BEYOND THE SHARE BUTTON: MAKING SOCIAL NETWORK SITES WORK FOR HEALTH AND WELLNESS

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AT A TIME WHEN MEDICAL CONDItions that can be prevented or managed with lifestyle changes are reaching record prevalence, such as obesity and type 2 diabetes, colleagues and I argue that learning when and how social media can appropriately and effectively help promote and support healthy behavior is a critical research challenge (Hesse 2010). I have been studying one piece of this larger challenge, specifically, how can, and when should, designers of wellness activities integrate their interventions with social network sites such as Facebook to help people increase or maintain their wellness?

I will review the motivations for building wellness activities into social network sites and the results from three studies—two application deployments and an interview-based study of existing practices—that are helping us learn appropriate ways to leverage the potential of Facebook for health and wellness interventions. I then describe some of the challenges in doing so and conclude with future research and design directions.

Benefits of sharing for health and wellness

Several commercial products, such as DailyMile, HealthMonth, and LoseIt, and research systems, such as Houston (Consolvo 2009) and Fish'n'Steps (Lin 2006), highlight the potential of using social mechanisms in wellness interventions or online health communities. My colleagues and I have explored the potential of integrating wellness interventions

with existing social network sites, particularly Facebook, through three studies (see "Three Main Studies").

Across these systems, studies and experience show that people often benefit from social pressure and support, accountability, and advice from others, whether they are sharing with other participants in a wellness activity, other members of an online health commu-

nity, or some friends and family on Facebook or Twitter. Online health communities connect people with similar experiences, and they offer their members opportunities for emotional support, advice, and accountability. Like other online communities and other wellness activities, online health and wellness interventions can also struggle with adoption and adherence issues and

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Three main studies

3GT: Based on the positive psychology exercise "Three Good Things," my first Facebook application, 3GT (Munson, 2010), allowed people to record positive things that happened to them every day and the reasons why they happened. People who participate in this activity can train themselves to focus more on the positive aspects of life and dwell less on the negative. Offline, individual participation in this activity has been shown to reduce symptoms of depression and increase happiness (Seligman, 2005).

In a variation from the original activity, which is completed as a private exercise, 3GT users can share their positive experiences with other users of the application or post them to their Facebook NewsFeed. I had hoped that this would lead to more social interaction around positive experiences posted to the NewsFeed, either through likes or comments, thus causing people to focus even more on what was going well, and possibly increasing the effectiveness of the intervention. 3GT has been continuously available for Facebook users since July 2009.

GoalPost: People can use GoalPost to set physical activity goals, record their activities, and view their progress toward these goals on their iPhone or iPod touch. They can also share these goals, their activities, and progress (or lack thereof) on their Facebook NewsFeed using the application's Share feature. GoalPost was deployed for a four-week field trial with 23 participants.

Interviews with people using online heath communities and Facebook: In the third study, my colleagues and I conducted interviews with 14 people who successfully used both online health communities such as SparkPeople and dLife as well as Facebook to help meet their health needs when trying to manage weight or diabetes (Newman, 2011). Through these interviews, we learned how these individuals chose what information to share where and how the different spaces supported meeting different goals.

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require integrating new routines into their daily lives. Also, while online health communities often offer a sense of comfort through anonymity or by being disconnected from the rest of an individual's online presence, interactions with existing connections may sometimes be better than interactions with strangers, who have limited knowledge about each other's personalities and contexts and whose opinions may not have much weight.

My colleagues and I have focused our work on existing social network sites, such as Facebook and Twitter, because we believe that these spaces may offer unique advantages and opportunities for some types of sharing in comparison to online health communities.

First, popular social network sites, such as Facebook, are already a gathering place and a part of people's daily routines. Nearly 50% of Facebook users visit the site each day, and they spend quite a bit of time there, connecting with friends, family, colleagues, people they used to know, organizations, and brands. Integrating with such a "sticky" space may overcome one of the main challenges in adopting a new social tool: that this adoption often requires modifying an existing routine or establishing a new one.

Second, some activities that support wellness may be more effective when they are shared with existing connections, whose opinions matter, rather than with strangers in an online health community. Celebrations may be more meaningful when shared with friends and family, and the consequences of not meeting a goal or not following through on a plan are likely to be greater with friends or family who can hold someone accountable than with strangers.

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Others have seen this potential as well. Many commercial fitness applications allow people to share their fitness activities—such as running routes, distances, and times or calories burned in a day or week—on their Twitter and Facebook feeds. There are also many Facebook groups related to healthy living or managing specific illnesses, with one study finding 46 public support groups for breast cancer alone, with some created to support any patient or caregiver and others created to support specific individuals (Bender 2011). Many people use these sharing features and groups or make free-form posts talking about their fitness activities or other health behaviors (Kendall 2011).

In the studies I have conducted, people talk about three benefits from even simply sharing health and wellness information on social network sites: making a good impression, inspiring others, and connecting with existing friends and family around wellness activities.

Making a good impression.

Many participants in my studies liked that Facebook gave them a way to share major successes (see Fig. 1)—either single events such as completing a marathon or a new, healthier identity—with people who knew them at a time when they struggled more:

> I have a lot of high school friends on [Facebook]. And in high school I was always the band nerd and I was really overweight back then. And so I kind of like to "out" my running ability now....I like to really talk about my running on Facebook. Because I'm so darn proud of it … (participant in an online health community study).

For this person, these posts have been liked and received positive comments from friends who never saw her that way in high school, which has been a very satisfying outcome.

Inspiring others

In addition to the anticipated benefits that motivated these studies,
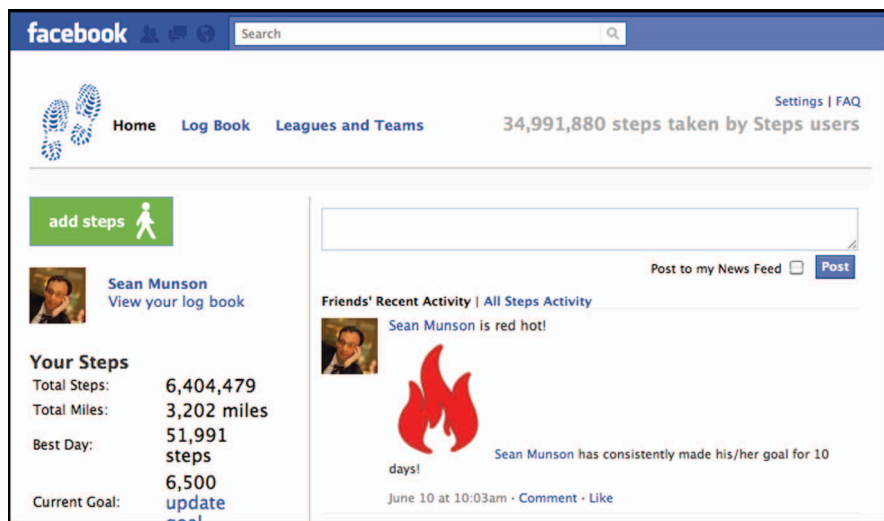
Fig. 1 Steps users can track their own steps, set goals, make long term commitments, and view their own and friends' progress using a Facebook app.

participants' experiences also highlighted some additional opportunities. In interviews, several talked about how they hoped Facebook posts about successes, goals, or routine physical activity would encourage and inspire family and friends who were less fit to become more active.

Connecting around wellness activities and being held accountable.

One of the participants who used GoalPost found a workout partner as a consequence of sharing a recent workout on his Facebook NewsFeed. They had been friends but not realized they had similar gym goals, and this led to them both going more often than they had before. Others wanted the applications to help them stay connected to exercise partners, running groups, or sports teams, as added reminders to do the training or to be held accountable. Some wellness applications, such as Adidas's miCoach, support in-application sharing among groups of friends or running groups, but these require that everyone sign up for the tool and integrate it into their routine, while Facebook already is part of many people's days.

Similarly, while many people already use online health communities to find accountability partners for exercise or diet, there are some limitations in comparison to doing so with one's existing social network. In particular, strangers in an online health community are often unmotivated or unable to find someone to check in with if they stop visiting that community, and so the people who may most need a push to get back on track

with their goals are the ones most likely to slip through the cracks. In contrast, people revisit Facebook for reasons other than wellness and are usually connected with at least some of their Facebook friends in face-to-face settings, by e-mail, or by phone, and so their Facebook friends are better able to follow up with them when they stop participating.

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For some, then, accountability works better with their existing connections. Others try to bring their accountability partners from other spaces, such as SparkPeople, further into their network, by inviting them to be friends on Facebook or communicating with them through other channels such as e-mail.

Facing challenges

While our studies support my intuitions about the potential benefits of sharing wellness information on Facebook, they also have shown challenges greater than I initially anticipated. These challenges relate to connecting with people who have the appropriate

experience, managing impressions, sharing appropriately, and getting desired reactions.

Connecting with people who have the appropriate experience

Research has found that people can get more personalized support from their social networks, but that patients' social connections often lack experience with the disease or condition and knowledge of what the patient needs (Skeels 2010). Both types of knowledge can be important. Other people with the same condition can empathize about each other's difficulties, share personal stories, and give advice based on these experiences and show support by expressing what they knew that helped them or what they would have wanted. They do not, however, have a shared history or preexisting relationship and may know less about which types of support or pressure work best for each other and may not know enough about each other's individual context to give practical advice.

In contrast, friends who have not had similar experiences, or had not had "that journey," are often unable to really understand it and thus unable to give useful advice or the most needed support. Study participants talked about how support is often better when it comes from someone who has been through or is going through the same experience because that person understands what they are going through and is less likely to downplay the difficulties in ways that others might. This was even more important for offering pressure or accountability: many did not want to be held accountable to someone else who was not making similar efforts, and many did not want to hold someone accountable unless they had received a specific request to do so and were also making similar efforts themselves.

Managing impression

While existing social network sites can help people communicate successes and healthy activity as part of their identity, meeting health needs often requires asking for support or advice and revealing struggles or weaknesses. Doing so on a social network site, however, can be problematic. The average Facebook user has 130 friends (according to the Facebook statistics page at www.facebook.com/press/info.php?statistics), including strong and weak ties, from a variety of contexts including friends,

family, colleagues, and people they used to know. While some of these individuals may already be aware of one's health and wellness struggles and successes, others are not, and people generally do not want to broadcast their struggles to friends who are unaware.

> There are some people I wouldn't care about if they saw [posts I might make about health on Facebook] but I got people, you know, from my high school that I am friends with that I haven't talked to in 25 years. And I have no desire for them to know about my weight issues or weight status (participant in an online health community study).

Others said that that they would be uncomfortable seeing many postings about others' struggles or failures:

> I'd wonder why they feel a need to publicly shame themselves and question their self-esteem and personal boundaries. (A GoalPost participant describing what it would be like to see status updates about people not meeting goals.)

A related concern is the fear of discoverability of their health information. Though participants in many online health communities have detailed profiles and reveal information that gives at least strong clues to their real-world identity, and are aware of this, they post under separate usernames and trust that this information will not be found by someone searching for their name or who has no business being on that particular site. Using a screen name separate from their real name, in a separate space, helps protect this privacy and comfort in that setting, even if a determined individual could use the information they post there to figure out their real name and identity.

Sharing appropriately

Related to impression management, participants in 3GT and GoalPost reported difficulty knowing what would be appropriate to share or expressed concerns that posts about happiness, everyday fitness activities, or losing weight could appear boastful, boring, or mundane, especially if made too frequently. Participants in each study described fears of boring their friends, of being seen as "showing off," creating posts that make people react with "who cares?" or that get "winced about":

> All I could think of was that Farmville thing where I'm always seeing that someone has a cow. That is so annoying. And so I didn't want to annoy another person (GoalPost participant).

If a participant annoyed or bored their friends, their updates might be hidden or they might be unfriended, since that is

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how the participant reacts when friends make too many annoying or boring posts. These concerns are supported by studies of unfollowing or unfriending behavior that find that posting about uninteresting or mundane things, too often, are common reasons for the tie to be broken (Kwak 2011; Sibona 2010).

Though many of the good things posted in 3GT look a lot like status updates that people might make to Twitter or Facebook, participants were concerned that posting too many of these to their feeds still might make them look boastful or boring, even though they said they would like to see more of these updates from their friends. This contrast suggests that people may have trouble determining what posts would be interesting rather than boring or annoying to their friends or followers, or that they may believe their friends are not interested in seeing as many of these posts as they are.

Overall, most participants in these studies agreed that sharing bigger achievements, such as meeting a long-term goal or a new longest run, or more interesting posts about these activities, such as photos, would be more appropriate than regular updates about everyday positive experiences or daily fitness activities.

Getting desired reactions

Even when people are comfortable sharing information on an existing social network site, they often do not get the reaction for which they hoped. Across studies, participants told us that Facebook does not have a norm of supportive responses, unlike the online health communities in which some participated. Posts about fitness, diet, or other wellness struggles sometimes resulted in sarcastic, negative, or just unhelpful replies from others.

Many participants also interpreted a lack of response to shared posts as a sign that their friends were not interested and potentially annoyed and did not consider the possibility that the post had merely not been selected for inclusion in their friends' NewsFeeds by Facebook's algorithms. Because participants who chose to share these updates did so with the expectation that they would receive support, inspire others, or possibly even find a new activity partner, the silence or negative reactions were particularly disappointing.

Research and design directions

After three studies, I still believe that Facebook and other social network sites can be an important venue for social interactions around health and wellness; participants wanted to share accountability, support, advice, celebrations, and inspirations with at least some of their existing friends and felt that existing social network sites could be a good environment for doing so. I also believe that the challenges of designing appropriate ways to connect around health and wellness in these spaces are greater than I first anticipated, and that many of the current attempts to do so may be harmful for the people who use them. Encouraged by an application to share daily workouts or calories burned, someone may do so and may get some support—but they may also unknowingly have all of their updates hidden by some friends, and thus interact less with those friends. They may also get sarcastic and well-intentioned yet unhelpful replies.

More work, then, is required if we are to know how to build applications that help people share in ways that support their health and wellness goals while reducing the chance of negative or unhelpful interactions and consequences. Advances that help people better interact with their social networks around health data may help overcome some of the challenges and make it easier to attain some of the benefits I have identified.

These directions fall into two broad categories: 1) improving share

functionality, such as by helping people use appropriate rhetorical strategies and selectively access their network and 2) developing health and wellness interactions that go beyond simple status updates but for which existing social network sites may be particularly well suited.

Appropriate rhetorical strategies

Some people struggle with writing posts that get the reactions they desire. Designers of applications that automatically generate posts would benefit from a better understanding of what rhetorical styles are most likely to get different types of responses. For free-form posts, visualizations that increase a poster's awareness of the tone and style of their updates or systems that coach more directly might let people know when they have boasted considerably more than the others in their network, for example, or might suggest rephrasings based on posts that have historically received supportive or informative replies. This might also be combined with awareness of users' personalities, knowledge of what kind of feedback is most likely to benefit them, and either automated updates tailored to that combination

or coaches that guide free-form posts that will go over well with the poster's network.

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Selectively accessing one's network

Across each study, participants said that their Facebook network was too broad to share much health and wellness information with all of their Facebook friends, but almost all participants said that they would like to share with some of their Facebook friends, and that Facebook would be an appropriate place for doing this. A system that is aware of appropriate rhetorical strategies for support seeking or inspiring others might also be aware of people or the characteristics of people who would respond in a way that best supports the person making the post, and with whom sharing would be appropriate.

Appropriate groupings.

Sharing health struggles, success, or goals with existing contacts may sometimes result in more meaningful support and pressure, but sharing with one's entire set of Facebook friends can be problematic. Even when a portion of one's Facebook network would offer helpful feedback and would be appropriate with which to share, this was rarely true for the entire network. Participants in 3GT wanted to be able to message a smaller subset of their network, but still broader than just friends who were also using the application. Simply adding a feature to GoalPost that allowed people

create a support group with whom to share (Fig. 2)—similar in purpose to Facebook's recently unveiled "send" button that lets people share with specific individuals or groups—was not sufficient. Participants either did not want to go to the trouble of configuring it or were not sure whom to add. Some tried but put very few people in the support group and were later disappointed not to get a higher number of responses. Helping people identify and use appropriate groups for sharing—both in size and membership—will likely improve their abilities to selectively access their social network.

Balancing interactions with strangers and interactions with existing contacts.

For people who are reasonably confident of success, the ideal supporter and accountability partner may be someone they already know, who either has been through or is currently going through the same journey or struggle. This person would be able to provide relevant advice, meaningful support, and considerable pressure to stay on track. People who are less confident may benefit from an anonymous support group or group of strangers who have experience with the same condition. The anonymity may make them more comfortable signing up for the intervention in the first place as the stakes are lower than with real connections.

Currently, my colleagues and I are preparing to deploy a third application, Steps, that people use to track and share their walking with other users of the application and their existing friends. Like some commercial applications, Steps combines an interested community of strangers and friends within the application with the ability to share beyond the application to reach others. We believe that this may offer users a better balance of social interactions than our previous applications, which did not include the ability to share with other users of the application who they do not already know. Though this level of integration may turn out to be appropriate for an application like Steps—which focuses on walking—I doubt that there is a one-size-fits-all solution for integrating health and wellness interventions into existing social network sites. For more stigmatizing conditions, in particular, it is likely that integrating the data with one's Facebook profile—at all—will make that information too discoverable.
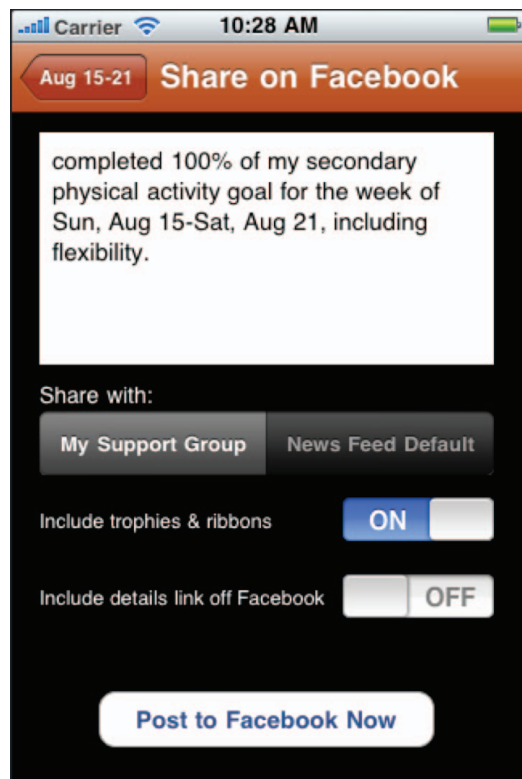
Fig. 2 GoalPost's share screen allows users to select and edit what they share, with whom they share, whether to include trophies and ribbons they earned, and whether they wanted to make the full post available on Facebook.

Beyond the share button

As some application developers are already finding, there are promising ways to use status updates beyond simply giving users the option to post their own messages or preformatted updates and summaries. For example, in Steps, we are experimenting with posts that users write but that are held until later and posted according to whether a user does or does not meet their weekly or monthly goal. We are also trying other forms of regular, summary posts, either among application users or posted to the NewsFeed. Participants in other studies have told us that while these automated posts from other applications may sometimes annoy, they also may let the user escape some of the blame: they are not boasting about their own accomplishments, the application is doing it for them. Others disagreed and held friends responsible for anything an application posts on their behalf.

Steps also allows for interactions outside of status updates, Tweets, or similar posts. One promising type of interaction is *comparisons* with others. Using the step count data, we are able to show people comparisons to friends, family, or strangers, and an opportunity to learn which comparisons work best: when should they be shown, with whom, and with what levels of anonymity or what personal details? For example, characteristics unrelated or only somewhat related to the activity being measured (e.g., a new mother comparing walking may be more motivated by strangers who are succeeding and who are also new mothers than by friends who are not in the same situation) and profiles on some social network sites have a rich set of potential similarities from which to draw. While there has been extensive research on social comparisons (Wood 1989), research on ongoing social comparison in discretionary use conditions has been more limited.

Conclusion

My research highlights many challenges and opportunities with using Facebook to support health and wellness. Though I do not have answers to all of the questions I outlined at the beginning of this article, the work by myself and others helps researchers and practitioners better understand how social network sites can work for wellness, as well as some of the barriers to successful health or wellness

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interactions on these sites. There remains much work to do, however.

Finally, though advancing some of these research challenges may enable building systems that better support health and wellness behaviors or behavior change, designers of these systems should constantly ask what it would be like to live with these systems. Systems that have been optimized to nudge or even push individuals to change their behavior—even when those individuals are explicitly pursuing those behavior changes—may lead to small individual health victories or progress toward societal goals at some cost to individual experiences and choices.

Acknowledgments

Read more about it

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