).

Physical distance between places of residence was measured by an open question in which participants were asked to indicate the number of kilometers.

Bonding social capital/emotional support: Participants were asked to indicate on a 7-point scale, from "not at all" to "very much," how much they agreed with the following two statements: "I trust this person to help me with my problems" and "When I have important personal decisions to make, I can ask this person for advice". The items were based on the Internet Social Capital Scales (ISCS, Williams [11]) and adapted to a single person. The internal consistency was satisfying (1st contact: $\alpha = 0.85$; 2nd contact: $\alpha = 0.87$; 3rd contact: $\alpha = 0.88$).

Bridging social capital/informational support: Participants were asked to indicate on a 7-point scale, from "not at all" to "very much," how much they agreed with the following two statements: "The interaction with this person makes me interested in what people think who are different from me" and "The interaction with this person motivates me to try new things". The items were based on the Internet Social Capital Scales (ISCS, Williams [11]) and adapted to a single person. As the items measure the outcome of bridging social capital, the scale was named bridging social capital/informational support. The internal consistency was satisfying (1st contact: $\alpha = 0.81$; 2nd contact: $\alpha = 0.75$; 3rd contact: $\alpha = 0.71$).

Investment: In order to measure the importance and perceived value of the contact, participants were asked: If Facebook establishes a fee of 1€ for each person in the contact list, how likely would you pay this 1€ for this person to remain in your contact list? Answers were given on a 7-point scale from very unlikely to very likely.

Similarly, in order to assess the willingness to support the different contacts, participants were asked the following lottery question: "Imagine you had won 100€ in a Facebook lottery, which you had to allocate among your Facebook contacts. How much of the 100€ would you give to this person?". Answers were given in absolute numbers.

After this first block of questions regarding individual Facebook contacts with different relationship strengths, we asked several questions about the whole social network on Facebook.

Social Support: Participants were asked to assess their Facebook contacts with regard to different social support dimensions and to indicate for each of the following cases how many contacts in their Facebook list they think would give them the specific kind of support. Specifically, we asked "How many of your Facebook contacts provide you with information which could be important and interesting

for you (e.g., recommendations for restaurants, hints for job offers)?" (for informational support), "How many of your Facebook contacts would you expect to give emotional support when you feel bad (e.g., in terms of care or comfort)?" (for emotional support), "From how many of your Facebook contacts would you expect to receive concrete material (e.g., lending of technical devices) or non-material help (e.g., helpers for moving)?" (for instrumental support), and "From how many of your Facebook contacts can you expect personal feedback (e.g., in terms of appreciation or criticism)?" (for appraisal support).

Deleting Facebook contacts: Moreover, we asked participants to indicate how many of their contacts they could imagine deleting against the background of the preceding observation (M = 69.47, SD = 82.63) and how many Facebook contacts they had deleted before (M = 27.44, SD = 59.09).

Investment: We assessed how many of their Facebook contacts participants would keep in their Facebook contact list, if Facebook establishes a fee of 1€ for each person in the contact list.

Bonding and bridging social capital: We used the bonding subscale of the Internet Social Capital Scale (ISCS, Williams [11]) to measure bonding social capital. The internal consistency of the 10 items was high ($\alpha = 0.85$, M = 4.4, SD = 1.18). Furthermore, bridging social capital was assessed with the corresponding 10-item subscale ($\alpha = 0.86$, M = 4.04, SD = 1.12).

We assessed several further variables that were used as control and moderating variables. Demographic information such as gender, age, level of education, occupation, and migration background was measured. Additionally, we assessed the number of contacts on Facebook as well as time spent on Facebook (min per day during the last week). Further, we measured the participants' need to belong by a newly developed 10-item scale [4]. Internal consistency of the items was satisfying ($\alpha = 0.72$, M = 3.49, SD = 0.58).

4. Results

Manipulation check: As a manipulation check, we calculated whether the frequency of offline and online contact is higher for persons with whom participants have stronger relationships than for persons with whom they have weaker relationships.

Repeated measures analyses of variance revealed a significant effect of the within-factor relationship strength on frequency of offline contact (F (1.66,524.84) = 944.38, $p < 0.001$, $\eta_p^2 = 0.75$) as well as on the frequency of online contact (F (1.78,561.91) = 938.41, $p < 0.001$, $\eta_p^2 = 0.67$) (Greenhouse Geisser corrected as Mauchly test was significant). Participants indicated highest frequency of offline (M = 5.34, SD = 1.46) as well as online (M = 5.04, SD = 1.36) contact with strong ties and lowest frequency of offline (M = 1.7, SD = 0.94) as well as online (M = 2.4, SD = 1.11) contact with weak ties; contact frequency for ties of moderate relationship strength was on a medium level for offline contact (M = 3.24, SD = 1.21) as well as online contact (M = 3.86, SD = 1.13) and significantly lower than contact frequency with strong ties as well as significantly higher than contact frequency with weak ties. Therefore, in line with Granovetter's [16] definition of tie strength, people spend more time with strong than with weak ties both online and offline.

As additional information, in order to be able to interpret the results, we analyzed whether people live closer to their strong ties than to weaker ties. Here, a repeated measures analysis of variance with the within-factor relationship strength and the dependent variable distance revealed a significant effect (F (1.84,573.68) = 7.08, $p = 0.001$, $\eta_p^2 = 0.22$). Strong ties (M = 204.89, SD = 1091.31) and ties of

moderate relationship strength (M = 298.02, SD = 1453.25) lived significantly closer to participants than weak ties (M = 565.42, SD =1876.79). The difference between strong ties and ties of moderate relationship strength was not significant.

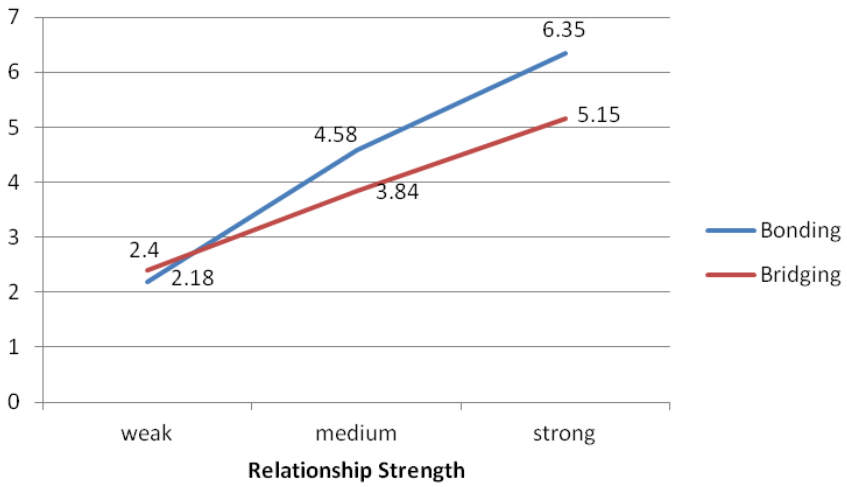
4.1. Addressing Single Ties: Relation and Relative Importance of Weak and Strong Ties in Social Networking Sites

> H1. Bridging social capital/informational support and bonding social capital/emotional support correlate when assessed for three different types of contact.

We were interested to see whether the assessment of bonding and bridging social capital would vary independently of each other or whether they would correlate. Supporting H1, correlation analyses revealed high correlations between perceived bonding and bridging social capital of weak ties (r = 0.67, p < 0.001), ties of moderate relationship strength (r = 0.49, p < 0.001), and strong ties (r = 0.42, p < 0.001). Moreover, perceived bonding and bridging social capital of all Facebook contacts were similarly well correlated (r = 0.29, p < 0.001).

When inspecting the means in Figure 2, it can be seen that the high correlation for weak ties is due to the fact that both bridging and bonding social capital is perceived to be low, whereas strong ties are evaluated as providing high bonding AND bridging qualities.

Figure 2. Bonding and bridging social capital for strong, medium, and weak ties.



> H2. Participants perceive higher bonding social capital/emotional support for persons with whom they have stronger relationships than for persons with whom they have weaker relationships.

A repeated measures analysis of variance revealed a significant effect of the within-factor relationship strength on perceived bonding social capital (F (2,632) = 844.23, p < 0.001, η_p^2 = 0.73). Perceived bonding was highest for strong ties (M = 6.35, SD = 1.14), significantly lower for ties of moderate relationship strength (M = 4.58, SD = 1.66), and lowest (again significantly lower) for weak ties (M = 2.18, SD = 1.52). Therefore, H2 is supported.

> H3. Participants perceive higher bridging social capital/informational support for persons with whom they have weaker relationships than for persons with whom they have stronger relationships.

In order to test H3, a repeated measures analysis of variance with the within-factor relationship strength and the dependent variable bridging social capital was conducted. Results revealed a significant effect of relationship strength on perceived bridging social capital (F (1.83,578.60) = 404.35, $p < 0.001$, $\eta_p^2 = 0.56$). Perceived bridging was highest for strong ties (M = 5.15, SD = 1.53), significantly lower for ties of moderate relationship strength (M = 3.84, SD = 1.5), and lowest (again significantly lower) for weak ties (M = 2.4, SD = 1.46). Therefore, H3 is not supported, but results, on the contrary, indicate that stronger relationships are perceived to provide higher bridging qualities.

> H4. Participants allocate greater amounts of a cash prize to persons with whom they have stronger relationships than to persons with whom they have weaker relationships.

A repeated measures analysis of variance revealed a significant effect of relationship strength on the amount of contribution (F (1.31,411.91) = 369.02, $p < 0.001$, $\eta_p^2 = 0.54$). Highest amounts of money would be given to strong ties (M = 40.48, SD = 30.04), significantly lower amounts would be given to ties of moderate relationship strength (M = 13.94, SD = 16.41), and lowest amounts (again significantly lower) would be given to weak ties (M = 4.11, SD = 11.29). Thus, H4 is supported.

> H5. Participants are willing to invest more in persons with whom they have stronger relationships than in persons with whom they have weaker relationships.

A repeated measures analysis of variance revealed a significant effect of relationship strength on investment likelihood (F (1.65,520.47) = 361.28, $p < 0.001$, $\eta_p^2 = 0.53$). Investment was highest for strong ties (M = 5.3, SD = 2.4), significantly lower for ties of moderate relationship strength (M = 4.25, SD = 2.23), and lowest (again significantly lower) for weak ties (M = 2.0, SD = 1.72). Thus, H5 is supported.

4.2. Addressing the Whole Network: Predicting Perceived Bonding and Bridging Social Capital

When assessing the perceived quality of not only selected specific contacts but for the social network in general, we asked participants to indicate the number of contacts that provide informational support, emotional support, and instrumental support, as well as appraisal support. Descriptive values (see Table 1) suggest that most contacts are perceived to provide appraisal support (*i.e.*, give feedback), followed by instrumental support (e.g., lending of technical devices) and informational support (e.g., recommendations for restaurants, job offers). The lowest number of contacts was perceived to provide emotional support (only 16 out of 230 contacts on average). Additionally, it can be seen that a rather large number of contacts (roughly one third of actual contacts) is perceived as deletable and that, in fact, a considerable number have already been deleted.

Table 1. Means, standard deviations, and intercorrelations among the measures addressing individuals' whole social network.

Measure	***N***	**M**	**SD**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1. Number of Facebook contacts	317	229.56	153.29	-									
2. Number of contacts that provide informational support	317	22.03	29.07	0.31 **	-								
3. Number of contacts that provide emotional support	317	16.08	16.47	0.32 **	0.40 **	-							
4. Number of contacts that provide instrumental support	317	24.04	27.36	0.32 **	0.26 **	0.37 **	-						
5. Number of contacts that provide appraisal support	316	29.97	40.12	0.37 **	0.19 **	0.37 **	0.60 **	-					
6. Number of contacts that could be deleted	316	69.47	82.63	0.55 **	0.14 *	0.16 **	0.05	0.15 **	-				
7. Number of contacts that have already been deleted	316	27.44	59.09	0.08	0.11	0.09	0.06	0.12 *	0.18 **	-			
8. Need to Belong	317	3.49	0.58	0.25 **	0.13 *	0.10	0.08	0.03	0.15 **	−0.02	-		
9. Perceived bonding social capital	317	4.40	1.18	0.07	0.19 **	0.25 **	0.19 **	0.19 **	−0.05	−0.06	0.16 **	-	
10. Perceived bridging social capital	317	4.04	1.12	0.18 **	0.12 *	0.22 **	0.08	0.15 *	0.04	−0.04	0.23 **	0.29 **	-

* $p < 0.05$; ** $p < 0.01$.

In order to examine what predicts the perceived quality bonding social capital (H6) and bridging social capital (H7), hierarchical regression analyses were conducted for these two criterion variables. In steps 1–3 we entered sociodemographic and personality variables in order to control for individual differences, while in the fourth step we entered the number of contacts who are perceived to provide the various forms of social support. Altogether, predictors in the analyses were (1) age and gender (dummy-coded); (2) number of Facebook contacts; (3) participants' individual need to belong; and (4) number of contacts providing informational, emotional, instrumental, and appraisal social support.

The first regression for the criterion of bonding social capital revealed significant effects of gender and the number of contacts providing emotional support (see Table 2). Females perceived higher levels of bonding social capital. Also, this means that a greater number of Facebook contacts who can provide emotional support led to stronger perceived bonding social capital.

The second regression analysis for the criterion of bridging social capital revealed significant effects of the number of Facebook contacts, need to belong, and the number of contacts providing emotional support (see Table 2). Results showed that having more Facebook contacts in general, a higher need to belong, and a greater number of Facebook contacts who can provide emotional support led to stronger perceived bridging social capital. This shows that bridging social capital is—just like bonding social capital—affected by the number of ties that can support individuals emotionally.

Table 2. Hierarchical regression analyses: effects of age, gender, number of Facebook contacts, need to belong, and number of contacts providing informational, emotional, instrumental, and appraisal social support.

Predictor	Bonding Social Capital			Bridging Social Capital			Number of Contacts That Could Be Deleted		
	R^2	β	*p*	R^2	β	*p*	R^2	β	*p*
Step 1	0.029			0.003			0.010		
Age		−0.068	0.227		−0.001	0.987		−0.099	0.083
Gender		0.155	0.006		0.051	0.374		−0.018	0.745
Step 2	0.033			0.036			0.299		
Number of Facebook contacts		0.066	0.251		0.189	0.001		0.552	<0.001
Step 3	0.043			0.074			0.299		
Need to belong		0.108	0.074		0.211	<0.001		0.009	0.864
Step 4	0.125			0.107			0.317		
Number of contacts providing *informational* support		0.063	0.301		−0.017	0.786		−0.003	0.956
Number of contacts providing *emotional* support		0.179	0.005		0.172	0.008		0.022	0.695
Number of contacts providing *instrumental* support		0.050	0.474		−0.068	0.333		−0.162	0.009
Number of contacts providing *appraisal* support		0.130	0.067		0.095	0.181		0.028	0.652

A regression analysis for the criterion of number of contacts that could be deleted revealed a significant effect of the number of Facebook contacts as well as the number of contacts providing instrumental support (see Table 2). This shows that having more Facebook contacts positively affected the number of contacts that one could imagine deleting from the contact list. However, a higher number of contacts who can provide instrumental support led to a smaller number of contacts that one could imagine deleting.

5. Discussion and Conclusions

The goal of the present study was to provide first data which can be used to critically reflect on several of the basic assumptions researchers in current analyses of social capital in social networking sites rely on. Therefore, we addressed whether (a) the dichotomous conceptualization does justice to the nature of relationships individuals manage online; (b) whether the two types of social capital are exclusively related to the kind of social benefits they are widely supposed to have; and (c) whether weak ties are perceived as relatively more important in SNS. By employing another kind of measurement approach in which users were asked to rate the value and ascribe social benefits (in the sense of types of perceived support) for specific examples of three different types of contacts, we tried to disentangle contact type and function. We thereby analyzed the field from a different perspective with a view to extending and challenging previous assumptions. We do not suggest that previous research did not give valid results on the nature of social capital in SNS, but we aimed to test whether social capital patterns and experiences would come out differently when looking at the phenomenon from a different angle and when thinking outside the given theoretical box.

First, we wanted to discuss whether the dichotomous conceptualization does justice to the nature of relationships individuals manage online. Here, the most important indication in our data is the fact that in the perception of the users, bridging and bonding capital is highly correlated. For all three examples of contact types (weak, middle, and strong ties) we found a high correlation, the relation being strongest for weak ties (which are evaluated to provide neither informational/bridging capital nor emotional/bonding capital). Therefore, in the perception of the users, bridging and bonding capital seems to be the same, or at least both types of support seem to go together in the sense that those who are perceived to provide emotional support are also perceived to provide informational support and those who do not provide one kind also do not provide the other. That this relation—to that extent—has not been reported in earlier studies is probably due to the way we measured the ascription of functions to the type of contact by distinguishing between three types of contacts (with participants having specific persons of that corresponding category in mind). Previous research looked at the overall bridging and bonding potential of the whole network instead of single contacts, and/or analyzed the effects of intensity of SNS usage on either perceived bridging or bonding social capital without addressing the relation of the latter (see, for example, [10]). And indeed, when we looked at the overall correlation of bridging and bonding capital in our sample we observed lower correlations compared to the correlations for the specific ties. Still, we do not mean to call into question these previous studies and their results as they certainly have merit for the research realm but we think that our results at least give reason to critically reflect on whether a user-centered approach should continue to assume that people perceive bridging and bonding social capital differently. Also, we suggest that this finding might not only hold true for this kind of computer-mediated environment but might also apply for offline contacts. It is, however, particularly relevant for social networking sites as in this realm the distinction of bridging and bonding social capital and the primacy of weak ties has recently been stressed.

Second, we aimed to call into question whether users perceive weak ties as predominantly providing information whereas strong ties first and foremost provide emotional support. The results of H2 confirm the current belief that strong ties especially lend emotional support (see [15]). However, when we tested the assumption that weak ties first and foremost provide informational support, the data did not confirm

this assumption. On the contrary, users perceive their strong ties to not only lend emotional but also informational support, whereas weak ties were perceived to not lend any kind of support.

This can also be derived from the regression analyses which look at the predictors of perceived bonding and bridging social capital. While—as can be expected—the overall perception of bonding social capital is best predicted by the number of contacts providing emotional support, the overall perception of bridging social capital is not predicted by number of contacts that are perceived to provide informational support, as theory would suggest. Instead, the strongest predictor is people's individual need to belong, in that people who have a high need to belong perceive their contacts to provide the most bridging qualities. This is in line with earlier research that showed that, for people with a higher need to belong, it is more important to establish and cater for multiple contacts on SNS [4]. Furthermore, the number of Facebook contacts in general as well as the number of contacts providing emotional support predicts the perception of bridging social capital. Here, the fact that the more contacts a person has, the more bridging capital he/she perceives is perfectly in line with the general assumption that SNS are prone to providing bridging social capital, as it is easy to cater for multiple, heterogeneous contacts [17]. At first glance, this might be taken as an indication that, objectively and as stated in the literature, people with larger networks indeed have informational benefits. However, the fact that the number of contacts providing emotional but not informational support predicts the perception of bridging social capital hints at the fact that users do not—or at least do not consciously—assume that contacts providing information will contribute to the overall perceived quality of bridging social capital. Instead, here also, contacts providing emotional support are perceived as more crucial.

This suggests that close contacts are seen to be able to provide relevant, new information in online settings. The assumption that strong ties in face-to-face conversations will not yield new information might still hold true—due to the fact that (a) the background knowledge is homogeneous [11] and (b) face-to-face conversations might lead to the phenomenon Stasser and Titus [58] described as the failure to pool information because of the tendency to merely discuss what everyone already knows. However, in Facebook this might be different because the environment is set to constantly receive and disseminate new information—which is in most cases is not sent to all contacts but most probably only to closer friends. We would like to stress here that the two items we selected to measure informational/bridging and emotional/bonding capital for each kind of tie were chosen in order to represent the heart of the idea of emotional *versus* informational support. For informational support we, however, retreated to the notion of getting interested in new things and thoughts instead of, for example, job offers, as the latter might not have been relevant for the specific sample we expected to reach.

Our results do not necessarily suggest that weak ties do not actually provide valuable information. The basic sociological assumption that weak ties are superior in information dissemination, also suggested by objective analyses, may still hold which show [42]. Our results, however, demonstrate that although weak ties might be important and necessary for providing information, users do not perceive their networks in that way—at least not as measured for a single weak tie. Instead they experience that strong ties provide them with valuable information. This might simply be due to the wish for consistency (people who are liked and valued are also seen as important information providers) or can result from the fact that information given by strong ties is actually more valuable from a subjective point of view since close friends and family simply know better than acquaintances what movies one would like, which food one would appreciate, and which job or internship would fit.

We also have to acknowledge that the results might be artifacts produced by our measurement approach: In order to have participants think of specific people of specific contact types (weak, middle, and strong ties) we used three pictures of the Inclusion of Other in the Self scale [55]. Here, it might be problematic that the figure that should prompt weak ties may have depicted a relationship that was too loose (in the sense that participants thought of strangers who merely accidentally became part of their friend list). This could explain why users would not perceive them as providers of relevant information. However, according to the theory then at least the middle figure (partly overlapping circles) should have been perceived as a more valuable information provider compared to the strong tie—which was not the case.

Third, we wanted to challenge the assumption that weak ties are perceived as relatively more important in SNS. The results for H4 and H5 strongly suggest that when asked directly, users evaluate their strong ties on Facebook to be more important than the weaker ones. Closer ties will be treated more favorably and one is more willing to invest in close ties by potentially paying fees to maintain the contact on Facebook.

While this (given the way the questions were posed) is probably not very surprising, there are other indications that users would not value a social networking site that would consist of rather weak instead of strong ties. Users seem to be ready to delete on average one third of their SNS contacts—given the results above, this will probably not be recruited from strong ties but from weak ties. This is confirmed when looking at the regression analysis predicting the number of contacts that can be deleted. Here, the analysis shows that the more contacts people have, the more they are willing to delete some. While this is not surprising, as this can emerge as a significant predictor even when all people indicate an equal share of their contacts as deletable, it is more astonishing that neither emotional nor informational (nor appraisal) support determines the number of persons to delete. Here, it is only instrumental support that keeps users from deleting contacts. Hence, when someone expects his/her contacts to potentially provide instrumental support (*i.e.*, lending something or helping with moving apartments), he/she will be less willing to delete them. This points to the importance of extending the theoretical framework to forms of social support that go beyond emotional and informational support [37,38].

With regard to the question of which kind of support is perceived to be predominant in SNS, an analysis of the descriptive data on number of contacts that provide different types of support seems to be beneficial. In line with the nature of social networking sites, the largest number of contacts is perceived to provide appraisal support (*i.e.*, give feedback). The next largest number is contacts that provide instrumental support, followed by informational support. While this does not directly tell us anything about the perceived importance of informational support, it shows that only a small group of people (22 out of 230) are perceived to provide informational support. Here, the question can be raised whether we succeeded in operationalizing informational support in such a way that participants would understand the concept in the same way it has been put forward by scholars. However, as the examples given in our questionnaire mirror what is assumed about bridging social capital (namely that this means to receive information on diverse fields and to be pointed to things one did not know), we do not think that the results are due to a different understanding between scholars and participants about what informational support entails. Therefore, it might be concluded that users actually have the opinion that only a small percentage of their network provides them with valuable information.

But why would users not value weak ties in the way suggested in recent research? Possibly users simply do not recognize or remember the beneficial information they receive from weak ties. Another reason, however, might be that due to increasing information overload on Facebook more and more people decide to block or ignore information from more distant contacts. Here, also, the specific Facebook algorithms that probably result in the fact that we receive more information from closer contacts than from weaker contacts might be causative. Summing up the results and discussion, we can conclude that, contrary to current assumptions, users perceive strong ties as more important as weak ties and ascribe both emotional and informational support more to strong than to weak ties. Interestingly, these results cannot only be derived from the results stemming from the new measurement approach we employed, but were also supported in the second part of our analyses, in which we more conventionally retreated to common measures for the whole network.

In sum, our approach and results have theoretical, methodological, and applied implications. With regard to theory, social capital research has to be expanded to consider people's subjective perceptions in greater detail as they do not necessarily match objective measures. With regard to methodology, it is therefore necessary to revisit the way the outcome of social capital is measured. First of all, during our study, the fact that the widely used scale by Williams [11] assesses the perception of the quality of emotional *versus* informational support but not bridging and bonding social capital in the sense of a potential independent variable became very salient. This is something that Williams himself neatly discusses in the original article but that seems to have been blurred in further usage. If our results—that it is necessary to be more careful about the equalization of weak ties/bridging social capital/informational support and strong ties/bonding social capital/emotional support—are to be taken seriously, the terminology of bridging and bonding social capital should maybe be avoided as it links weak ties and informational support as well as strong ties and emotional support. Moreover, there might be additional problems with the common measurement approach: The scale itself has recently been criticized [59], but primarily with regard to other aspects than the ones mentioned here. Additionally, our results show that the measurement approach must go beyond informational and emotional support and should at least include further types of social support such as instrumental and appraisal support [37,38] (which both appear to be even more important and salient in social networking sites than informational and emotional support).

With regard to applied implications, it might be helpful to keep in mind and observe whether Facebook algorithms, which probably further foster the importance and salience of strong ties, contribute to decreasing the potential power of weak ties.

In terms of general limitations (besides the more specific limitations mentioned above) we have to acknowledge that this research should be replicated in other cultures. Although it is not highly likely, the fact that the sample is German might have influenced the results, as there are a few studies which indicate cultural differences with regard to usage patterns of social networking sites [60]. Germans, for example, differ from American social networking sites' users in the sense that Germans tend to disclose less [61]. Also, comparisons between individualistic and collectivistic cultures might be especially informative with regard to the primacy of weak *versus* strong ties. It might also be important to consider other SNS than Facebook. Given the fact that all SNS (see, for example, Google+) share similar basic features, we would assume our results are generalizable to other SNS. However, this might already be different for business networks such as LinkedIn, so that the study would need to be replicated in this

realm. Also, additional aspects of the users should be considered (see, for example, Ellison *et al.* [32], who advocate taking Internet skills into account). Furthermore, as we acknowledged that the functions of weak and strong ties may be existing as theoretically assumed but might just not be perceived that way by users, future research should combine objective, big data analyses of the networks with surveys such as ours. Here, analyses as presented by Park, Lee, and Kim [62] might be a good starting point.

In conclusion, we hope to have raised some important questions that might be addressed further in future research. The fact that we found indications that some of the basic assumptions of social capital research in social networking sites should be critically reconsidered should not lead to questioning the merit of previous research but instead should prompt new directions of research and extend current theoretical frameworks. In sum, we would derive from our data that—in the perception of the users—bridging and bonding social capital might not be as distinct as commonly assumed, that the relationship between type of contact and ascribed social support function is not seen by users, and that users appreciate their strong ties on Facebook more than their weak ties.

Author Contributions

All authors contributed equally to the manuscript. All authors read and approved the final manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

References

1. Allfacebook.de. Der Inoffizielle Facebook Blog [The Inofficial Facebook Blog]. Available online: http://allfacebook.de/zahlen_fakten/offizielle-facebook-nutzerzahlen-q3-2013 (accessed on 28 July 2014).
2. Baumeister, R.F.; Leary, M.R. The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychol. Bull.* **1995**, *117*, 497–529.
3. Gangadharbatla, H. Facebook me: Collective self-esteem, need to belong, and Internet self-efficacy as predictors of the iGeneration's attitudes toward social networking sites. *J. Interact. Advert.* **2008**, *8*, 5–15.
4. Krämer, N.C.; Hoffmann, L.; Eimler, S.C.; Fuchslocher, A.; Szczuka, J.M.; Klatt, J.; Sträfling, N.; Lam-chi, A.; Brand, M. Do I Need to Belong? Development of a Scale for Measuring the Need to Belong and Its Predictive Value for Media Usage. In Proceedings of the Annual Conference of the International Communication Association, London, UK, 17–21 June 2013.
5. Lampe, C.; Ellison, N.; Steinfield, C. A Face(book) in the Crowd: Social Searching *vs.* Social Browsing. In Proceedings of the 20th Anniversary Conference on Computer Supported Cooperative Work, Banff, AB, Canada, 4–8 November 2006; ACM Press: New York, NY, USA, 2006.
6. Ross, C.; Orr, E.S.; Sisic, M.; Arseneault, J.M.; Simmering, M.G.; Orr, R.R. Personality and motivations associated with Facebook use. *Comput. Hum. Behav.* **2009**, *25*, 578–586.
7. Marwick, A.E.; Boyd, D. I tweet honestly, I tweet passionately: Twitter users, context collapse, and the imagined audience. *New Media Soc.* **2011**, *13*, 114–133.

8. Vitak, J. The impact of context collapse and privacy on social network site disclosures. *J. Broadcast. Electron. Media* **2012**, *56*, 451–470.
9. Bourdieu, P. Ökonomisches Kapital—Kulturelles Kapital—Soziales Kapital [Economic Capital—Cultural Capital—Social Capital]. In *Soziale Ungleichheiten* [*Social Injustice*]; Kreckel, R., Ed.; Schwartz: Göttingen, Germany, 1983; pp. 183–198.
10. Ellison, N.B.; Steinfield, C.; Lampe, C. The benefits of Facebook "Friends": Social capital and college students' use of online social network sites. *J. Comput. Mediated Commun.* **2007**, *12*, 1143–1168.
11. Williams, D. On and off the net: Scales for social capital in an online era. *J. Comput. Mediated Commun.* **2006**, *11*, 593–628.
12. Manago, A.M.; Taylor, T.; Greenfield, P.M. Me and my 400 Friends: The anatomy of college students' Facebook networks, their communication patterns, and well-being. *Dev. Psychol.* **2012**, *48*, 369–380.
13. Steinfield, C.; Ellison, N.B.; Lampe, C. Social capital, self-esteem, and use of online social network sites: A longitudinal analysis. *J. Appl. Dev. Psychol.* **2008**, *29*, 434–445.
14. Bevan, J.L.; Pfyl, J.; Barclay, B. Negative emotional and cognitive responses to being unfriended on Facebook: An exploratory study. *Comput. Hum. Behav.* **2012**, *28*, 1458–1464.
15. Putnam, R. *Bowling Alone: The Collapse and Revival of American Community*; Simon and Schuster: New York, NY, USA, 2000.
16. Granovetter, M. The strength of weak ties. *Am. J. Sociol.* **1973**, *78*, 1360–1380.
17. Ellison, N.B.; Vitak, J.; Gray, R.; Lampe, C. Cultivating social resources on social network sites: Facebook relationship maintenance behaviors and their role in social capital processes. *J. Comput. Mediated Commun.* **2014**, *19*, 855–870.
18. Patulny, R.V.; Svendsen, G.L.H. Exploring the social capital grid: Bonding, bridging, qualitative, quantitative. *Int. J. Sociol. Soc. Policy* **2007**, *27*, 32–51.
19. Hanifan, L.J. The rural school of community center. In *Annals of the American Academy of Political and Social Science*; Sage Publication Inc.: New York, NY, USA, 1916; Volume 67, pp. 130–138.
20. Bourdieu, P.; Wacquant, L.J.D. *An Invitation to Reflexive Sociology*; University of Chicago Press: Chicago, IL, USA, 1992.
21. Lin, H.; Qiu, L. Sharing Emotion on Facebook: Network Size, Density, and Individual Motivation. In Proceedings of the Annual Conference Extended Abstracts on Human Factors in Computing Systems, Austin, TX, USA, 5–10 May 2012.
22. Wellmann, B.; Haase, A.Q.; Witte, J.; Hampton, K. Does the Internet increase, decrease, or supplement social capital? Social networks, participation, and community commitment. *Am. Behav. Sci.* **2001**, *45*, 436–455.
23. Teten, D.; Allen, S. *The Virtual Handshake Opening Doors and Closing Deals Online*; Amacom Books: New York, NY, USA, 2005.
24. Gilbert, E.; Karahalios, K. Predicting Tie Strength with Social Media. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, Boston, MA, USA, 4–9 April 2009; pp. 211–220.

25. Valenzuela, S.; Park, N.; Kee, K.F. Is there social capital in a social network site?: Facebook use and college students' life satisfaction, trust, and participation. *J. Comput. Mediated Commun.* **2009**, *14*, 875–901.
26. Hampton, K.; Goulet, L.S.; Rainie, L.; Purcell, K. *Social Networking Sites and Our Lives. How People's Trust, Personal Relationships, and Civic and Political Involvement Are Connected to Their Use of Social Networking Sites and Other Technologies*; Pew Research: Washington, DC, USA, 2011.
27. Liu, H.; Shi, J.; Liu, Y.; Sheng, Z. The moderating role of attachment anxiety on social network site use intensity and social capital. *Psychol. Rep.* **2013**, *112*, 252–265.
28. Burke, M.; Marlow, C.; Lento, T. Social Network Activity and Social Well-Being. In Proceedings of the Annual Conference on Human Factors in Computing Systems, Atlanta, GA, USA, 10–15 April 2010.
29. Guo, Y.; Yiwei, L.; Naoya, I. Exploring the predicted effect of social networking site use on perceived social capital and psychological well-being of Chinese international students in Japan. *Cyberpsychol. Behav. Soc. Netw.* **2014**, *17*, 52–58.
30. Kwon, M.W.; D'Angelo, J.; McLeod, D.M. Facebook use and social capital to bond, to bridge, or to escape. *Bull. Sci. Technol. Soc.* **2013**, *33*, 35–43.
31. Aubrey, J.S.; Rill, L. Investigating relations between Facebook use and social capital among college undergraduates. *Commun. Q.* **2013**, *61*, 479–496.
32. Ellison, N.B.; Vitak, J.; Steinfield, C.; Gray, R.; Lampe, C. Negotiating privacy concerns and social capital needs in a social media environment. In *Privacy Online*; Springer: Berlin, Heidelberg, Germany, 2011; pp. 19–32.
33. Craig, E.; Wright, K.B. Computer-mediated relational development and maintenance on Facebook. *Commun. Res. Rep.* **2012**, *29*, 119–129.
34. Trepte, S.; Reinecke, L. The reciprocal effects of social network site use and the disposition for self-disclosure: A Longitudinal Study. *Comput. Hum. Behav.* **2013**, *29*, 1102–1112.
35. Coffé, H.; Geys, B. Toward an empirical characterization of bridging and bonding social capital. *Nonprofit Volunt. Sector Q.* **2007**, *36*, 121–139.
36. Norris, P. *Democratic Phoenix: Reinventing Political Activism*; Cambridge University Press: Cambridge, UK, 2002.
37. Heaney, C.A.; Israel, B.A. Social networks and social support. In *Health Behavior and Health Education: Theory, Research and Practice*, 4th ed.; Glanz, K., Rimer, B.K., Viswanath, K., Eds.; Jossey-Bass: San Francisco, CA, USA, 2008; pp. 189–210.
38. House, J.S. *Work Stress and Social Support*; Addison-Wesley: Hallbergmoos, Germany, 1980.
39. Burt, R.S. Range. In *Applied Network Analysis*; Burt, R.S., Minor, M.J., Eds.; Sage: Beverly Hills, CA, USA, 1983; pp. 176–194.
40. Pickering, J.M.; King, J.L. Hardwiring weak ties: Interorganizational computer-mediated communication, occupational communities, and organizational change. *Organ. Sci.* **2003**, *19*, 365–379.
41. Huckfeldt, R.; Beck, P.A.; Dalton, R.J.; Levine, J. Political environment, cohesive social groups, and the communication of public opinion. *Am. J. Polit. Sci.* **1995**, *39*, 1025–1054.

42. Bakshy, E.; Rosenn, I.; Marlow, C.; Adamic, L. The Role of Social Networks in Information Diffusion. In Proceedings of the 21st International Conference on World Wide Web, Lyon, France, 16–20 April 2012.
43. Sandstrom, G.M.; Dunn, E.W. Social interactions and well-being: The surprising power of weak ties. *Personal. Soc. Psychol. Bull.* **2014**, *40*, 910–922.
44. Rozzell, B.; Piercy, C.W.; Carr, C.T.; King, S.; Lane, B.L.; Tornes, M.; Janan Johnson, A.; Wright, K.B. Notification pending: Online social support from close and nonclose relational ties via Facebook. *Comput. Hum. Behav.* **2014**, *38*, 272–280.
45. Williams, C.C. Book review: The creation and destruction of social capital. *J. Rural Stud.* **2005**, *21*, 260–261.
46. Wellman, B.; Wortley, S. Different strokes from different folks: Community ties and social support. *Am. J. Sociol.* **1990**, *96*, 558–588.
47. Kalpidou, M.; Costin, D.; Morris, J. The relationship between Facebook and the well-being of undergraduate college students. *Cyberpsychol. Behav. Soc. Netw.* **2011**, *14*, 183–189.
48. Wellman, B.; Salaff, J.; Dimitrova, D.; Garton, L.; Gulia, M.; Haythornthwaite, C. Computer networks as social networks: Collaborative work, telework, and virtual community. *Annu. Rev. Sociol.* **1996**, *22*, 213–238.
49. Donath, J.; Boyd, D. Public displays of connection. *BT Technol. J.* **2004**, *22*, 71–82.
50. Hampton, K.N.; Lee, C.J.; Her, E.J. How new media affords network diversity: Direct and mediated access to social capital through participation in local social settings. *New Media Soc.* **2011**, *13*, 1031–1049.
51. Tong, S.T.; Walther, J.B. Relational maintenance and computer-mediated communication. In *Computer-Mediated Communication in Personal Relationships*; Wright, K.B., Webb, L.M., Eds.; Peter Lang Publishing: New York, NY, USA, 2011; pp. 98–118.
52. Trepte, S.; Dienlin, T.; Reinecke, L. The influence of social support received in online and offline contexts on satisfaction with social support and satisfaction with life: A longitudinal study. *Media Psychol.* **2014**, doi:10.1080/15213269.2013.838904.
53. Bauer, C.; Korunovska, J.; Spiekermann, S. On the Value of Information—What Facebook Users Are Willing to Pay. Available online: http://aisel.aisnet.org/ecis2012/197 (accessed on 14 December 2014).
54. Peña, J.; Brody, N. Intentions to hide and unfriend Facebook connections based on perceptions of sender attractiveness and status updates. *Comput. Hum. Behav.* **2014**, *31*, 143–150.
55. Aron, A.; Aron, E.N.; Smollan, D. Inclusion of Other in the Self Scale and the structure of interpersonal closeness. *J. Personal. Soc. Psychol.* **1992**, *63*, 596–612.
56. Berscheid, E.; Snyder, M.; Omoto, A.M. The relationship closeness inventory: Assessing the closeness of interpersonal relationships. *J. Personal. Soc. Psychol.* **1989**, *57*, 792–807
57. Sternberg, R.J. Construct validation of a triangular love scale. *Eur. J. Soc. Psychol.* **1997**, *27*, 313–335.
58. Stasser, G.; Titus, W. Pooling of unshared information in group decision making: Biased information sampling during discussion. *J. Personal. Soc. Psychol.* **1985**, *48*, 1467–1478
59. Appel, L.; Dadlani, P.; Dwyer, M.; Hampton, K.; Kitzie, V.; Matni, Z.A.; Moore, P.; Teodorp, R. Testing the validity of social capital measures in the study of information and communication technologies. *Infor. Commun. Soc.* **2014**, *17*, 398–416.

60. Kim, J.; Dindia, K. Online self-disclosure. A review of research. In *Computer-Mediated Communication in Personal Relationships*; Wright, K.B., Webb, L.M., Eds.; Peter Lang Publishing: New York, NY, USA, 2011; pp. 156–179.
61. Banzczyk, B.; Krämer, N.C.; Senokozlieva, M. "The Wurst" Meets "Fatless" in MySpace the Relationship between Personality, Nationality and Self-Presentation in an Online Community. In Proceedings of the Annual Conference of the International Communication Association, Montreal, QC, Canada, 22–26 May 2008.
62. Park, N.; Lee, S.; Kim, J.H. Individuals' personal network characteristics and patterns of Facebook use: A social network approach. *Comput. Hum. Behav.* **2012**, *28*, 1700–1707.