Individual and social benefits of online discussion forums

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ARTICLE INFO

ABSTRACT

There has been much debate surrounding the potential benefits and costs of online interaction. The present research argues that engagement with online discussion forums can have underappreciated benefits for users' well-being and engagement in offline civic action, and that identification with other online forum users plays a key role in this regard. Users of a variety of online discussion forums participated in this study. We hypothesized and found that participants who felt their expectations had been exceeded by the forum reported higher levels of forum identification. Identification, in turn, predicted their satisfaction with life and involvement in offline civic activities. Formal analyses confirmed that identification served as a mediator for both of these outcomes. Importantly, whether the forum concerned a stigmatized topic moderated certain of these relationships. Findings are discussed in the context of theoretical and applied implications.

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1. Introduction

1.1. Online interaction

Can human interaction over the internet be personally and socially transformative? The introduction of new, disruptive technology is always accompanied by a deep suspicion – for example, the telephone was greeted by claims that it would break up home life and stop people from visiting friends (Fischer, 1992; Pool, 1983) – and the internet has been no exception to this rule (see, e.g., Putnam, 2000). As we detail below, debates about the supposed pros and cons of internet-based interaction have focused primarily on individual well-being, largely ignoring the potential benefits at more inclusive levels of analysis (community and society). We propose that one of the key benefits of online interaction has been overlooked by researchers: its potential to contribute to increased engagement with civic activities. Our contribution in this paper is to demonstrate that online interaction can foster offline engagement at the same time, counter-intuitively, as it fosters individual well-being. Drawing below on social identity theory (Tajfel & Turner, 1979), we demonstrate that *identification* with other forum users plays an influential role in both these processes.

In the present research we focus on one particular mode of online interaction – participation in online discussion forums – to consider when, why, and how they may transform their users. Online forums have been in existence for many years, and indeed predate the internet (Li & Bernoff, 2011). Although seemingly eclipsed in the past decade by social networking sites such as Facebook, forums are still regularly used by around 20% of online users in the US, and about 10% of online users in the UK (Li & Bernoff, 2011), attesting to the value that users continue to derive from them. This value may stem, at least in part, from the fact that forums represent one of the few remaining spaces online that afford the user the potential for anonymous interaction.

We contend that this value accrues at both the individual level (well-being) and the society level (civic engagement). To put our argument and data in context, below we first review past work on the connection between online interaction and individual-level outcomes, and then the small amount of available work relating online interaction to society-level outcomes. We then consider mediating and moderating variables and end the introduction by deriving concrete hypotheses.

1.2. Effects on individual well-being

How does online interaction impact an individual's well-being? Intuitively, one might expect that any form of interaction, regardless of setting, is probably an aid to well-being. In offline settings, researchers have demonstrated that those who communicate more and have close supportive relationships are less stressed, happier

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and psychologically healthier (e.g., Baumeister & Leary, 1995; House, Umberson, & Landis, 1988) whereas those who have fewer close relationships, social resources and support tend to feel more lonely, be more depressed and psychologically less well (Barnett & Gotlib, 1988; Bruce & Hoff, 1994).

But some have argued for an "internet paradox": the idea that more interaction online translates into reduced well-being because it disrupts interaction offline. If time spent interacting online comes at the expense of vital everyday face-to-face interaction with family and friends, there could be negative implications for users' psychological wellbeing downstream (e.g., Mesch, 2001; Nie, Hillygus, & Erbring, 2002). There is certainly evidence that "too much" online activity can result in a range of negative effects on users. Heavy internet users report feeling more isolated from society and report fewer interactions with family and friends (Nie & Hillygus, 2002; Nie et al., 2002). Time spent online has been shown to be associated with increased depression and other emotional problems (Carden & Rettew, 2006; Morgan & Cotton, 2003) and impaired academic performance (Junco, 2012). Using the internet to meet people is also associated with depression (Boneva, Quinn, Kraut, Kiesler, & Shklovski, 2006).

An influential set of studies provides perhaps the most definitive tests of these ideas (Kraut et al., 1998). Kraut and colleagues recruited families who did not have Internet access in homes at the beginning; gave each a personal computer, internet, and e-mail; and tracked them over two years to assess the impact of internet use on their social involvement, social support, and psychological well-being. Far from improving users' well-being, the evidence gathered in this study suggested that stress, depression, and loneliness seemed to be worsened by internet use. This paper calling the benefits of online interaction into question generated significant media and scholarly attention. But these provocative findings have not held up over time. First, others' data have not been fully supportive (see LaRose, Eastin, & Gregg, 2001; Morgan & Cotton, 2003). Second, Kraut and colleagues' own later data have also run against their earlier findings. In a follow-up study of over 200 of the respondents from their original 1998 paper, Kraut and colleagues reported that most of the negative effects had dissipated, with the exception of increased stress. They also collected fresh data several years after the earlier study and found that participants in this later sample experienced mostly positive effects of using the Internet (Kraut et al., 2002). Overall, these findings paint a far more optimistic picture.

Taking the later data into account, many researchers have arrived at a more positive view of the consequences of internet use, arguing that online interaction can supplement rather than supplant face-to-face interaction (DiMaggio, Hargittai, Neuman, & Robinson, 2001; Wellman, Haase, Witte, & Hampton, 2001). Several reasons underlie this argument. First, the internet helps to maintain geographically dispersed networks: it can prevent communities, families, and friends from becoming too fragmented by providing sources of social support regardless of users' physical location (Howard, Rainie, & Jones, 2001; Subrahmanyam, Reich, Waechter, & Espinoza, 2008). Second, getting involved in online groups can be of huge benefit to those with somewhat depleted offline social resources (McKenna & Bargh, 1998); developing relationships with individuals and groups online may help compensate for the social resources that are lacking offline. Last, internet interaction has been positively linked to the development of social capital (Best & Krueger, 2006; Ellison, Steinfield, & Lampe, 2007, 2011; Gross, Juvonen, & Gable, 2002; Hampton & Wellman, 2003; Kavanaugh, Carroll, Rosson, Reese, & Zin, 2005; Kraut et al., 2002; Quan-Haase, Wellman, Witte, & Hampton, 2002; Robinson, Kestnbaum, Neustadtl, & Alvarez, 2000). Offline (face-to face) social capital has been shown to decrease dropout rates, and increase students' sense of belonging and well-being in academic settings (Garcia-Reid, 2007) and similar benefits have been shown among members of virtual communities (Tomai et al., 2010).

In sum, research shows that online interaction impacts both positively and negatively upon users' well-being. It is not so much a question of *whether* online interaction impacts well-being, but when, why and how it does. Before explaining the identity-related process by which we believe this occurs, we first consider the second of our two major outcomes of interest in this paper.

1.3. Effects on offline (civic) engagement

Alongside effects on individual well-being, we seek to better understand when and how users of online discussion forums become motivated to work on behalf of the issues discussed in those forums. Such civic activities in related offline settings might include willingness to sign petitions, willingness to donate money, and other forms of civic-minded collective action.

As noted, there is less evidence addressing these society-level effects than evidence addressing personal-level effects. But there is suggestive evidence that online engagement can translate into offline collective action, such as civic and political participation (e.g., Valenzuela, Park, & Kee, 2009). In addition to these suggestive correlational studies, some "natural experiments" have provided opportunities to test a causal relationship between internet use and civic engagement more carefully. In one illustrative intervention study (Hampton & Wellman, 2003), a suburb of Toronto had been turned into a "wired suburb" when residents were offered a package of online services, including high-speed internet access, videophone, online health advice, and local online discussion forums. After this intervention, follow-up data suggested that the internet actually stimulates more offline contact (resonating with the debate reviewed above) and promotes collective action to solve community problems offline (see also Blanchard & Horan, 1998).

There are, however, exceptions to this pattern (e.g., Byrne, 2007). A recent meta-analysis of the link between internet use and political/civic engagement suggests it is far from inevitable (Boulianne, 2009). Clearly, more work is needed on the timely and important question of whether (and what type of) online interaction can translate into offline civic engagement, and more importantly, to better understand the processes that may underlie this link. A major goal of our study was to address these gaps in the literature.

1.4. Mediating role of forum identification

We follow others in conceptualizing ingroup identification as a feeling of similarity and engagement with an ingroup and its other members. Identification reflects, and is expressed by, the inclusion of the ingroup in the self-concept (Tropp & Wright, 2001). Thus, forum identification refers to the extent to which users include the forum in the self-concept. Joining the forum is not synonymous with becoming a high identifier; active members of the forum may vary in their identification. Because a given user may be strongly identified with one forum but only weakly identified with another, identification is not a stable personality trait. To measure individual differences, we need to specify the target (in this case, the specific forum).

Why is identification important? Social identity theory (Tajfel & Turner, 1979) posits that our group memberships are just as important as individual identity in defining the self (see Ellemers, Spears, & Doosje, 2002) and thus are equally important determinants of our downstream outcomes mediated by the self-concept (such as well-being and behavior). We suggest that online forums are precisely this type of group; they function as a powerful site of community for their users. Furthermore, it is the development of

the sense that this community is meaningfully connected to the self (i.e., forum identification) that creates the dual benefits of individual well-being and offline civic engagement. In other words, identification plays a mediating role that drives the other two outcomes of interest. In this section we highlight two of the many benefits of identification already established in the offline literature that we feel merit closer attention because they map onto our outcomes of interest.

First, at the individual level, group identification has been robustly linked to health and well-being, both in terms of effective coping with situational stressors (Haslam & Reicher, 2006) and in the longer term. For example, a significant body of work is accumulating that suggests social group memberships, and more specifically, engagement in activities associated with such groups, can play a significant protective role in both the onset of and recovery from depression (see Cruwys, Haslam, Dingle, Haslam, & Jetten, 2014, for an overview of this extensive program of research). Our prediction that identification mediates the positive impact of online discussion forums on individual well-being derives from this well established and robust connection.

Second, at the societal level, group identification is also quite often linked to heightened civic engagement, in the sense that it is almost an accepted 'given' that they somehow go together (Youniss, 2011). Those with a strong political identity are more inclined to engage in civic activities such as political activism (Stewart & McDermott, 2004) and protest participation (Klandermans, 2002). Qualitative accounts of adolescents' commitment to and engagement with prosocial and political organizations suggest that sustained social action may be at least partly a direct consequence of identification with the goals of the organizations they belong to (Martínez, Peñaloza, & Valenzuela, 2012). Within environmental psychology, too, there is suggestive evidence that identification promotes environmental activism (Dono, Webb, & Richardson, 2010; Fielding, McDonald, & Louis, 2008). And sufficiently many findings in the social psychological literature affirm the role of identification in collective action that an influential paper putting forward a social identity model of collective action was needed to integrate them (van Zomeren, Postmes, & Spears, 2008). These myriad and varied sources all suggest a mediational role for identification in fostering collective action. To our knowledge, though, no researchers have asked whether these same dynamics might link *online* identification with *offline* collective action, or any other form of civic engagement. Our study provides the first test of that intriguing idea.

If identification has so many benefits, it becomes increasingly crucial to ask where it comes from. In other words, instead of taking identification levels as a "given," we need to conceptualize them also as a dynamic *outcome*. Social identity theory has taken up the question of the antecedents of forum identification and provided some answers. Patterns of identification with different ingroups suggest that identification occurs when it is functional (useful). People may strategically express identities when they think they will not be punished, and/or connect them to an audience that is valued (Spears, Lea, Corneliussen, Postmes, & Ter Haar, 2002). Moreover, low identifiers will begin to identify with a group when they anticipate that the group is about to benefit from positive social change, but will dis-identify when change is unlikely (Doosje, Spears, & Ellemers, 2002).

This suggests that we may be able to uncover antecedents of forum identification that similarly reflect users' sense that the forum has been useful for them. Initial levels of forum identification are low as a rule; users do not tend to join a forum with a sense of already being connected to other users (who are strangers) by more than shared interests. Forum identification develops over time – but how and why? A key goal of our study was to investigate the antecedents of forum identification.

One of the advantages of online communication is that it may allow people to fulfill needs that are not being met offline. Our rationale in considering the antecedents of forum identification was influenced by the 'uses and gratifications' approach (Herzog, 1944; Katz, Blumler, & Gurevitch, 1974), a second theoretical perspective that complements the social identity approach. This holds that people may trade off 'richness' of the medium against its ability to satisfy their felt needs. For example, people with an obscure interest may join an online discussion forum to obtain information or social support that is not available in their own community. Because online communication provides disparate gratification opportunities compared with traditional media, individuals may find it superior to face-to-face communication, if that richer medium is not considered fit for purpose (Dimmick, Kline, & Stafford, 2000). This approach inspires us to draw a distinction between instrumental reasons for joining forums (e.g., to seek information) and social reasons – the two main reasons that have emerged in our preliminary research into this question (Pendry, Mewse, & Burgoyne, 2012).

Given that identification has a strong emotional component (e.g., Cameron, 2004) we put forward the novel hypothesis that social factors are more influential than instrumental factors in fostering forum identification. What we mean by this is that users have high initial expectations about the instrumental benefits (which are typically fulfilled), but not about the social benefits. Because they do not readily intuit that the experience of interacting with other forum users will result in the formation of new social ties, their expectations are frequently exceeded. Putting this all together motivates our hypothesis that the antecedents of identification are primarily social. Thus, the strongest predictor of identification should be the extent to which social (not instrumental) expectations are met or even exceeded.

1.5. Moderating role of stigma

A key aspect of our argument is that some of the benefits of online interaction may accrue particularly to people with stigmatizing conditions, whose need for a sense of community may be harder to meet in the course of normal, day-to-day offline interactions (Goffman, 1963). A stigmatizing condition is one that subjects its carrier to social devaluation (Crocker, Major, & Steele, 1998), and stigma is a psychological stressor for precisely this reason (Allison, 1998; Heckman et al., 2002; Varni, Miller, McCuin, & Solomon, 2012). Although social stigmas may be differentiated along a variety of dimensions (e.g., visibility), our goal in this work is not to draw fine distinctions between different types of stigmas. Instead, we cast a wide net by considering the core defining element of *devaluation* that links the experience of people who have a variety of different types of stigmatizing conditions.

Nowadays people can both avoid and proactively cope with this devaluation by turning to online forums populated by others who share the same devalued group membership. However, little to no work to date has addressed whether this is an effective strategy in the sense of improving users' well-being or offline civic engagement. To address this question, our research directly compared users' experiences with two types of forums: forums that address stigmatizing topics (post-natal depression, mental health issues, and non-disposable diaper usage) and forums that are more focused on recreational activities (golf, bodybuilding, and a range of self-identified forums).

We hypothesized that users of the stigma-related forums should reap unique benefits for well-being, relative to users of the recreational forums. We reasoned that members of these forums would feel they had few people to talk to in their day-to-day lives who could truly understand what it means to deal with the stigmatizing characteristic and the accompanying devaluing

social reactions. Forums can all offer some initial anonymity, a community, and information that geographically proximate others may not have. What stigma-related forums uniquely offer is that the anonymity protects those who are not ready to be publicly associated with sensitive topics; the community helps to neutralize the "spoilage" of identity that accompanies stigma (Goffman, 1963). In forums focused on less stigmatizing topics, only the specialized knowledge and expertise (not the anonymity and sense of community) are relevant, and they are a luxury rather than a necessity. We based our hypothesis on research showing that only people who initially lack offline support reap mental health benefits from online interaction (Bessière, Kiesler, Kraut, & Boneva, 2008) and that symptoms of depression are best ameliorated when sufferers not only 'show up' to but actively engage with offline groups (e.g., community recreation groups; Cruwys et al., 2014). Thus, getting involved with social groups, whether offline or online, is known to especially benefit those with stigmatising conditions.

Putting this past work together, we expected only users of the stigma-relevant forums to show individual well-being benefits to the extent that they come to identify with the forum, because their initial need is not being met. In contrast, we had no theoretical reason to suspect that civic engagement would be affected by the stigma relevance of the forum; past work shows that identification predicts collective action across a wide range of naturally occurring groups. Thus, we expected users of all types of forums to experience improved civic engagement to the extent that they come to identify with the forum.

1.6. Synthesis and predictions

First, regarding motivations for joining the forum, we predicted that participants would report having initially joined primarily to seek information (Hypothesis 1). Second, regarding fulfilment of these goals, we predicted that participants would report that their information needs had been very well met (Hypothesis 2), since serving as a clearinghouse for user-generated information is one of the most straightforward and easily fulfilled functions that forums provide. Importantly, though, we further predicted that these explicitly acknowledged information-seeking experiences on the part of users would be less important predictors of forum identification than alternative (social) needs would be (Hypothesis 3).

Next, we investigated how users' forum identification impacts upon two key outcome variables: their own well-being, and downstream, potential offline impact in terms of civic engagement in related activities such as volunteering or campaigning. Consistent with past work, we predicted that participants' levels of forum identification would be correlated with both of these outcome variables (Hypothesis 4). We predicted that identification with other forum users would mediate the relationship between, on the one hand, users having their social expectations met or exceeded on the forum, and on the other hand, the positive outcomes they enjoy in terms of improved satisfaction with life and offline engagement (Hypothesis 5). Importantly, this mediated relationship would hold for all forums in the case of offline engagement, but would only hold for stigma-related forums in the case of satisfaction with life (Hypothesis 6).

2. Method

2.1. Participants and procedure

We approached users of a range of online discussion forums catering to a variety of interests/hobbies and lifestyles. The overall combined sample consisted of 273 participants (including 73 men and one with gender unreported), ranging in age from 18 to 67 ($M = 35$, $SD = 10$). These were recruited both directly from the forums and from MTurk. As detailed below, our samples included users of both stigma-related forums (for postnatal depression, mental health more broadly construed, and users of non-disposable diapers) and non-stigma-related forums (for golfers and bodybuilders and environmental issues as well as a set of forums self-nominated by MTurk users), allowing us to test the moderating role of stigma as outlined above.

It is important to explain the rationale behind our categorization of forums into stigma-related versus non-stigma-related. This was based upon past research that has demonstrated first, that mental health illnesses are generally (and uncontentiously) recognized as stigmatised (Schwenk, Davis, & Wimsatt, 2010; Wang, Fick, Adair, & Lai, 2007), and second, that certain environmental activities engaged in by small minorities (such as using non-disposable diapers) are considered to be rather marginalised and 'cranky' with individuals choosing to engage in them receiving a rather negative reaction from the majority (at least in the UK; see Pendry et al., 2012).

At first blush, this latter group assignment might seem surprising, since intuitively, one might suppose that using non-disposable diapers is a choice made in most cases for environmental reasons and these are generally held to be positive and worthy motivations which ought not to result in a feeling of being stigmatised. However, in the UK, where these data were collected, this is unfortunately not the case. There is near-total (96%) market penetration for disposable nappies (Aumônier, Collins, & Garrett, 2008). Our previous research confirmed that using non-disposable diapers is very much a minority activity that has not to this point gained the acceptance of other forms of recycling engaged in by the majority (e.g., recycling of household waste). It is clear that negative stereotypes exist about non-disposable diaper users, who are already clearly a minority group in numerical terms (Pendry et al., 2012). More recently, it is still common to find similar comments being made on parenting forums (e.g., Mumsnet) about non-disposable users by disposable users, and for non-disposable users to voice that they sense this negativity toward them.

Although the stigmas involved may not be directly comparable, we anticipated that the main reasons both types of members are drawn to their discussion forums are nonetheless linked to notions of devaluation, unacceptability, and lack of availability of support from similar others.

2.2. Measures

2.2.1. Motivations for joining discussion forums

Participants' reasons for initially joining their forum were assessed by asking them to rate four possible motivations on a scale from not at all (1) to very much (7). These reasons comprised: To seek information, to share information, to form or maintain relationships, and because there were no opportunities to meet likeminded people in their area.

2.2.2. Fulfilment of expectations

Participants were next asked to rate the reasons above (with the exception of the last) in terms of whether their expectations had been met. We used a seven-point scale with these points labeled: It has fallen short of my expectations (1), It has met my expectations (4), and It has exceeded my expectations (7).

2.2.3. Identification with other forum users

Forum identification was assessed using Aron, Aron, and Smollan's (1992) Inclusion of Other in the Self (IOS) measure, adapted to measure ingroup identification (in line with the usage of Tropp & Wright, 2001). Both of these papers provide

psychometric validation. This consists of a single-item, pictorial measure of closeness with others, with self and forum represented in individual circles which increase in overlap as one moves further along the scale (with options from no overlap, coded as 1, to almost complete overlap, coded as 6). Participants were asked to select the pair of circles which best represented their relationship to the forum, with a greater overlap implying higher identification (see Fig. 1).

2.2.4. Satisfaction with life

This was measured using the five-item Satisfaction With Life scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985), designed to measure global cognitive judgments of one's concept of life satisfaction. Participants rated items using a scale with the end-points *strongly disagree* (1) and *strongly agree* (7). Ratings for the five items were averaged to form a scale for subsequent analyses ($\alpha = .90$).

2.2.5. Offline engagement with forum issues

This eight-item measure assessed how likely participants would be to engage in offline civic activities related to the forum issue (such as being an advocate for the issue in conversation, campaigning for funding, participating in political demonstrations). Participants rated each item on a 7-point scale bounded at *No, never* (1), *Sometimes* (4), and *Yes, a lot* (7). Ratings for the eight items were averaged to form a scale for subsequent analyses ($\alpha = .89$).
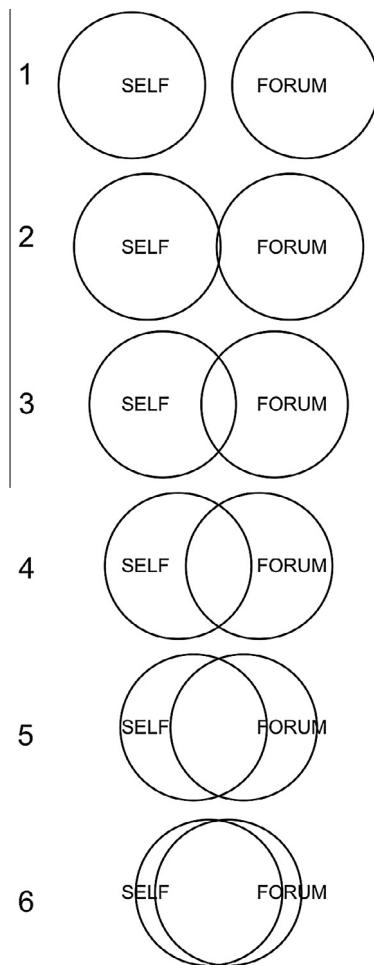

Fig. 1. Inclusion of Other in the Self (IOS) measure (adapted from Aron et al., 1992).

2.3. Procedure

For the subset of the sample that came from Amazon's Mechanical Turk site, a "human intelligence task" posted on the site sent 'workers' to the same online surveying site used to administer the forum-specific surveys. All forum-specific questions were reworded to refer to "your primary forum". In all other cases, the questionnaire was posted on the chosen online forums by forum moderators as a 'sticky' link for one month at a time. Participants clicked on the link if they wished to complete the questionnaire and were told that the study was concerned with the social behavior of online forum users. Consent was obtained prior to commencing the questionnaire. Participants were informed that the questionnaire was anonymous, that they did not have to answer any questions they did not want to and had the right to withdraw themselves or their results from the experiment at any time. The questionnaire comprised demographic questions, followed by the scales outlined next in the order that they appear below. Once participants had completed the questionnaire they were thanked and debriefed.

3. Results

Table 1 provides a summary of descriptive statistics broken down by forum type. Table 2 provides a summary of correlations between the key variables broken down by forum type.

3.1. Motivations for joining forum and subsequent fulfilment of expectations

We conducted a one-way within-participants ANOVA comparing participants' ratings of the four possible reasons they had initially joined their forum. Supporting Hypothesis 1, participants reported joining in order to seek information ($M = 6.24$, $SD = 1.14$) more than for the three other reasons: to share information ($M = 4.65$, $SD = 1.82$), find others to relate to ($M = 3.60$, $SD = 2.05$), or because likeminded others were not nearby ($M = 3.80$, $SD = 2.10$), $F(3, 795) = 158.10$, $p < .001$.

Table 1
Descriptives ($M \pm SD$) within two types of online discussion forums.

Variable	Stigma forums (N = 121)	Non-stigma forums (N = 122)	Difference? (see text)
Motivations for joining			
To seek information	6.20 (1.01)	6.25 (1.26)	ns
To share information	4.67 (1.90)	4.73 (1.77)	ns
Form relationships	4.12 (2.17)	2.98 (1.80)	$p < .001$
Nobody likeminded nearby	4.21 (2.05)	3.39 (2.05)	$p = .002$
Fulfilment of expectations			
Re: seeking information	5.27 (1.44)	5.53 (1.43)	ns
Re: sharing information	5.16 (1.45)	5.43 (1.50)	ns
Re: forming relationships	4.48 (1.64)	4.32 (1.46)	ns
Mediator and key outcomes			
Forum identification	2.99 (1.42)	2.58 (1.06)	$p = .008$
Satisfaction with life	3.83 (1.74)	4.58 (1.19)	$p < .001$
Offline engagement	4.60 (1.29)	4.38 (1.22)	ns

Table 2
Correlations between key variables (below the diagonal for non-stigma forums and above the diagonal for stigma forums).

	1	2	3	4	5	6	7
1. Identification		.53***	.44***	.35***	.39***	.39***	.43***
2. Satisfaction with life	.09		.34***	.27**	.23**	.38***	.34***
3. Offline action	.31***	.07		.32***	.44***	.37***	.43***
4. Seek expectations	.24**	.18*	.13		.70***	.53***	.86***
5. Share expectations	.18*	.24**	.39***	.66***		.58***	.88***
6. Relate expectations	.27**	.13	.29**	.47***	.51***		.84***
7. Expectations exceeded	.28**	.23**	.33***	.86***	.87***	.79***	

* *p* < .05.
** *p* < .01.
*** *p* < .001.

To follow up this finding, we further assessed whether motivations for joining the forum differed as a function of forum type. It is notable that instrumental reasons (seeking and sharing information) had been endorsed more strongly than social reasons overall. Furthermore, endorsement of the instrumental reasons for joining were comparable across stigma-related forums and non-stigma-related forums (both *t*s < 1, ns): most people join forums for instrumental reasons, and this motivation does not differentiate users of different types of forums. In contrast, however, users of stigma-related forums were more likely to report joining for social reasons: to form or maintain relationships, $t(252) = 4.56$, $p < .001$, and because there were no opportunities to meet likeminded people nearby, $t(252) = 3.21$, $p = .002$. These reasons did not appear to weigh as heavily for users of non-stigma-related forums.

Similarly, we conducted a one-way within-participants ANOVA comparing ratings of how well each expectation had been met or exceeded, and differences again emerged, $F(2, 530) = 85.23$, $p < .001$. Consonant with Hypothesis 2, participants reported that their expectations concerning seeking information ($M = 5.49$, $SD = 1.42$) and sharing information ($M = 5.29$, $SD = 1.48$) had been substantially exceeded, whereas their expectations concerning relating to others ($M = 4.44$, $SD = 1.58$), which had been lower on average to begin with, had only been met. It is notable, however, that all three items averaged above the midpoint of the scale, indicating that users were reasonably pleased with how well their expectations had been met overall.

Once again, we followed up by assessing whether the ratings provided to these questions differed as a function of forum type. The three items were all rated comparably across forums, with all *t*s ⩽ 1.46, *ns*. Therefore, in these ratings no differences emerged between users of stigma-related forums and non-stigma-related forums.

Taking these first two sets of analyses together, we conclude that people joining forums are not very attuned to the community-building utility of forum membership; they are more interested in its instrumental value as a site of information transfer between members. Indeed, the latter analysis affirms that online forums are perceived by their users as an exceedingly successful means of information transfer. Nonetheless, the community-building capacity of the forum is also recognized to some extent, and importantly, there are individual differences in whether participants report that their expectations with regard to this alternative function were met. As described above, the remainder of our analyses focus on the unique utility of this variable in predicting outcomes/benefits of forum use.

3.2. Identification with other forum users

Participants' reports of their forum identification ranged across the entire scale from 1 to 6 and were quite variable ($M = 2.80$, $SD = 1.25$), supporting our contention that identification is a good candidate variable for explaining variation in downstream outcomes. Given this variability, it is perhaps even more notable that users of stigma-related forums were more strongly identified with other users than were participants affiliated with non-stigma-related forums, $t(254) = 2.63$, $p = .008$.

Importantly, participants' reports about the fulfilment of expectations predicted their forum identification. This was true for all three areas: seeking information ($r = .28$), sharing information ($r = .27$), and most strongly relating to others ($r = .34$), all three *p*s < .001. Supporting Hypothesis 3, in a simultaneous regression with all three of these variables predicting identification, only the relating-to-others predictor remained significant (beta = .30) whereas the other two were reduced to nonsignificance (betas less than or equal to .07, ns). Thus, forum identification continued to seem like a good candidate for possible mediation of the relationship between forum experiences and downstream benefits.

3.3. Two key outcome measures

Users of stigma-related forums, perhaps unsurprisingly, reported overall lower satisfaction with life than users of non-stigma-related forums, $t(255) = 4.01$, $p < .001$. In contrast, there was no overall difference in offline engagement with forum issues as a function of forum type, $t(256) = 1.43$, *ns*. Supporting Hypothesis 4, simple bivariate correlations showed that identification was associated with both of the outcome measures, satisfaction with life ($r = .30$, $p < .001$) and offline action tendencies ($r = .37$, $p < .001$).

3.4. Indirect (mediation) effects

We used the procedure and SPSS macro written by Hayes (2013) to compute not only the magnitude of the indirect effect but also percentile bootstrap confidence intervals (as recommended by Fritz, Taylor, & MacKinnon, 2012) to assess whether identification serves as a mediator. To simplify matters, we created a single "expectations exceeded" predictor variable, computed as the mean of the three separate variables ($\alpha = .79$). We specified 2000 bootstrap samples in each analysis. When the 95% confidence interval (CI) around the effect does not contain zero, the effect satisfies conventional standards for statistical significance.

In our first mediation analysis, with satisfaction with life as the criterion, the indirect effect was significant (indirect effect = .09, with a 95% bootstrap confidence interval spanning .04–.17), with significant paths from predictor to mediator, and from mediator to criterion. (We also computed the Sobel statistic as a supplementary analysis. It, too, confirmed that identification mediated satisfaction with life, $z = 3.13$, $p < .002$.) The direct effect was also significant (direct effect = .26, with a 95% confidence interval spanning .12–.41), $t = 3.64$, $p = .0003$.

In our second mediation analysis, with offline engagement tendencies as the criterion, the indirect effect was significant (indirect effect = .09, with a 95% bootstrap confidence interval spanning .05–.16), with significant paths from predictor to mediator, and mediator to criterion. (The Sobel test again confirmed that identification mediated offline engagement, $z = 3.73$, $p < .001$.) The direct effect was also significant (direct effect = .28, with a 95% interval spanning .17–.39), $t = 4.88$, $p < .0001$.

Thus, according to both the Sobel test approach and the currently standard approach (Preacher & Hayes, 2008), identification does indeed mediate the relationship between having one's social expectations met/exceeded and the two outcomes of interest in this paper, supporting Hypothesis 5.

3.5. Stigma as a moderator

We had hypothesized that the stigma-relevance of the forum would moderate the mediated relationships documented above. To test this hypothesis, we first looked at moderation of the relationship between identification and the two outcome variables. Identification only predicts satisfaction with life in the stigma forums (bootstrapped indirect effect = .64, $p < .00001$) and not in the non-stigma forums (bootstrapped indirect effect = .10, ns). In contrast, predicting offline engagement, mediation holds for both forum types (both bootstrapped indirect effects between .35 and .40 and independently significant). Therefore and supporting Hypothesis 6, the forum type did matter, but only for satisfaction with life. Among users of the non-stigma-related forums, identification did not predict satisfaction with life; among users of the stigma-related forums, it did.

To look at this differently, the bootstrapping macro allows us to add the same moderator to the final path of the full mediational model. Doing so shows that the mediation of satisfaction with life is moderated by forum type. The stigma forums have a bootstrapped indirect effect of .14 (95% CI: .07–.22), whereas the non-stigma forums have a (nonsignificant) bootstrapped indirect effect of .01 (95% CI: −.05 to .06). Thus, supporting Hypothesis 6, the indirect effects are not equivalent: the mediating role of identification only holds for the stigma forums and not for the non-stigma forums. In contrast, the bootstrapping macro shows that mediation of offline engagement is *not* moderated. Both the stigma forums and the non-stigma forums have bootstrapped indirect effects of between .07 and .08, with the 95% CI not spanning zero. The conditional indirect effect is equivalent in the different forum types.

4. Discussion

In the present research we considered the mechanisms that may underlie two benefits of online forum involvement: well-being (satisfaction with life) and civic engagement in offline settings. First, we found that the factor that best predicted forum identification was the extent to which people felt the forum had met their expectations about forming new relationships (i.e., the social aspect of forum use rather than the instrumental aspect). Furthermore, consistent with past work, we predicted and found that participants' levels of forum identification predicted their satisfaction with life (but only for users of stigma-related forums; see correlations in Table 2). We also found evidence that forum identification predicted participants' involvement in offline civic behaviors (for users of all types of forums). Finally, we predicted and found that identification with other forum users mediated the relationship between expectations about forming relationships being met and users' satisfaction with life. To summarize, then, our research suggests that users of discussion forums may find themselves with improved well-being and may also find themselves empowered and galvanized to work for the forum cause offline. We next discuss the theoretical and practical implications of our findings.

4.1. Promoting individual well-being

In her early work, Turkle (e.g., 1997) argued that the internet provided myriad positive opportunities for self-transformation,

but more recently (Turkle, 2012), she argues that the explosion in social media options has led us to develop superficial, emotionally lazy but instantly available virtual relationships as opposed to nurturing our real friends and family. This idea has found fertile ground (but for a critique of this view see Jurgenson, 2012). Our data strongly suggest that not all online interactions fall into this category. The internet has developed significantly since preliminary research and over time, it has become better integrated with our work and home lives. Some online communication tools can actively support our interactions and relationships (Kraut et al., 2002). Indeed, we provide clear evidence that online forums afford users a way of being genuinely "together, together", as opposed to what Turkle (2012) calls "alone together." This can reap significant benefits for users' well-being, especially those with a stigmatizing issue who may prefer to limit face-to-face interaction.

As online technologies have developed, the options for online engagement have multiplied and need to be considered as tools that have differing functions and purposes. Researchers have suggested that internet use that promotes *information acquisition and community building* – such as online discussion forums, social networking and blogging is more positively correlated with social capital than uses that instead pertain to *entertainment and diversion* such as gaming or watching online movies (e.g., Ellison et al., 2007, 2011; Shah, Kwak, & Holbert, 2001). So, where internet use draws people together, even if only in virtual space, it may have more beneficial effects on users. There is already substantial evidence, then, that social capital matters. Research that translates the many benefits of social capital into a range of online settings makes an important contribution at both a theoretical and applied level.

Our own findings with regards online discussion forums suggest a role for group identification in enhancing social capital. Although our findings are not causal and thus not definitive, we think it is likely that online settings that create and support the development of active and interactive communities will realize the greatest social capital benefits. This is especially true for forums covering more stigmatised issues where high levels of trust can develop, leading to "a virtuous circle of caring" which can greatly enhance users' feelings of social cohesion and emotional intelligence (Radin, 2006, p. 599). In our data, forum identification predicted stigmatised forum users' satisfaction with life. We also observed that expectations about the formation of new relationships being met strongly predicted users' levels of forum identification. Moreover, identification served to mediate the relationship between such expectations being met and users' satisfaction with life. The pattern in our data, therefore, suggests that forum identification acts as a lynchpin in the process of forum engagement and associated positive consequences. This reflects the "social cure" idea (Jetten, Haslam, & Haslam, 2012) that identification is the key to many health outcomes. Identification not only has benefits for health in and of itself, but importantly, it is the mechanism by which other variables benefit health (i.e., benefits *via* identification).

Our data echo recent research highlighting the key role that group identification can play in managing/reducing depressive symptoms (Cruwys et al., 2014). For those in more stigmatised groups (including depression), links with well-being were mediated by the degree to which members identified with other members. The more closely they identified, the better they felt. What is interesting about the present study, however, is that these findings were obtained in online discussion forums, as opposed to the face-to-face groups used in Cruwys et al.'s research. As noted, research has tended to provide mixed evidence with regards the social and functional utility of online contact. Our findings suggest that online contact can indeed be very beneficial, and more so when its members identify with others. Since one of the hallmarks of stigmatising conditions such as depression is a tendency toward

isolation and avoidance of social contact (Cacioppo, Hawkley, & Thisted, 2010; Eberhart, Auerbach, Bigda-Peyton, & Abela, 2011; Lumley & Harkness, 2007), encouraging individuals to sign up to and participate in face-to-face groups may not always be achievable. Online equivalents are therefore likely to remain popular for some individuals. A promising avenue for future research will be to test more specifically how such online group memberships affords depressed/stigmatised group users similar positive benefits to those found by Cruwys and colleagues in offline settings.

4.2. Promoting offline engagement in related causes

In addition to forums boosting users' well-being and enhancing options for social capital, they can foster a strong commitment to the forum issues and a desire to work on behalf of the forum in an offline capacity. In other words, offline life may be facilitated by online activity. This is not always the case, at least for offline political action (Boulianne, 2009). For example, Byrne's (2007) analysis of the BlackPlanet forum discussion threads suggested that while forum users debated the need for protest about black community issues, civic engagement rarely went beyond the discursive level. Past research (e.g., Wojcieszak, 2009) indicates that links between internet use and offline civic/political activity are likely moderated by the feasibility of possible actions. Where actions pose a threat to the social order (e.g., extreme political parties), the link is attenuated, but where the actions suggest instead a specific agenda (e.g., challenging environmental issues) it may be strengthened. In the forums used here, most actions fell into the latter category (e.g., campaigning for greater promotion of non-disposable diapers, improved funding for mental health). In this sense, then, our findings fit with this notion of 'action feasibility'.

One interesting point to note here is that there is some resistance, even among those who take an identity-based perspective, to the idea that forum identification is fully "real" and meaningful. Advocates of the "social" (that is, identification-based) cure for many psychological and physiological ailments are, on the whole, extremely positive about the benefits of group membership. Nonetheless, Jetten, Haslam, Haslam, and Branscombe (2009) recently cautioned that "virtual-world networking can become a substitute for real-world engagement" (p. 33). Our research provides an important and optimistic caveat: forums can in certain circumstances be associated with a strong bond with others users and a desire to work on behalf of the forum offline. Forums need not limit real-world engagement.

Again, identity appears to play a central role in this relationship. In our research, forum identification predicted users' related offline actions. This relationship was evident across all forum types. Others have alluded to the power of forums to effect this type of change offline (e.g., Dono et al., 2010; Fielding et al., 2008; Hampton, 2002; Hampton & Wellman, 2000; Kavanaugh et al., 2005; Klandermans, 2002; Pasek, More, & Romer, 2009; Valenzuela et al., 2009). However, alongside a few others, we further develop this idea by probing the role of identification (cf. Brunsting & Postmes, 2002; Klandermans, 2002; van Zomeren et al., 2008).

As our research demonstrates, the more engaged users show the highest levels of identification with other users and are most inclined to have their involvement spill over into related offline actions. Online commentators have recently been promoting the link between online activity and offline action. For example, Jenkins (2006) coined the term "participatory culture" to encapsulate how online consumers do more than consume, they also create and influence. Whether this civic engagement is for something as seemingly unimportant as protesting at a cancelled TV show, or for offline political demonstration, campaigning, donating or volunteering on behalf of a cause a user supports, we suggest that

such empassioned offline engagement is likely possible at least in part because users feel a strong connection to and identification with other users.

4.3. Comparing forums to other online communities

Would any online community work the same way as the online discussion forums we studied? For example, might Facebook or Twitter groups perform a similar function? In recent years, after all, there have been many accounts of Twitter/Facebook revolutions leading to mass mobilization of users and concomitant collective action to challenge or change the existing order (e.g., the 'Arab Spring', and the U.S. Occupy movement). In a sense, then, it is not exactly news to speak of online spaces in general being linked to civic engagement. We believe, however, that the initial anonymity afforded by discussion forums – as they are traditionally setup – is an important aspect of our findings which sets them apart from more mainstream social media. We do acknowledge that Facebook and Twitter act as a type of discussion forum. However, we do not consider that they are interchangeable with the more traditional forums used in the present research. Importantly, Facebook/Twitter are less anonymous, since users typically join them using their name and often a recognizable photo, and may also elect to advertise their membership to other friends in their settings preferences.

In direct contrast to Facebook groups, online forum interactions may provide a valuable source of advice and support while allowing people with stigmatizing conditions to remain at least initially anonymous as they 'lurk' before contributing (Davison, Pennebaker, & Dickerson, 2000). These qualities reduce users' feeling of threat and allow them to develop a sense of identity and closeness to their like-minded virtual interaction partners (Bargh & McKenna, 2004; Bargh, McKenna, & Fitzsimons, 2002). For users of stigma-relevant forums, then, these aspects of online interactions may represent unique benefits not fulfilled by Facebook groups. In the rush to embrace social networking sites such as Facebook, both academics and the broader community are in danger of losing sight of these benefits, and indeed, forgetting they exist and may be of particular use for those who have social stigmas (see also Hurdley, 2013). With that said, we are not aware of any research that has directly compared how Facebook and traditional forums work, so this view requires empirical substantiation.

Before concluding we do need to mention two potential limitations of this work. First, as noted, given the cross-sectional nature of our data, we cannot infer causal relationships. Second, users from the different forums self-selected to participate in the study, which limits the degree to which we can generalize our findings (Bethlehem, 2008). This is a perpetual problem that faces most survey-based research, and particularly research conducted online, and it is not possible to mitigate against the potential for bias entirely. We therefore must add the caveat that this necessarily limits somewhat the generalizability of our findings.

5. Conclusions

Dwarfed in recent years by more prominent social media giants such as Facebook and Twitter, forums appear anecdotally to have assumed an unfashionable status in many organizations' eyes, being viewed as a primitive form of communication whose time has passed. This observation is partly based on feedback we have received when presenting these findings at end-user conferences. Such a view is also echoed by forum moderators themselves seeking to sell the benefits. A recent comment on one large forum perfectly captures this mood:

"I've contacted a number of larger organizations with members anywhere from 100 k to 500 k and asked them if they would be interested in creating a discussion forum for their members. I told them of the benefits of bringing...members closer together by finding common interests and having a dedicated online "space" for them to congregate and talk about things relevant to their organization... All of the responses I've received... they have decided the direction they want to go with social media and it is [Facebook] and Twitter, but I tell them that this is something completely different than those two forms of [social media]."

[http://www.technibble.com/forums/showthread.php?p= 336934]

We agree with this poster. Forums offer something different and their potential to provide social capital and effect related offline civic activity remains a largely untapped force, and one that is in danger of being eclipsed by their larger, and more seductive contemporary social networking cousins. If this should happen, we would consider it a shame. The need for forums has certainly not decreased, and forum providers should be actively promoting the benefits of forum use more widely and energetically. The uninitiated may yet need convincing, but converted, committed and active users already know that forums can transform lives. In the words of Radin (2006, p. 599–600), the forum formula "...succeeds in transforming many casual visitors into people who wholeheartedly contribute to the community...by their very existence, [online forums] are planting the seeds of revolution."

Acknowledgements

References

Allison, K. W. (1998). Stress and oppressed category membership. In J. K. Swim & C. Stangor (Eds.), *Prejudice: The target's perspective* (pp. 145–170). San Diego, CA: Academic. http://dx.doi.org/10.1016/B978-012679130-3/50042-9.

Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of other in the self scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology, 63*(4), 596–612. http://dx.doi.org/10.1037/0022-3514.63.4.596.

Aumônier, S., Collins, M., & Garrett, P. (2008). *An updated lifecycle assessment study for disposable and reusable nappies*. Environment Agency.

Bargh, J. A., & McKenna, K. Y. A. (2004). The internet and social life. *Annual Review of Psychology, 55*, 573–590. http://dx.doi.org/10.1146/annurev.psych.55.090902.141922.

Bargh, J. A., McKenna, K. Y. A., & Fitzsimons, G. M. (2002). Can you see the real me? Activation and expression of the "true self" on the internet. *Journal of Social Issues, 58*(1), 33. http://dx.doi.org/10.1111/1540-4560.00247.

Barnett, P. A., & Gotlib, I. H. (1988). Psychosocial functioning and depression: Distinguishing among antecedents, concomitants, and consequences. *Psychological Bulletin, 104*(1), 97. http://dx.doi.org/10.1037/0033-2909.104.1.97.

Baumeister, R., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3), 497–529. http://dx.doi.org/10.1037/0033-2909.117.3.497.

Bessière, K., Kiesler, S., Kraut, R., & Boneva, B. S. (2008). Effects of Internet use and social resources on changes in depression. *Information, Community & Society, 11*(1), 47–70. http://dx.doi.org/10.1080/13691180701858851.

Best, S. J., & Krueger, B. S. (2006). Online interactions and social capital: Distinguishing between new and existing ties. *Social Science Computer Review, 24*(4), 395–410. http://dx.doi.org/10.1177/0894439306286855.

Bethlehem, J. (2008). How accurate are self-selection web surveys? *Statistics Netherlands Discussion paper, 8014.*

Blanchard, A., & Horan, T. (1998). Virtual communities and social capital. *Social Science Computer Review, 16*(3), 293–307. http://dx.doi.org/10.1177/089443939801600306.

Boneva, B., Quinn, A., Kraut, R., Kiesler, S., & Shklovski, I. (2006). Teenage communication in the instant messaging arena. In R. Kraut, M. Brynin, & S. Kiesler (Eds.), *Computers, phones, and the Internet: Domesticating information technology* (pp. 201–302). New York: Oxford University Press.

Boulianne, S. (2009). Does internet use affect engagement? A meta-analysis of research. *Political Communication, 26*(2), 193–211. http://dx.doi.org/10.1080/10584600902854363.

Bruce, M. L., & Hoff, R. A. (1994). Social and physical health risk factors for first-onset major depressive disorder in a community sample. *Social Psychiatry and Psychiatric Epidemiology, 29*(4), 165–171.

Brunsting, S., & Postmes, T. (2002). Social movement participation in the digital age: Predicting offline and online collective action. *Small Group Research, 33*(5), 525–554. http://dx.doi.org/10.1177/104649602237169.

Byrne, D. N. (2007). Public discourse, community concerns, and civic engagement: Exploring black social networking traditions on BlackPlanet.com. *Journal of Computer-Mediated Communication, 13*(1), 319–340. http://dx.doi.org/10.1111/j.1083-6101.2007.00398.x.

Cacioppo, J. T., Hawkley, L. C., & Thisted, R. A. (2010). Perceived social isolation makes me sad: 5-year cross-lagged analyses of loneliness and depressive symptomatology in the Chicago Health, Aging, and Social Relations Study. *Psychology of Aging, 25*(2), 453–463. http://dx.doi.org/10.1037/a0017216.

Cameron, J. E. (2004). A three-factor model of social identity. *Self and Identity, 3*(3), 239–262. http://dx.doi.org/10.1080/13576500444000047.

Carden, R., & Rettew, S. (2006). Internet chat room use, satisfaction with life, and loneliness. *Psychological Reports, 98*(1), 121–122. http://dx.doi.org/10.2466/pr0.98.1.121-122.

Crocker, J., Major, B., & Steele, C. (1998). Social stigma. In D. Gilbert, S. T. Fiske, & G. Lindzey (Eds.). *Handbook of social psychology* (pp. 504–553). New York: McGraw-Hill. http://dx.doi.org/10.1177/1368430211427171 (5th ed.).

Cruwys, T., Haslam, S. A., Dingle, G. A., Haslam, C., & Jetten, J. (2014). Depression and social identity: An integrative review. *Personality and Social Psychology Review, 18*(3), 215–238 (doi: 1088868314523839).

Davison, K. P., Pennebaker, J. W., & Dickerson, S. S. (2000). Who talks? The social psychology of illness support groups. *American Psychologist, 55*(2), 205–217. http://dx.doi.org/10.1037/0003-066X.55.2.205.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71–75. http://dx.doi.org/10.1207/s15327752jpa4901_13.

DiMaggio, P., Hargittai, E., Neuman, W. R., & Robinson, J. P. (2001). Social implications of the Internet. *Annual Review of Sociology, 27*, 307–336. http://dx.doi.org/10.1146/annurev.soc.27.1.307.

Dimmick, J., Kline, S., & Stafford, L. (2000). The gratification niches of personal e-mail and the telephone: Competition, displacement and complementarity. *Communication Research, 27*(2), 227–248. http://dx.doi.org/10.1177/009365000027002005.

Dono, J., Webb, J., & Richardson, B. (2010). The relationship between environmental activism, pro-environmental behaviour and social identity. *Journal of Environmental Psychology, 30*(2), 178–186. http://dx.doi.org/10.1016/j.jenvp.2009.11.006.

Doosje, B., Spears, R., & Ellemers, N. (2002). Social identity as both cause and effect: The development of group identification in response to anticipated and actual changes in the intergroup status hierarchy. *British Journal of Social Psychology, 41*(1), 57–76. http://dx.doi.org/10.1348/014466602165054.

Eberhart, N. K., Auerbach, R. P., Bigda-Peyton, J., & Abela, J. R. Z. (2011). Maladaptive schemas and depression: Tests of stress generation and diathesis-stress models. *Journal of Social and Clinical Psychology, 30*(1), 75–104. http://dx.doi.org/10.1521/jscp.2011.30.1.75.

Ellemers, N., Spears, R., & Doosje, B. (2002). Self and social identity. *Annual Review of Psychology, 53*(1), 161–186.

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication, 12*(4), 1143–1168. http://dx.doi.org/10.1111/j.1083-6101.2007.00367.x.

Ellison, N. B., Steinfield, C., & Lampe, C. (2011). Connection strategies: Social capital implications of Facebook-enabled communication practices. *New Media & Society, 13*(6), 873–892. http://dx.doi.org/10.1177/1461444810385389.

Fielding, K. S., McDonald, R., & Louis, W. R. (2008). Theory of planned behaviour, identity and intentions to engage in environmental activism. *Journal of Environmental Psychology, 28*(4), 318–326. http://dx.doi.org/10.1016/j.jenvp.2008.03.003.

Fischer, C. S. (1992). *America calling: A social history of the telephone to 1940*. California: University of California Press. http://dx.doi.org/10.1080/00273171.2012.640596.

Fritz, M. S., Taylor, A. B., & MacKinnon, D. P. (2012). Explanation of two anomalous results in statistical mediation analysis. *Multivariate Behavioral Research, 47*(1), 61–87. http://dx.doi.org/10.1080/00273171.2012.640596.

Garcia-Reid, P. (2007). Examining social capital as a mechanism for improving school engagement among low income Hispanic girls. *Youth & Society, 39*(2), 164–181. http://dx.doi.org/10.1177/0044118X07303263.

Goffman, E. (1963). *Stigma: Notes on the management of spoiled identity*. Engelwood-Cliffs, NJ: Prentice Hall.

Gross, E. F., Juvonen, J., & Gable, S. L. (2002). Internet use and well-being in adolescence. *Journal of Social Issues, 58*(1), 75–90. http://dx.doi.org/10.1111/1540-4560.00249.

Hampton, K. (2002). Place-based and IT mediated community. *Planning Theory and Practice, 3*(2), 228–231. http://dx.doi.org/10.1080/14649350220150099.

Hampton, K., & Wellman, B. (2003). Neighboring in Netville: How the Internet supports community and social capital in a wired suburb. *City & Community, 2*(4), 277–311. http://dx.doi.org/10.1046/j.1535-6841.2003.00057.x.

Hampton, K. N., & Wellman, B. (2000). Examining community in the digital neighborhood: Early results from Canada's wired suburb. In *Digital cities* (pp. 194–208). Berlin, Heidelberg: Springer.

Haslam, S. A., & Reicher, S. (2006). Stressing the group: Social identity and the unfolding dynamics of responses to stress. *Journal of Applied Psychology, 91*(5), 1037. http://dx.doi.org/10.1037/0021-9010.91.5.1037.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.

Heckman, T. G., Heckman, B. D., Kochman, A., Sikkema, K. J., Suhr, J., & Goodkin, K. (2002). Psychological symptoms among persons 50 years of age and older living with HIV disease. *Aging & Mental Health, 6*(2), 121–128. http://dx.doi.org/10.1080/13607860220126709a.

Herzog, H. (1944). What do we really know about day-time serial listeners? In P. F. Lazarsfeld & F. N. Stanton (Eds.), *Radio research, 1942–1943* (pp. 3–33). New York: Duel, Sloan and Pearce.

House, J. S., Umberson, D., & Landis, K. R. (1988). Structures and processes of social support. *Annual Review of Sociology, 14*, 293–318. http://dx.doi.org/10.1146/annurev.so.14.080188.001453.

Howard, P. E. N., Rainie, L., & Jones, S. (2001). Days and nights on the Internet: The impact of a diffusing technology. *American Behavioral Scientist, 45*(3), 383–404. http://dx.doi.org/10.1177/0002764201045003003.

Hurdley, R. (Interviewee). (4 September 2013). *Thinking allowed: Erving Goffman.* [Radio series episode]. London: BBC.

Jenkins, H. (2006). *Fans, bloggers, and gamers: Exploring participatory culture*. New York: NYU Press.

Jetten, J., Haslam, C., & Haslam, S. A. (Eds.). (2012). *The social cure: Identity, health and well-being*. Hove, England: Psychology Press.

Jetten, J., Haslam, C., Haslam, S. A., & Branscombe, N. R. (2009). The social cure. *Scientific American Mind, 20*(5), 26–33. http://dx.doi.org/10.1038/scientificamericanmind0909-26.

Junco, R. (2012). Too much face and not enough books: The relationship between multiple indices of Facebook use and academic performance. *Computers in Human Behavior, 28*(1), 187–198. http://dx.doi.org/10.1016/j.chb.2011.08.026.

Jurgenson, N. (2012). When atoms meet bits: Social media, the mobile web and augmented revolution. *Future Internet, 4*(1), 83–91. http://dx.doi.org/10.3390/fi4010083.

Katz, E., Blumler, J. G., & Gurevitch, M. (1974). Utilization of mass communication by the individual. In J. G. Blumler & E. Katz (Eds.), *The uses of mass communication*. Beverly Hills, CA: Sage.

Kavanaugh, A., Carroll, J. M., Rosson, M. B., Reese, D. D., & Zin, T. T. (2005). Participating in civil society: The case of networked communities. *Interacting with Computers, 17*(1), 9–33. http://dx.doi.org/10.1016/j.intcom.2004.10.006.

Klandermans, B. (2002). How group identification helps to overcome the dilemma of collective action. *American Behavioral Scientist, 45*(5), 887–900. http://dx.doi.org/10.1177/0002764202045005009.

Kraut, R., Kiesler, S., Boneva, B., Cummings, J., Helgeson, V., & Crawford, A. (2002). Internet paradox revisited. *Journal of Social Issues, 58*, 49–74. http://dx.doi.org/10.1111/1540-4560.00248.

Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukhopadhyay, T., & Scherlis, W. (1998). Internet paradox: a social technology that reduces social involvement and psychological well-being? *American Psychologist, 53*(9), 1017–1031. http://dx.doi.org/10.1037/0003-066X.53.9.1017.

LaRose, R., Eastin, M. S., & Gregg, J. (2001). Reformulating the internet paradox: Social cognitive explanations of Internet use and depression. *Journal of Online Behavior, 1*(2), 1092–4790.

Li, C., & Bernoff, J. (2011). *Groundswell: Winning in a world transformed by social technologies*. Boston, Massachusetts: Harvard Business Review Press.

Lumley, M. N., & Harkness, K. L. (2007). Specificity in the relations among childhood adversity, early maladaptive schemas, and symptom profiles in adolescent depression. *Cognitive Therapy and Research, 31*, 639–657. http://dx.doi.org/10.1007/s10608-006-9100-3.

Martínez, M. L., Peñaloza, P., & Valenzuela, C. (2012). Civic commitment in young activists: Emergent processes in the development of personal and collective identity. *Journal of Adolescence, 35*(3), 474–484. http://dx.doi.org/10.1016/j.adolescence.2011.11.006.

McKenna, K. Y. A., & Bargh, J. A. (1998). Coming out in the age of the Internet: Identity "demarginalization" through virtual group participation. *Journal of Personality and Social Psychology, 75*(3), 681–694. http://dx.doi.org/10.1037/0022-3514.75.3.681.

Mesch, G. S. (2001). Social relationships and Internet use among adolescents in Israel. *Social Science Quarterly, 82*(2), 329–339. http://dx.doi.org/10.1111/0038-4941.00026.

Morgan, C., & Cotton, S. R. (2003). The relationship between Internet activities and depressive symptoms in a sample of college freshmen. *Cyberpsychology & Behavior, 6*, 133–142. http://dx.doi.org/10.1089/109493103321640329.

Nie, N. H., & Hillygus, D. S. (2002). The impact of Internet use on sociability: Time-diary findings. *IT & Society, 1*(1), 1–20.

Nie, N. H., Hillygus, D. S., & Erbring, L. (2002). Internet use, interpersonal relations, and sociability. *The Internet in Everyday Life*, 215–243.

Pasek, J., More, E., & Romer, D. (2009). Realizing the social Internet? Online social networking meets offline civic engagement. *Journal of Information Technology & Politics, 6*(3–4), 197–215. http://dx.doi.org/10.1080/19331680902996403.

Pendry, L. F., Mewse, A. J., & Burgoyne, C. B. (2012). Environmentally friendly parenting: Are cloth nappies a step too far? *Young Consumers: Insight and Ideas for Responsible Marketers, 13*(1), 5–19. http://dx.doi.org/10.1108/17473611211203902.

Pool, I. De Sola (1983). *Forecasting the telephone: A retrospective technology assessment*. Michigan: Ablex Publishing.

Preacher, K. J., & Hayes, A. F. (2008). Assessing mediation in communication research. *Sage sourcebook of advanced data analysis methods for communication research*, 13–54.

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon and Schuster.

Quan-Haase, A., Wellman, B., Witte, J. C., & Hampton, K. N. (2002). Capitalizing on the net: Social contact, civic engagement, and sense of community. *The Internet in Everyday Life*, 291–324.

Radin, P. (2006). "To me, it's my life": Medical communication, trust and activism in cyberspace. *Social Science and Medicine, 62*(3), 591–601. http://dx.doi.org/10.1016/j.socscimed.2005.06.022.

Robinson, J. P., Kestnbaum, M., Neustadtl, A., & Alvarez, A. (2000). Mass media use and social life among Internet users. *Social Science Computer Review, 18*(4), 490–501. http://dx.doi.org/10.1177/089443930001800411.

Schwenk, T. L., Davis, L., & Wimsatt, L. A. (2010). Depression, stigma, and suicidal ideation in medical students. *Journal of the American Medical Association, 304*(11), 1181–1190. http://dx.doi.org/10.1001/jama.2010.1300.

Shah, D. V., Kwak, N., & Holbert, R. L. (2001). "Connecting" and "disconnecting" with civic life: Patterns of Internet use and the production of social capital. *Political Communication, 18*(2), 141–162. http://dx.doi.org/10.1080/105846001750322952.

Spears, R., Lea, M., Corneliussen, R. A., Postmes, T., & Ter Haar, W. (2002). Computer-mediated communication as a channel for social resistance: The strategic side of SIDE. *Small Group Research, 33*(5), 555–574. http://dx.doi.org/10.1177/104649602237170.

Stewart, A. J., & McDermott, C. (2004). Civic engagement, political identity, and generation in developmental context. *Research in Human Development, 1*(3), 189–203. http://dx.doi.org/10.1207/s15427617rhd0103_4.

Subrahmanyam, K., Reich, S. M., Waechter, N., & Espinoza, G. (2008). Online and offline social networks: Use of social networking sites by emerging adults. *Journal of Applied Developmental Psychology, 29*(6), 420–433. http://dx.doi.org/10.1016/j.appdev.2008.07.003.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. *The Social Psychology of Intergroup Relations, 74*, 33–47.

Tomai, M., Rosa, V., Mebane, M. E., D'Acunti, A., Benedetti, M., & Francescato, D. (2010). Virtual communities in schools as tools to promote social capital with high schools students. *Computers & Education, 54*(1), 265–274. http://dx.doi.org/10.1016/j.compedu.2009.08.009.

Tropp, L. R., & Wright, S. C. (2001). Ingroup identification as the inclusion of ingroup in the self. *Personality and Social Psychology Bulletin, 27*(5), 585–600. http://dx.doi.org/10.1177/0146167201275007.

Turkle, S. (1997). Multiple subjectivity and virtual community at the end of the Freudian century. *Sociological Inquiry, 67*(1), 72–84. http://dx.doi.org/10.1111/j.1475-682X.1997.tb00430.x.

Turkle, S. (2012). *Alone together: Why we expect more from technology and less from each other*. USA: Basic Books.

Valenzuela, S., Park, N., & Kee, K. F. (2009). Is there social capital in a social network site?: Facebook use and college students' life satisfaction, trust, and participation. *Journal of Computer-Mediated Communication, 14*(4), 875–901. http://dx.doi.org/10.1111/j.1083-6101.2009.01474.x.

van Zomeren, M., Postmes, T., & Spears, R. (2008). Toward an integrative social identity model of collective action: A quantitative research synthesis of three socio-psychological perspectives. *Psychological Bulletin, 134*(4), 504–535. http://dx.doi.org/10.1037/0033-2909.134.4.504.

Varni, S. E., Miller, C. T., McCuin, T., & Solomon, S. E. (2012). Disengagement and engagement coping with HIV/AIDS stigma and psychological well-being of people with HIV/AIDS. *Journal of Social and Clinical Psychology, 31*(2), 123. http://dx.doi.org/10.1521/jscp.2012.31.2.123.

Wang, J., Fick, G., Adair, C., & Lai, D. (2007). Gender specific correlates of stigma toward depression in a Canadian general population sample. *Journal of Affective Disorders, 103*(1), 91–97. http://dx.doi.org/10.1016/j.jad.2007.01.010.

Wellman, B., Haase, A. Q., Witte, J., & Hampton, K. (2001). Does the Internet increase, decrease, or supplement social capital? Social networks, participation, and community commitment. *American Behavioral Scientist, 45*(3), 436–455. http://dx.doi.org/10.1177/00027640121957286.

Wojcieszak, M. (2009). "Carrying online participation offline": Mobilization by radical online groups and politically dissimilar offline ties. *Journal of Communication, 59*(3), 564–586. http://dx.doi.org/10.1111/j.1460-2466.2009.01436.x.

Youniss, J. (2011). Civic education: What schools can do to encourage civic identity and action. *Applied Developmental Science, 15*(2), 98–103. http://dx.doi.org/10.1080/10888691.2011.560814.