



# Collaboration on Social Network Sites: Amateurs, Professionals and Celebrities

BERND PLODERER, STEVE HOWARD & PETER THOMAS

*Department of Information Systems, The University of Melbourne, 111 Barry Street, Carlton, Victoria 3010, Australia (Phone: +61-38344-1554; Fax: +61-39349-4596; Email: bernd@berndploderer.com)*

**Abstract.** Amateurs are found in arts, sports, or entertainment, where they are linked with professional counterparts and inspired by celebrities. Despite the growing number of CSCW studies in amateur and professional domains, little is known about how technologies facilitate collaboration between these groups. Drawing from a 1.5-year field study in the domain of bodybuilding, this paper describes the collaboration between and within amateurs, professionals, and celebrities on social network sites. Social network sites help individuals to improve their performance in competitions, extend their support network, and gain recognition for their achievements. The findings show that amateurs benefit the most from online collaboration, whereas collaboration shifts from social network sites to offline settings as individuals develop further in their professional careers. This shift from online to offline settings constitutes a novel finding, which extends previous work on social network sites that has looked at groups of amateurs and professionals in isolation. As a contribution to practice, we highlight design factors that address this shift to offline settings and foster collaboration between and within groups.

**Keywords.** amateurs, bodybuilding, career, celebrities, collaboration, community, leisure, passion, professionals, social network sites

## 1. Introduction

In recent years millions of people have adopted social network sites like Facebook, MySpace or LinkedIn. On these sites people present themselves on profile pages, they establish ties with other users and exchange messages with them. These interactions on social network sites are often deeply entwined with people's leisure and work (Boyd and Ellison 2007).

Previous CSCW research has addressed social network sites in both leisure and work. In the context of leisure, previous studies of social network sites have investigated their value for interactions with friends (Joinson 2008; Lampe et al. 2006, 2008) and leisure activities (Miller and Edwards 2007; Ploderer et al. 2008). Studies in the context of work have shown how co-workers use social network sites for collaborative projects and career climbing within an organization (DiMicco et al. 2008; Steinfield et al. 2009).

While the body of research in these two areas has been growing, little is known about social network sites for domains where the boundaries between work and leisure blur. Amateurs in art, science, sport, or entertainment carry out activities in their leisure that constitutes paid work for their professional counterparts. Ongoing involvement and achievements can turn amateur careers into professional ones and beyond, with the most established professionals becoming celebrities in their respective domain.

This paper presents a 1.5-year field study on the collaboration between and within amateurs, professionals and celebrities on a social network site for bodybuilders. All three groups engage in similar activities of training and dieting in order to compete in bodybuilding shows, yet their skills, social connectedness and financial dependence on the sport varies considerably. Accordingly, our findings show some common themes of online collaboration across amateurs, professionals and celebrities, but also highlight the differences between them. Amateurs use social network sites for their training and to establish friendships with other bodybuilders. Professionals and celebrities appropriate social network sites to promote their work and achievements, but they generally find friends and support for their training offline.

This shift of collaboration from social network sites towards offline settings along the career path constitutes a novel finding with significant implications for CSCW: First, it extends previous knowledge on social network sites for work and leisure activities (DiMicco et al. 2008; Miller and Edwards 2007; Ploderer et al. 2008; Steinfield et al. 2009) by showing how professional work and leisure blur. Second, it surfaces the limitations of collaboration on social network sites for amateurs, professionals and celebrities. Finally, it highlights important challenges in designing for online collaboration like transparency and the need to promote achievements to all users of social network sites and beyond.

In the next section, we review related work on social network sites for amateurs and professionals. That is followed by a discussion of the research context and our research approach. In the findings section we describe the similarities and differences in the online interactions between amateurs, professionals and celebrities. We conclude the paper by discussing how the findings extend previous work on social network sites and by raising the implications of our findings for the design of other social network sites for serious leisure activities.

## **2. Collaboration of Amateurs and Professionals**

Activities of amateurs and their professional counterparts challenge simplistic distinctions between leisure and work. Drawing from theory in the social sciences we describe the relationships between amateurs and professionals and explain how people develop careers within their domain. We then review the growing

number of CSCW applications for amateurs and related professionals and discuss how these groups use social network sites.

## 2.1 FRAMING AMATEURS AND PROFESSIONALS

Stebbins' (2007) 'serious leisure perspective' provides a framework to discuss the relationships between amateurs and professionals, and to distinguish them from other types of leisure and work. Serious leisure is usually based on regular activities that require skills, knowledge and commitment. Unlike other forms of leisure that are more casual or short-lived, serious leisure occupies an important and permanent space in the lives of participants and offers them opportunities for personal development and careers (Stebbins 1992).

Amateurs may engage in serious leisure activities in art, science, sport, and entertainment. In contrast to other serious leisure activities like collectors or birdwatchers, amateurs have professional counterparts that provide inspiration and offer career opportunities. In the absence of financial incentives, amateurs are motivated by self-gratification and social status in the domain (Stebbins 1979).

Professionals on the other hand make a living based on similar activities that are carried out by amateurs for little or no remuneration. This type of professionalism refers to artists, athletes, or entertainers who perform for the public, in contrast to client-centered professionals like lawyers or engineers (Stebbins 2007). The financial insecurity in these public-centered areas causes many professionals to supplant their income with teaching or other jobs. Often only the leaders in their domain - the celebrities – are free from tensions over balancing financial insecurities (Stebbins 1992).

Celebrities are important as role models for the careers of amateurs and professionals alike. Though not all amateur careers turn professional, and typically only very few reach celebrity status, the careers of celebrities provide a sense of what is achievable and therefore desirable within a domain. Such paradigmatic trajectories are likely to influence the careers of amateurs and professionals (Wenger 1998).

Career development at all levels relies on the development of skills, knowledge and experience through continuous participation in the respective domain (Stebbins 2007). Lave and Wenger's (1991) discussion of career trajectories in the context of 'communities of practice' further highlights the importance of developing an identity in addition to acquiring the necessary skills. Communities of practice are social groups defined by a shared enterprise, like a shared interest, activity or passion, rather than a shared location (Lave and Wenger 1991). The artists, scientists and athletes discussed in the serious leisure context (Stebbins 2007) vividly illustrate the communities of practice concept, because they all share an understanding about what they are doing and its meaning for their lives, (Lave and Wenger 1991). The careers of amateurs and professionals can be further described by their status in the community of practice: Experienced

members like professionals or celebrities have a rather central status in the community, but new inventions or new events force them to keep progressing. New members like amateurs are in a peripheral position. They have to develop their skills and identity through ongoing participation in the shared activities, which allows them to move towards more central positions (Lave and Wenger 1991). All these activities require collaboration with others, which highlights the potential of technologies to facilitate the collaboration between amateurs, professionals and celebrities.

## 2.2 COLLABORATIVE TECHNOLOGIES FOR AMATEURS, PROFESSIONALS, AND CELEBRITIES

Previous work in CSCW has examined the role of discussion forums, wikis and other online technologies in facilitating collaboration amongst amateurs, professionals and celebrities. Studies of amateur craftspeople, photographers or radio enthusiasts have shown that online technologies play a critical role in sharing information (Torrey et al. 2009) and facilitating communication and learning (Bogdan and Bowers 2007; Bogdan and Mayer 2009). Amateurs use online technologies to coordinate group activities like competitions and to negotiate criteria to judge each other's work by (Grinter 2005).

Online technologies have not only supported traditional amateur activities but also created new outlets for amateur work, i.e., for creative work and knowledge work. On the one hand, authoring tools support the collaboration of creative communities (Bardzell 2007; Bruckman 2002; Davis and Moar 2005; Luther and Bruckman 2008) and the distribution of their work to the public (Cook et al. 2009). On the other hand, online technologies like Wikipedia rely on amateurs together with professionals who voluntarily contribute their knowledge (Nov 2007). Ensuring the quality of information on Wikipedia constitutes a challenge to its contributors (Kittur and Kraut 2008), however their effort is rewarded with highly visible contributions (Butler et al. 2008) and for some individuals it even provides a benefit for their professional career (Nov 2007).

Similarly, CSCW work has investigated creative work and knowledge work of professionals. Recent studies have examined how creative workers appropriate technologies to support creativity and coordinate tasks through shared workspaces (Martin et al. 2009; Vyas et al. 2009). Websites like Mechanical Turk help companies to outsource knowledge work to large numbers of individuals on the Internet, yet they raise new challenges in evaluating the quality of the outcome (Kittur et al. 2008).

Collaborative technologies harness new opportunities for amateur and professional work as well as for celebrities. Celebrities benefit from online discussions in fan communities, which help to promote their work (Baym 2007). Often fan sites are set up and run by the fans themselves who seek to establish a relationship with the celebrity (Baym and Burnett 2009).

## 2.3 SOCIAL NETWORK SITES FOR AMATEUR AND WORK CONTEXTS

In the past few years millions of individuals have integrated social network sites into their practices. They use them to present themselves online, to connect with their friends and colleagues, or to network with strangers based on shared interests and activities. Social network sites focus on individuals and their personal networks, which sets them apart from other online technologies like discussion forums, wikis or blogs (Boyd and Ellison 2007; Ellison et al. 2009).

Previous scholarship has predominantly studied ‘friend-based social network sites’ like Facebook and MySpace, investigating how people use them to maintain relationships with existing ties (Burke et al. 2009; Gilbert et al. 2008; Lampe et al. 2008), and the benefits and risks that arise in their use (Binder et al. 2009; Brown et al. 2008; Joinson 2008; Lewis et al. 2008). Only a few studies have investigated how social network sites facilitate the activities of amateurs, professionals or celebrities.

Amateurs usually congregate on so-called ‘passion-centric social network sites’ (Boyd and Ellison 2007). On these sites a shared passion facilitates connections and collaboration amongst strangers – people who have no offline connections. These strangers provide valuable support and recognition for the achievements of individuals (Ploderer et al. 2008). For example, studies of Flickr suggest that it provides new means for amateur photographers to connect with others, engage in discussions around photos and equipment, and to present their work to the public (Miller and Edwards 2007; Van House 2007).

Research on social network sites within organizations indicates that professionals use them to keep in touch with colleagues as well as to create new relationships with others in their organization (Chen et al. 2009; Steinfield et al. 2009). These online connections help people to get to know their colleagues better (DiMicco et al. 2008), but they can also create tensions, in particular, when private and professional spheres intersect (Skeels and Grudin 2009). Moreover, professionals participate in social network sites for career purposes to build up recognition as experts and to establish connections with people at the top management level, who could benefit their careers (DiMicco et al. 2008).

The music scene provides anecdotal evidence for social network sites used by celebrities. According to Wired Magazine (Howe 2005) bands like ‘My Chemical Romance’ have risen to celebrity status via MySpace. Many other bands try to follow their example and use social network sites like MySpace or Last.FM to promote their music to fans and record labels. Established celebrities in the music scene have adopted social network sites to facilitate communication to their fans and amongst them (Beer 2008).

Overall previous research shows that social network sites successfully support networking, collaboration and career development within groups, may it be groups of amateurs, professionals or celebrities. Despite their shared career trajectories, much less is known about how social network sites facilitate

collaboration *between* amateurs, professionals and celebrities within a domain. To address this gap, this study examines how amateurs, professionals and celebrities collaborate on a single social network site and draws out the differences in their online behaviors. In the next section we describe the context of our study and the methods used.

### **3. Research site and approach**

Similar to the work reviewed in the last section, this study aims to investigate how social network sites support collaboration *within* groups of amateurs, professionals and celebrities. Beyond that, this study aims to illicit how social network sites facilitate also collaboration *between* these three groups. We seek to unpack the relevance of social network sites for the personal development of amateurs, professionals and celebrities, and we highlight the differences between these three groups in the ways they participate online.

#### **3.1 RESEARCH SITE AND CONTEXT**

The context of this study is bodybuilding, which like many other sports has a large group of amateurs but also allows for professional careers and for some to reach celebrity status. We distinguish between gym users and bodybuilders, because their motives differ significantly. Gym users usually work out to get fit or to improve for another sport (Crossley 2006), whereas bodybuilders use the gym to shape their physiques for competitions (Klein 1993). Thus we use the term ‘bodybuilder’ only to refer to people who compete in bodybuilding shows<sup>1</sup>.

Bodybuilding requires a strict lifestyle of daily weight training, diet and sufficient sleep to grow the muscles. Many bodybuilders are role models for healthy living, though some develop pathological behaviors, such as drug use, exercise dependence, or body image disorders (Monaghan 2001; Smith and Hale 2005; Wolke and Sapouna 2008). Even healthy engagement in bodybuilding runs the risk of social isolation due to the high demands on their time and the social stigma of the sport (Probert 2007). The demands involved in bodybuilding competitions and the possible pathological outcomes highlight the serious nature of this leisure activity.

Bodybuilding is well suited for the aims of this study because it has a single dominant social network site called BodySpace<sup>2</sup> that connects bodybuilders at all stages of their career from amateurs to celebrities. BodySpace currently has more than 400,000 registered users worldwide, who have a profile page to present themselves and to establish publicly articulated friendships with other users. BodySpace users can post comments on other profile pages and send private messages through BodySpace. Additionally, BodySpace profiles offer various bodybuilding specific features: They contain descriptions of goals and

achievements in bodybuilding shows, workout programs, and reviews of food supplements. Profiles include a photo gallery and links to videos on YouTube. Bodybuilders can use BodySpace to keep statistics about their weight training and their body, e.g., the size of their arms. Finally, they can share their experiences in trainings and competitions through a blog on their profile. All this information is public and searchable through BodySpace.

BodySpace is part of the larger bodybuilding website Bodybuilding.com, which provides comprehensive information on all aspects of bodybuilding from training methods to competition results. BodySpace and Bodybuilding.com are free to use because they are integrated with an online shop that sells food supplements and accessories for fitness training.

### 3.2 DATA COLLECTION AND ANALYSIS

We conducted a field study to understand the practices of bodybuilders and their collaboration on social network sites. The field study ran in two phases from September 2007 to February 2009. We carried out phase 1 in Australia, where bodybuilding is predominantly an amateur activity. We continued phase 2 in California to extend our study to professional bodybuilders. Professional bodybuilding originated in California and to date it is the cultural and commercial center of the bodybuilding world (Hotten 2004; Klein 1993).

Our field study approach combined offline and online participant observation with semi-structured interviews. We conducted offline participant observations at 5 amateur bodybuilding shows and 1 professional bodybuilding show, and we worked out and observed bodybuilders in 15 gyms in both field study locations. The gyms varied from gyms for the general public to ‘hardcore’ bodybuilding gyms to better understand the relationships amongst bodybuilders and other gym users. We captured our observations in field notes, which served as primary data for our analysis and guided our interviews and online observations.

We conducted online participant observations on BodySpace and BodySpace-related websites on Bodybuilding.com throughout the entire field study. Though BodySpace is publicly accessible for anyone, the first author created a BodySpace profile that revealed his real name, his affiliation as a researcher and a link to a website that explained the aims of the study. We did this to disclose our presence and intentions to other users of the website following recommendations for online research ethics (Ess and AoIR ethics working committee 2002; Hookway 2008). Furthermore, it allowed us to appropriate the features for our own training and to collaborate with other users on BodySpace. We logged on to BodySpace on a daily basis and collected online data using the Mozilla Firefox extension Scrapbook. Scrapbook saves online data on the local hard disc and supports annotations. We used this data for our analysis and for our interviews.

Finally, we used semi-structured interviews to discuss the relationship between bodybuilding careers and the use of BodySpace. We conducted interviews with

22 BodySpace users and 3 further interviews with bodybuilders who are not on BodySpace to extend and to verify our findings (18 male, 7 female, ranging from 20 to 56 years). Using a purposive sampling strategy we recruited bodybuilders at different stages of their career (Neuman 2006). We contacted them via a private message on BodySpace or through personal contacts. The participants had between 2 and 39 years of bodybuilding experience (median = 9). Table 1 gives an overview of all participants showing their occupations and their bodybuilding career stage: 11 of the participants were amateurs and conducted bodybuilding as a leisure activity; 12 participants were professionals who made a living from bodybuilding-related jobs like personal training; 2 participants were celebrities in the scene, who had established themselves as a professional competitor or as an organizer of professional competitions respectively. We complemented our insights on celebrities with online data, observations at bodybuilding competitions and through the insights of 4 of the professionals, who were well connected to the bodybuilding elite and aspiring to become celebrities themselves ('pros' in their terminology). When possible, we conducted the interviews face-to-face in Australia and California (13), otherwise via telephone (9) or via email (3). The interviews lasted between 60 and 90 minutes and led to data saturation regarding our research question. We transcribed all data for later analysis.

We also collected the interview participants' BodySpace profiles for our data analysis. The profiles included personal descriptions of their bodybuilding activities and goals, photos, videos, lists of friends and comments. The participants had between 4 and 238 mutual friends on BodySpace (median = 61). Only 8 participants reported that they have contact with some of their BodySpace friends at bodybuilding shows or at the gym. The number of comments they received ranged widely from 2 to 217 (median = 63), as did the number of comments they left, ranging from 2 to 386 (median = 78). The profiles showed that all participants had visited BodySpace within the last 2 weeks before we interviewed them. The interview data further indicated that the frequencies of their BodySpace use ranged from daily use to monthly use.

We used a grounded approach to analyze the rich set of data consisting of field notes, online data and interview transcripts. Throughout the study we wrote analytic memos to develop initial ideas about codes and their relationship (Miles and Huberman 1994). At the end of each phase of data collection we imported all data into the analysis software NVivo 7.0 for coding. We followed a three-step process of open, axial and selective coding to reduce the data and to establish analytic themes regarding our research question (Neuman 2006). The analysis in phase 1 led to our initial themes (tool, community, theater), which describe how people collaborate on social network sites. In phase 2 we extended and refined these themes to draw out the differences between amateurs, professionals and celebrities. The next section describes these themes in detail.



*Table I.* List of participants sorted by career stage and their pseudonym. We use pseudonyms and anonymized all photos to protect the privacy of our study participants.

| <b>Name</b> | <b>Sex</b> | <b>Age</b> | <b>Career stage</b> | <b>Occupation</b>                 | <b>Location</b> | <b>Interview mode</b> |
|-------------|------------|------------|---------------------|-----------------------------------|-----------------|-----------------------|
| Catherine   | f          | 24         | amateur             | unemployed                        | Australia       | telephone             |
| David       | m          | 32         | amateur             | accountant, personal trainer      | Australia       | telephone             |
| James       | m          | 56         | amateur             | business manager                  | Australia       | face-to-face          |
| Jarvis      | m          | 23         | amateur             | student, musician                 | Australia       | face-to-face          |
| John        | m          | 28         | amateur             | landscaper                        | USA             | email                 |
| Juliet      | f          | 47         | amateur             | journalist                        | USA             | face-to-face          |
| Keith       | m          | 38         | amateur             | teacher                           | USA             | face-to-face          |
| Lenny       | m          | 22         | amateur             | student                           | Australia       | telephone             |
| Mario       | m          | 20         | amateur             | student                           | Australia       | telephone             |
| Nicole      | f          | 41         | amateur             | research scientist                | Australia       | face-to-face          |
| Paul        | m          | 21         | amateur             | Student                           | Australia       | face-to-face          |
| Andy        | m          | 30         | professional        | personal trainer, gym manager     | USA             | face-to-face          |
| Bill        | m          | 27         | professional        | firefighter, personal trainer     | Australia       | telephone             |
| Chris       | m          | 30         | professional        | personal trainer, fitness model   | USA             | face-to-face          |
| Erica       | f          | 40         | professional        | personal trainer                  | Australia       | telephone             |
| Francis     | m          | 30         | professional        | personal trainer                  | USA             | telephone             |
| Jeremy      | m          | 50         | professional        | personal trainer                  | USA             | face-to-face          |
| Mark        | m          | 48         | professional        | personal trainer                  | USA             | telephone             |
| Melvin      | m          | 25         | professional        | personal trainer                  | USA             | face-to-face          |
| Monica      | f          | 35         | professional        | personal trainer                  | Australia       | email                 |
| Rhonda      | f          | 24         | professional        | personal trainer                  | Australia       | telephone             |
| Tim         | m          | 43         | professional        | nurse, personal trainer           | USA             | face-to-face          |
| Wendy       | f          | 23         | professional        | personal trainer                  | USA             | face-to-face          |
| George      | m          | 43         | celebrity           | gym owner, contest promoter       | Australia       | face-to-face          |
| Simon       | m          | 40         | celebrity           | pro-bodybuilder, personal trainer | USA             | email                 |

#### **4. Findings: Social network sites and bodybuilding careers**

Our findings show that amateurs, professionals and celebrities in the bodybuilding scene use BodySpace. Our analysis was based on the following concepts to define these groups:

- ‘Amateurs’ carry out activities in their spare time, and (unlike their professional counterparts) they are usually motivated by pleasure rather than financial incentives (Stebbins 2007). As listed in table 1, the occupations of the amateurs in this study ranged from students to accountants, and they all worked out and competed in their spare time.
- We defined ‘professionals’ as “someone who is dependent on the income from an activity that other people pursue with little or no remuneration as leisure” (Stebbins 2007, p. 6). Most professionals in this study worked as personal trainers and dietitians, mentoring others for a living. Although these jobs are bodybuilding-related, they do not hold the same prestige as being a professional athlete (who we classified as ‘celebrity’) (Klein 1993).
- We classified those participants as ‘celebrities’, who were widely known in the bodybuilding scene. Simon, for example, has won a so-called ‘IFBB pro-card’, which gives him access to the elusive circle of bodybuilders who compete at a professional level. Another celebrity – George – has retired from competing, but he owns a prestigious bodybuilding-gym. The career trajectories of Simon and George have been very different, yet both of them have achieved something that has made them well known in the scene.

As discussed by Stebbins (1979; 2007), the boundaries between these groups are not always clear-cut: To resolve ambiguities like part-time professionals, we distinguished between professionals and amateurs depending on whether their main income was bodybuilding-related or not. Furthermore, in section 4.3.3 we discuss a sub-group called ‘aspiring celebrities’ to account for individuals where the boundaries between professionals and celebrities were blurred.

The findings show that social network sites facilitate collaboration between and within these three groups in various ways. Our data analysis surfaced three major themes – tool, community, and theater – which we use to structure the collaboration we saw on social network sites:

- A ‘tool’ refers to any instrumental form of collaboration on social network sites, like information exchange, progress monitoring, or comparisons. Tools increase a person’s capabilities and help them to carry out their leisure and work activities to accomplish their goals.
- The term ‘community’ describes social aspects of online participation, such as making friends online and empathizing with other people’s experiences. Our use of the term ‘community’ is influenced by Lave and Wenger’s concept of a ‘community of practice’ (1991). Such a community does not

imply co-presence or strong ties amongst people - all it implies is a group of individuals that is loosely bound by its shared interest, activities and values.

- The term ‘theater’ is inspired by Goffman’s metaphor of social situations as theatrical performance (1959). We share the interest in how people perform like actors on a stage in order to present themselves in a particular way in public social settings, but we have a more narrow focus: We examine how people use social network sites as a stage to promote their achievements to an audience of friends and strangers, and how they gain recognition.

In the following sections we use these themes to illustrate how collaboration differs between amateurs, professionals and celebrities, and how collaboration shifts from social network sites to other avenues as they advance in their careers.

## 4.1 AMATEURS

“I couldn't remember anything. I would talk to you and 2 seconds later I wouldn't remember what I said. I lost my memory, I really lost my memory. It was so frustrating, because I was like, what am I saying? And I would try to talk myself into a memory of what it was. I went to the doctor. He looked at me and said, ‘where is your body? You don't have any bodyfat, eat some carbs!’ I ate some carbs and my memory came back. That was frightening!” (Juliet)

Amateur bodybuilders occupy full time jobs and compete in bodybuilding shows in their leisure. The serious nature of this leisure activity is vividly illustrated by the severe physical and mental challenges involved in training and dieting during the preparation for competitions, often described as the “*hell of preparation*” (James). Bodybuilders build up a strong physique through daily weight training and 5 to 8 precisely measured meals per day. They increase their training load in the 10 to 12 weeks preceding a competition whilst they reduce their food consumption. In other words, they starve in order to get lean while they try to maintain their musculature. Most participants reported that they were so weak that they found it difficult to carry out their jobs, and two of them said that they literally lost their minds.

The following section on tools illustrates how amateur bodybuilders utilize social network sites to address the enormous physical challenges they face during the preparation phase. Our findings illustrate that the preparation has also serious implications for the social relationships of bodybuilders. Section 4.1.2 unpacks the role of social network sites in establishing relationships and exchanging support, and section 4.1.3 discusses how bodybuilders utilize social network sites to present themselves and to exchange recognition for their hard work.

### 4.1.1 *Social network site as a tool to improve performance*

“Well, we are never happy with our bodies. We always want more and more.” (John)

Amateurs use social network sites because they provide various kinds of tools that help them improve their performance in bodybuilding competitions. Winning competitions allows them to progress to the next level, may it be national,

international or professional competitions. Thus they continuously look for better training regimes and food supplements that help them to transform their physique.

Amateur bodybuilders participate in BodySpace to exchange information about training and nutrition. They read articles, reviews and training regimes written by other users, ask questions through comments and personal messages, and integrate this information into their training practices:

“My current training is based on advice from a trainer, stuff I've read online and stuff I've read in magazines.” (Lenny)

Often changes in the physique are not visible to oneself in the daily training. Thus bodybuilders use BodySpace to track their progress during their competition preparation to peak at the day of the competition. BodySpace profiles contain statistics to track body measures and the amount of weight they lift. BodySpace also incorporates a progress photo section, where bodybuilders can upload photos over a period of time to document their progress visually (see figure 1a).

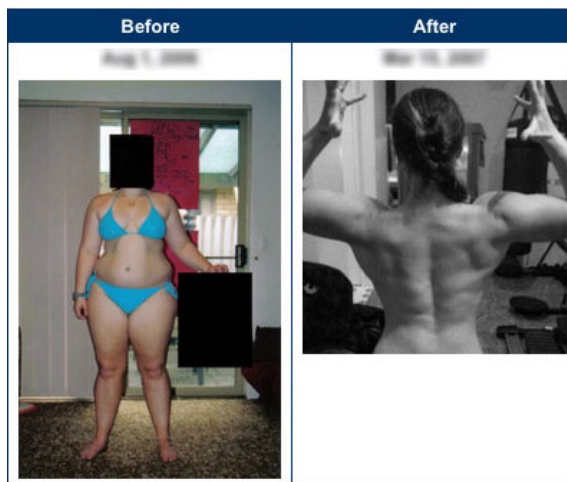


Figure 1a. Progress pictures on BodySpace visually illustrate the changes in the person's physique during the preparation for a competition.



Figure 1b. Amateurs use photos to ask for critical feedback, but BodySpace appears limited in facilitating critical exchange.

Some amateurs had used progress pictures and statistics at home and in the gym prior to using them on BodySpace. Sharing this information online allows them to compare their performance with others to an extent that was not possible before social network sites: ‘Upward comparisons’ with established bodybuilders provide inspiration and help to set goals for the future. ‘Downward comparisons’ with less accomplished people help some to feel better about their own achievements. Catherine, for example, commented that she was motivated by watching a TV show that presents teams of overweight contestants trying to lose weight: “As sad as this sounds, I think watching the biggest loser got me motivated.” Comparisons with bodybuilders on the same level help amateurs to judge their own progress and to calculate their chances in upcoming competitions:

“I look at it to see photographs from previous competitions to see any photos from guys in my category. And then I would say, ‘yeah, I think I’ll be ok’ or ‘it’s going to be hard’.” (James)

Social network sites used as tools help to enhance one’s performance, but the online collaboration also has its limitations. Several participants pointed out the lack of critical feedback on BodySpace, which they need to critically examine their progress. Some participants left comments on other people’s profiles to explicitly ask for critical feedback. One study participant – Paul – edited his progress photos in Photoshop to highlight the areas he wanted to improve and needed feedback on while preparing for his first competition (see figure 1b). He was hoping for critical, reflective feedback, like from a personal trainer or an experienced training partner. However, the comments he received were “*looks fine already, you don't need to make changes*” or “*it looks good*”, and he concluded, “*it didn't really work for me*” (Paul).

#### 4.1.2 Social network site as a community to find friends and exchange support

“I was a lone, lone wolf. It’s a very isolated, individual sport.” (Jeremy)

The second challenge for many amateurs is their isolation from peers. Bodybuilding is a minority sport and most amateurs have very few if any offline interactions with other bodybuilders. They meet their peers at the rare occasions of competitions and at gyms. However, there are only few dedicated bodybuilding gyms, and many bodybuilders train in gyms with few or no other competitors:

“I used to go to the big gyms. There are thousands of people that go to such a gym per day. And out of the people that I saw there, only one or two were people that had similar goals to me with bodybuilding. And it was even harder to find a female, because there is such a stigma about women putting on muscle.” (Wendy, reflecting on her beginnings as an amateur)

Due to their social isolation bodybuilders use social network sites to establish online relationships with others in the community. On BodySpace they can search for new connections or discover other members on the BodySpace homepage. The number of BodySpace friends ranged from 10 to 223 friends amongst the 11 amateurs, but only 2 people had a BodySpace friend who they considered a friend offline. These numbers support our observations that amateurs use BodySpace predominantly to establish new relationships with strangers online.

A major challenge in establishing friendships online is the issue of trust. Bodybuilders judge other BodySpace users based on the personal information on the profile, connections with other users, and the physical achievements displayed in photos. As illustrated in figure 2, BodySpace profiles provide high transparency about friendship requests. People who request friendship on BodySpace are only listed as ‘mutual friends’ if the request is accepted. If the request gets ignored or rejected, then the person sending the request is listed as ‘fan’ on the receiver’s profile, and as ‘stalking’ the other person on his or her own profile. This prevents spam requests and facilitates connections amongst those who are serious about bodybuilding.

| Friends Stats        |            |
|----------------------|------------|
| Fan Club (?) :       | <u>3</u>   |
| Mutual Friends (?) : | <u>207</u> |
| Stalking (?) :       | <u>9</u>   |

Figure 2. BodySpace profiles list all ‘mutual friends’ and unreciprocated friendship requests to increase transparency and to discourage spam requests. The ‘fan club’ contains other BodySpace users whose friendship requests have not been reciprocated by this user. Conversely, this user has added nine people as friends who have not reciprocated the request (listed under ‘stalking’).

At first sight, the community theme appears to be less integrated with people’s everyday lives than the tool theme. Since most BodySpace relationships were purely online, some participants viewed BodySpace as a place where they can informally chat with like-minded people about shared interests, but with relatively little influence on their everyday lives. Nicole, for example, is a busy researcher and mother of two kids. She logged on to BodySpace twice a week to exchange messages with other BodySpace users, and she compared this activity with watching TV, which helps her relax in her very limited spare time:

“We don't watch much TV. We don't have much downtime, because exercise for us is a priority. So for us to chat on the Internet, to use the wireless to sit on the couch and chat late at night, it's downtime.” (Nicole)

Upon closer examination, however, we found that the interactions with BodySpace friends provide important support for people’s offline activities, in particular during the preparation for competitions. In addition to informational support discussed in the previous section, comments on BodySpace can provide emotional support to endure intense training and dieting. Other bodybuilders on BodySpace can relate to the challenges involved in the preparation phase and provide a sense of empathy:

“There are not a lot of people in regular society that can relate to what is going in the preparation for a competition. The diet is really socially awkward. You have to have your meals, usually 5 times a day, to make sure you are eating every 2 to 3 hours. You have to measure everything prior, and you have to take your food with you. If you want to do a show, then there is no room for missing a meal or eating too much of one thing. And you have people all the time 'come on, you are in great shape, you can have one slice of pizza'. And it's really easy to hear that and say 'you are right'. But if you want to do a show, you got to stay strict. BodySpace is a space to talk to people who do the same thing and they can say 'I had the same thing happen'. You can help each other, that's what it is about, more than anything.” (Keith)

Empathy and support on social network sites reaffirm the values within the community. We use the term ‘values’ in a broad sense to refer to what is important for individuals or a community as a whole. Pictures and slogans posted in bodybuilding gyms bring some of the values inherent in bodybuilding to the foreground and reinforce them (see figure 3). Similarly, profiles and comments on BodySpace reflect the values of the community through slogans like “*Nothing is*

*impossible!*” (Monica) or *“If it was easy everyone would do it.”* (Rhonda). Exchanging these messages on BodySpace reaffirm the activities of bodybuilders:

“It makes you feel like you are not alone; it makes you feel normal because other people do it as well. Maybe, they give you a sense of legitimacy to what you are doing.” (Jarvis)



Figure 3. The walls of bodybuilding gyms present slogans and accomplishments of role models, which reaffirm the values within the bodybuilding community.

BodySpace used as a community provides opportunities for bodybuilders to enhance their support networks, but the online collaboration also has its limitations. Online friends provide critical support, but they cannot replace the ongoing instrumental and emotional support of training partners or coaches in the gym. Beyond that, the values conveyed on BodySpace seem to reaffirm the marginal status of bodybuilders in the public eye. Our findings show that amateur bodybuilders often have to justify their regimented lifestyles during the contest preparation, and some of them even have to argue against stereotypes like steroid use or narcissism. The participants in this study felt that people who do not compete cannot relate to the challenges involved in training and diet, the motivation to shape the body in such a way, and the achievements in competitions:

“I don’t talk about my bodybuilding at work because I think people think it’s strange. So they know I do it, but I try not to [bring it up], it’s sort of not professional in that sense. (...). So it’s not the norm, it’s not the normality. People can’t understand it. So, it’s not like you are going for a fun run, where people say ‘that’s great!’ Bodybuilding competitions, they don’t understand it. So in a way it’s a bit socially isolating. The other thing is, when you go out for dinner, you have to scan the menu for stuff you can eat. It’s also socially isolating. Also, I don’t really drink, just because it’s anti-calories. So I might have one drink, but I don’t normally drink something. So in a way, it’s very socially isolating.” (Nicole)

#### 4.1.3 *Social network site as a theater to promote achievements*

“A lot of these guys have nothing else in their lives. They don’t have a good job. So it gives them kudos, it gives them self-affirmation, or affirmation from other people.” (James)

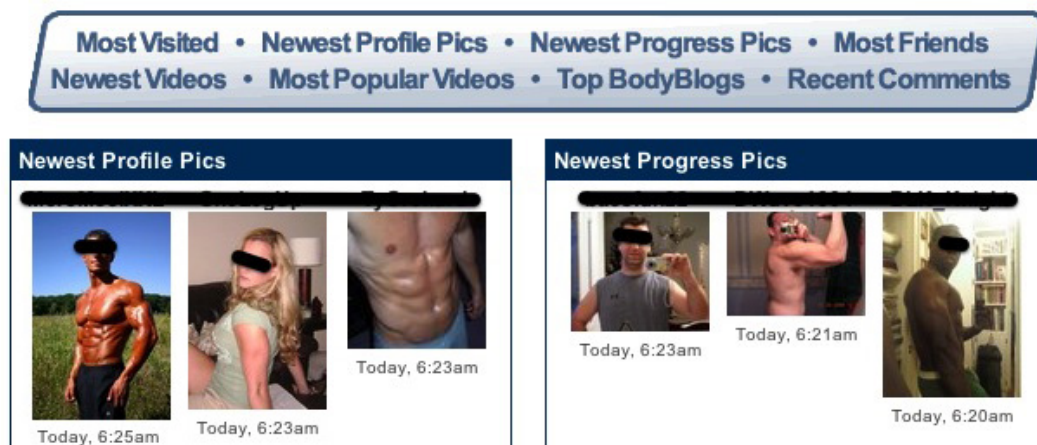


Amateur bodybuilders make enormous sacrifices during the ‘hell of preparation’ without receiving any financial benefits from their participation in bodybuilding shows. They invest large amounts of money and time for their training and nutrition, and they endure severe physical and mental challenges in order to compete. Beyond that they sacrifice social relationships and risk social stigma. The sacrifices of many years pay off when bodybuilders get to present their body on stage in competitions:

“I reckon that was one of the best days in my life, just being up there. You work so hard. You train for years, but those last few months of dieting, when you are up there it's like the best feeling of achievement; you feel like a million dollars; it's great!” (Paul)

Many bodybuilders use social network sites like a stage in a theater, where they present their achievements to a wide audience. They use BodySpace to share photos, videos and descriptions of their achievements in bodybuilding competitions in order to be seen competent by observers. The photos vary from pictures taken with a camera phone in front of the mirror to professional photos taken during competitions or photo shoots. As illustrated in figure 4, new photos and other profile updates get listed on the BodySpace homepage and on their friends’ newsfeed. This feature encourages users to keep their profile up-to-date with their offline activities, and beyond that, it evokes attention and feedback:

“Another thing I’ve got to say about BodySpace which I think is the most important thing to most of us - it gives us a place to post our picture for the whole world to see. Bodybuilders need to be noticed, it feeds our muscle ego, it motivates us. There are thousands of guys who show photos of themselves in their bathroom in their underwear flexing. They aren’t thinking about anything but to show off what they look like and to see for themselves what they look like. This all might be strange to the non-bodybuilding world but not to us – it’s normal.” (John)



*Figure 4.* The BodySpace homepage lists the most recent profile updates, including the newest profile photos and progress pictures shown in the screenshot above, as well as new videos, statistics and comments. This feature rewards participants who keep their profiles up-to-date with attention by other BodySpace users. Furthermore, the list contains the six most visited profiles of each day to showcase the most popular BodySpace users.



Attention and feedback on BodySpace has different functions. Our online data included expressions of empathy, e.g., *“We all know how much dedication, determination, discipline go into creating the ultimate body! You’re well on your way to perfection.”*, praise, e.g.: *“Hey great upper body, great bulk on the arms and chest definition!!!”*, and reinforcement of behavior like: *“Great Traps! You are looking great, keep at it, it's working!”* Such feedback is important, because it comes from people who engage in the same activities and can recognize the value of achievements in this domain.

The interplay of self-promotion and feedback on BodySpace provides valuable recognition, but it also surfaces problems in online collaboration. One problem is that people predominantly present positive aspects and leave out accounts of struggling or suffering. Only few participants reported that they use BodySpace to write about the difficulties during the preparation for competitions.

A second problem on BodySpace is that many comments allude to the sexual attractiveness of people rather than their bodybuilding achievements. Like many other women in this study, Nicole reported that she received ambiguous comments from other BodySpace users. Although Nicole tried to keep her bodybuilding life separate from her work, she even received a phone call from another BodySpace user who found her work telephone number online:

“From being a female on BodySpace, I really like using it to talk to people that are actually training for competitions, and that's why I joined it. But there are obviously guys there who just want to pick you up, or make suggestive comments. And what happens usually is that I wouldn't reply to them. But a guy actually rang me at work about 2 weeks ago from Italy. (...) He called me up at my office phone here, because he saw me through BodySpace and wanted to chat. To me, that's not acceptable.” (Nicole)

Also three male participants reported that they received messages on BodySpace that contained both male and female propositions. They explained that bodybuilding attracts so-called ‘muscle groupies’, who are usually not competitors, but visit bodybuilding shows and BodySpace because of their inclination for muscular bodies:

“Think about us on stage - a bunch of near naked men in front of total strangers; think about the fact there must be some people out in the crowd who are looking at you not only as a bodybuilder but as a sexual being.” (John)

## 4.2 PERSONAL TRAINERS AND OTHER PROFESSIONALS

“I wouldn't be a trainer if I hadn't started being a bodybuilder when I was 12 years old. I can't think of doing anything else, except not working at all.” (Jeremy)

Some bodybuilders turn their passion for the sport into a profession. They still compete in their leisure time, but they use their knowledge and their physique to work as personal trainers, dietitians, gym managers or photo models. Their lives evolve around fitness training and bodybuilding, as indicated by Francis (30), a bodybuilder, personal trainer and bodybuilding judge:

“It's my life. From the minute I get up in the morning to the minute I go to bed, everything evolves around the sport. The work that I do is bodybuilding related, my training, my diet.”

Professionals enjoy the full immersion in the bodybuilding world, but they also rely on it to make a living. The financial pressure changes their passion, and their main concern often shifts from their performance in competitions to their professional career. Thus, professional bodybuilders also use social network sites differently from amateur bodybuilders.

#### *4.2.1 Limited tool use on social network sites*

“If I do have some questions, I ask people I know personally, because I know what they know and what they have done.” (Melvin, 25)

Professional bodybuilders rarely use social network sites as a tool to improve their performance in competitions, because they draw from their own experience or the expertise of their colleagues. Due to their full immersion in the bodybuilding world, professionals usually have larger networks of fellow bodybuilders and personal trainers in their offline lives than amateurs. One of our participants – Francis – grew up as son of a gym owner and nephew of a national bodybuilding champion. When he moved to California, he extended his bodybuilding networks and became the training partner of a former elite bodybuilder. Francis's training partner provided him with advice and critical feedback to help him monitor his progress:

“He tells you straight in the face how you are looking. Some of the people in the sport with less experience think you look amazing, whereas Shawn tells you, for example, you need more size on one of these muscle groups.” (Francis)

Some professional bodybuilders tried to use BodySpace as a tool, but encountered two problems. The quality of advice that they receive on BodySpace does not match the quality they get from their colleagues offline. Furthermore, sharing their expertise for free on BodySpace constitutes a dilemma. As professionals they usually charge their clients for their knowledge and support. Thus they hesitate to provide too much support for free online, which delimits collaboration between amateurs and professionals:

“The people that have asked me questions – I don't give a whole lot of advice for free, because it is my profession.” (Wendy)

#### *4.2.2 Social network site as a community to network with other professionals and to keep in touch with clients*

“You never know who you know. There are some people that I add just in case. To have a contact, that's what those things are for.” (Melvin)

Professional bodybuilders are usually well connected with other bodybuilders due their full time immersion in the sport. Thus social network sites fulfill a different role in connecting with the community. Professionals are less interested in looking for friendships online; they rather use social network sites to manage relationships with other professionals or their clients.

First, professional bodybuilders participate on social network sites to keep in touch with other professionals. On BodySpace they exchange comments to stay in touch and to coordinate informal meetings at bodybuilding events.

“BodySpace is all about people into fitness - just to stay in touch with each other, to meet at the Arnold Schwarzenegger Expo or the Olympia Expo, it's all through BodySpace.” (Francis)

Second, professionals use social network sites to extend their professional networks to open up new business opportunities. Many bodybuilders try to use their networks to get in contact with photographers or editors of magazines, who may hire them for photo shoots. Others share or pass on personal training clients:

“Kaito, from Japan, is back here now, and he has asked me if I could give him some clients. So if I have anybody else that I would take on, I would give them to him to train and probably take a percentage of it.” (Tim)

Finally, some personal trainers also appropriate BodySpace to keep in touch with their clients. Wendy, a personal trainer in California, has received valuable support from other BodySpace users when she started her bodybuilding career. She now encourages her personal training clients to use BodySpace to get immersed in the bodybuilding community and to develop the same passion that she has. Being connected to her clients on BodySpace, Wendy also gets a sense of their wellbeing and provides them with support in between training sessions:

“Right now I'm using it more to check on my clients that use it. I have a look at their blogs and see how they are feeling. I have most of my competitors do a journal and that includes their diets, their training, and also how they feel, because I want to know how they feel when they are training, if they have energy, if they have the motivation for their workout.” (Wendy)

The collaboration of personal trainers and clients on BodySpace provides opportunities for ongoing support as well as risks. Clients may find training and diet information on BodySpace that contradicts their trainer's advice. Applying contradicting information can diminish the client's progress or even damage their health. Thus personal trainers need to explain how online advice relates to the training of a client. Otherwise, the participation on social network sites may impede the collaboration between personal trainer and client in the gym:

“Sometimes I can get undermined and my clients say 'I read this on this magazine, and this is contradictory to what you said'. And then I have to explain why I'm doing it the way I'm doing it. (...) It can happen on BodySpace. I've had clients that have gotten advice from their friends. I've had a client and his friend told him not to do cardio any more, because 'bodybuilders don't do any cardio'.” (Wendy)

#### *4.2.3 Social network site as a theater to promote the personal business*

“A good friend of mine was actually shocked. He beat me [in a show] and I got the supplement company contract. It's weird, but I do so much more. I don't sit around and wait and go ‘Hey, I look great! Shouldn't people be contacting me? I just won a show, shouldn't they call me?’ No, you call them. You send them photos. You have to get as proactive as you can.” (Chris)

Professional bodybuilders use various means, including BodySpace, to proactively promote their achievements and to open up new business

opportunities. Like amateur bodybuilders they present their achievements in bodybuilding shows on BodySpace and they derive important motivation through the comments they receive, which help them to endure the challenges in the preparation for competitions:

“You got to be able to train in the gym; you've got to be able to stick to a very specific diet. It's a 24 hours sport. So you do have to be highly motivated to do the sport. Most of the motivation is intrinsic. But BodySpace and others give you that extra motivation.” (Francis)

Moreover, professional bodybuilders use BodySpace to promote their achievements to attract customers for their business. Many professional bodybuilders use BodySpace to find customers for their personal training business. Displaying photos on BodySpace that present the results of years of training attracts numerous requests for support from other BodySpace users. As we discussed earlier, professionals rarely provide free advice on BodySpace, because they need to make a living from it. However, some use free advice to attract potential clients for their personal training business:

“People come to me and say ‘you have great abs’ or ‘great arms’, or ‘how do I get into the business of modeling?’ And what I do is that I direct them to my personal website. Or I set up some financial plan for me to either guide them, or do the nutrition for them - something. And I'll be able to charge them for that, or establish some sort of relationship. I'll give somebody a tip there, a teaser, just a little bit of information, just enough to say to come and ask ‘can I have a little more?’ And then you got to say ‘my time is valuable; I can't just do it for free. Let's talk serious, let's talk business!’” (Chris)

Additionally, professional bodybuilders seek to promote themselves through BodySpace to food supplement companies and magazines for sponsorships and photo shoots. Since such income opportunities are rare, bodybuilders are aware of the importance of personal contacts: *“They say, it's who you know. You have to have the right connections”* (Andy). These contacts are not established merely by winning a competition but through active self-promotion and networking, as discussed by Chris, a personal trainer and photo model:

“I get a lot of modeling from BodySpace. I'm in Iron Man magazine this month from BodySpace. I got endorsed by a supplement company, which has phenomenal supplements, from BodySpace. So I've got quite a few photo shoots, magazine stuff, supplement stuff, just from the beginning stage of the BodySpace. But it's all about the networking and the relationships. (...) You have to be on there. You have to be networking, sending little tips in messages that people – otherwise you are not gonna get any feedback at all.”

Self-promotion on BodySpace appears to create opportunities for photo shoots and sponsorships for people like Chris and others on BodySpace, which sparks imitation by other professional bodybuilders. Chris presented his Iron Man magazine article on his BodySpace profile, and the article was also featured through the official BodySpace blog. Other BodySpace users see what is possible through the social network site and follow his example:

“On BodySpace and MySpace I put photos out there as much as there can be. And that's why I add people and log on every day so that people see that I'm active.” (Melvin)

BodySpace appears as a place to get discovered by sponsors and magazines, yet the impression may be misleading. BodySpace itself recruits users for photo shoots to advertise BodySpace in bodybuilding magazines, but we found no evidence of direct involvement of individuals from magazines or supplement companies on BodySpace. Beyond that, even the recruitment by BodySpace may be unrelated to participation on BodySpace itself. During further discussion with Chris we discovered that his recruitment by BodySpace was triggered by his longstanding relationship with the leading photographer of BodySpace:

“Originally, he found me as a model. He shot me for a photo shoot. Over a year or two he shot me a few times. And we just kind of started a relationship there. Just from modeling and photography. And over the past couple of years it grew into some friendship as well.”

### 4.3 MR. OLYMPIA AND OTHER CELEBRITIES

“Meeting Arnold was one of the greatest highlights of my whole career.” (George)

Few bodybuilders reach celebrity status, where they compete professionally and are widely known for their achievements. Almost 30 years after his last success in the Mr. Olympia competition – the most important title in bodybuilding – Arnold Schwarzenegger is still the biggest celebrity in the bodybuilding world and a role model for many bodybuilders. Due to his successive careers as an actor and politician he is the only bodybuilder that is widely known to the public. Some of the contemporary celebrities in the bodybuilding scene like Jay Cutler, Dexter Jackson or Ronnie Coleman have won more Mr. Olympia titles than Schwarzenegger, yet their fame is restricted to the bodybuilding world only (Hotten 2004). Bodybuilding rarely appears on TV or in other mass media channels and as a result its celebrities earn very little compared to celebrities in mainstream sports like football, basketball, or tennis. Very few bodybuilders can make a living purely from prize money in competitions, sponsorships or photo shoots. Many use their reputation to supplement their income through bodybuilding-related jobs like personal training.

Our online observations show that despite their financial challenges celebrities are very rarely active participants on BodySpace. Though BodySpace is the biggest social network site for bodybuilders, we found that only seven of the 46 female competitors and only two of the 23 male competitors at the 2009 Mr. Olympia competition had a profile on BodySpace<sup>3</sup>. The interview participants also shared this observation, stating celebrities are “*not on BodySpace. You find some good amateurs, but there are no pro-bodybuilders on it.*” (Paul, 21)

#### 4.3.1 No tool use on social network sites

“My whole life is basically eating, sleeping and training.” (Jay Cutler, Mr. Olympia 2009, during an interview on stage at a bodybuilding show)

Our findings show that celebrities do not use BodySpace as a tool. None of the celebrities we interviewed and none of the aforementioned nine celebrity profiles used any tool feature like the progress pictures or statistics. Clearly, celebrity bodybuilders would have the greatest need for tools to improve their performance. Contemporary elite athletes have made enormous improvements since the days of Schwarzenegger. These improvements have become possible due to two recent developments: Firstly, contemporary celebrities have a professional team of training partners, professional coaches, managers, and nutritionists that help them accomplish their goals. Having access to expert knowledge on training and nutrition, and being monitored on their progress by their coaches, they do not require social network sites as tools:

“In each sport you have a team. Jay Cutler said it best in his interview, you know, he has got his wife, his manager, his trainer, you know the people who help him out, who are very close to him. And it's hard to do it on your own because it's the hardest sport in the world.” (George)

Secondly, bodybuilders have access to the latest developments in food supplements and performance-enhancing drugs. Most of the participants in our study compete in so-called ‘natural’ competitions, which prohibit drug use. Yet the majority shared the view that competing on the level of celebrities would be impossible without performance-enhancing drugs:

“Everyone knew, as unwritten knowledge, everyone who wanted to compete at the highest level, you either took the steroids or you couldn't compete, you weren't going to win. And everyone still understands that.” (James)

As in other sports, some athletes revert to performance enhancing drugs like anabolic steroids or human growth hormones to gain further strength. However, bodybuilding is possibly the only sport where the leading organizations do not test for performance-enhancing drugs and thus implicitly accept their use for competitions. Bodybuilders do not use BodySpace to share knowledge on that subject, because steroids are illegal in most countries. Sharing information about steroids on a social network site with a personal profile inherits the risk of legal ramifications.

#### *4.3.2 Rare community involvement on BodySpace*

“All the pros trained at 10 am in the morning. And afterwards all the pros go to the Firehouse to eat. (...) I would be here every day at 10 to train. (...) And Mike would be here, Shawn Ray would be here; just all the top pros would be here all the time. (...) In the afternoon, either 4 or 6 at night they would be back training again. Sometimes I wouldn't be here in the afternoon, but Mike and I became really good friends. And I ended up becoming the godfather for his son. He was one of my best friends, a very, very nice guy.” (Tim)

Most celebrities train at Gold's Gym in Venice, CA, the self-proclaimed “Mecca of Bodybuilding”. Being immersed in a social world that is made up predominantly of bodybuilders, celebrities do not use BodySpace as a community to establish connections with other bodybuilders. Only five of the nine celebrity profiles on BodySpace had mutual friends on BodySpace, and only three of them

had left any comment on someone else's BodySpace profile. The remaining six celebrity profiles did not list any recent profile updates, five of them had not even logged into BodySpace in the last 12 months. Our observations in California suggest that their offline friends can relate to the challenges they go through and provide the support they need while preparing for competitions.

However, celebrities are role models within the community and thus expected to engage with amateur competitors and other fans outside bodybuilding competitions. Social network sites like BodySpace provide an outlet for such interactions, but most celebrities rather use their own personal websites. Unlike BodySpace, personal websites are under the control of the celebrity and their sponsors. On there they post news and engage in discussions with their fans:

"I think BodySpace is more for beginners - you don't really see professionals on there. (...) Usually the pros have their own websites. And on their own websites they have blogs, and you can subscribe to their blogs and ask them questions." (Keith)

Jay Cutler like many other celebrities has a personal homepage, but he also has MySpace and Facebook fan pages with more than 10,000 fans on each social network site. The wall on Facebook fan pages supports communication between a celebrity and a large numbers on fans as well as communication amongst fans. Jay Cutler uses it to post news about his training and competitions.

"Mostly the Facebook ones are for the really high up bodybuilders, they are just like fan sites. So you can become a fan. It's not really personal, it's like I'm a fan of Jay Cutler." (Paul)

In addition to fan pages, celebrities like Jay Cutler also have a personal profile on Facebook, which is private for their interactions with friends only. If Facebook would not support privacy, celebrities would be overwhelmed with personal requests as suggested by Juliet: *"Because they are people too. Besides having a huge fan base, they are professional bodybuilders that have a network of business associates and friends. They don't want 10.000 fans to see their wall."*

Facebook and MySpace are clearly different from BodySpace in terms of their user base, functionalities, and the activities they facilitate. However, these observations on Facebook and MySpace highlight some limitations of BodySpace, such as privacy controls, and the one-to-many communication channels offered by Facebook fan pages. These limitations may contribute to the lack of community involvement by celebrities on BodySpace.

#### 4.3.3 Social network site as a theatre to promote achievements and products

"They do it more for marketing themselves. (...) I'm sure they are hearing from everyone around them that they are beautiful, that they are gorgeous, that they are doing a great job. They don't need BodySpace to tell them that." (Wendy)

All celebrity profiles we analyzed had received comments. The comments generally comprised expressions of admiration like *"Always inspiring to see you, in print, online, but my highlight was actually seeing you at the 'O' last year. Big fan!!!"* and appraisals of their achievements like *"You look amazing!"* However,

only three of the nine celebrities left comments on their fans' BodySpace profiles to thank them for their appreciation.

Despite the low levels of participation of top celebrities on BodySpace, we found various profiles of aspiring celebrities. These are bodybuilders who have qualified for competitions on a professional level, won some prize money, and get support through sponsorships. However, they still rely on other jobs to make a living and to carry the costs of bodybuilding:

"Even if you are a pro, you still have to be spend money, promote yourself, get to know the right people. You don't get paid unless you start winning, and become one of the top 3 people at the shows, at the big shows. At the Olympia, which is the top tournament, they place the top 10. And the 10th guy might get 5000 dollars and that's nothing." (Chris)

Aspiring celebrities use BodySpace as a theater to promote their achievements and their businesses. They use their photos and their accreditation as a professional competitor to establish reputation on BodySpace, and like other bodybuilders, they seek for personal training clients and photo shoots:

"There are some professional figure competitors and bodybuilders that use BodySpace. (...) And they have a lot of their modeling photos. A lot of them are personal trainers and people would go to them for personal advice and they can charge them. I think that's why they mostly use it." (Wendy)

Beyond that, some aspiring celebrities participate on BodySpace to establish a fan base and to promote products like food supplements or fan merchandise. Through our online observations we found that some aspiring celebrities display products in their status message or their profile photo. Others utilize their large numbers of fans and friends on BodySpace and post comments on their profiles:

"CHECK OUT MY NEWLY RELEASED DVD! Some fun highlights include: Halloween Guest Posing with my kids! Ripping cans apart! 500lbsplus Bench press at contest weight! American Gladiator Tryout Footage! and cooking- We Rated it R Ridiculously Funny! as it not your typical Hardcore Bodybuilding DVD Thanks for the Support! Take Care- A." (Comment on BodySpace)

## **5. Discussion**

The question we seek to answer is how individuals at different stages of their career – amateurs, professionals and celebrities – appropriate social network sites to collaborate with others in their domain.

Our findings show that the collaboration on social network sites varies depending on the career stage. First, amateurs use passion-centric social network sites as a tool to improve their performance in competitions, as a community to form new relationships and to exchange support, and as a theater to display their achievements. Second, professionals rarely use social network sites as a tool. They rather use them as a community to extend their ties to other professionals and as a theater to promote their business to potential clients. Finally, celebrities have very limited presence on BodySpace because they have professional support



networks offline. Aspiring celebrities however - professional competitors who seek to establish reputation - use social network sites as a theater to promote their achievements to build up a fan base.

## 5.1 THEORETICAL IMPLICATIONS

The main contribution of this study is that it extends previous work on the collaboration of amateurs on passion-centric social network sites (Miller and Edwards 2007; Ploderer et al. 2008) by including also professionals and celebrities in the domain. The findings are novel, because they highlight the differences in the online collaboration between and within amateurs, professionals and celebrities, indicating a trend from online to offline collaboration as people progress in their careers.

One explanation for this shift from online to offline collaboration may be that amateurs tend to be more socially isolated than professionals or celebrities. Amateurs sacrifice their leisure time and generally feel marginalized by the public, which cannot relate to their serious approach to leisure. Amateur bodybuilders in particular risk further marginalization due to stereotypes like steroid use and the stigma carried by muscular bodies (Monaghan 2001; Probert 2007). Bodybuilding may highlight the problem of social isolation, but Stebbins (1979) argues that amateurs feel marginalized across domains, even in more popular activities such as theater plays or baseball. Thus amateurs rely the most on collaboration through social network sites to support each other to achieve their goals and to alleviate their sense of isolation.

Professionals and celebrities on the other hand feel less isolated, because they work full-time in the domain and generally have larger and more tightly knit offline networks of friends, colleagues and clients. These networks can relate to the challenges of their passion and provide support. Thus they take over the role of social network sites as a tool, and in the case of aspiring celebrities, the community role. Yet these groups use social network sites as theaters, because they offer access to a larger group of people that provides recognition for their achievements.

Though differences in social isolation were important, they only partially explain the shift from online to offline interactions. Some amateurs (like Keith) work out in bodybuilding gyms coached by professional bodybuilders, yet they collaborate with others on social network sites using them as a tool, community and theater. Conversely, some professionals work in isolation from other bodybuilders (like Andy), yet they do not use social network sites as tools.

The concept of 'communities of practice' by Lave and Wenger (1991) provides a different explanation for this shift from online to offline collaboration, because it highlights that the needs for personal development –the development of skills and knowledge, but also the development of an identity - vary between individuals at different stages of their career. Participation in passion-centric

social network sites supports personal development: The tool theme unpacked how people further their skills and knowledge online, and the community and theatre themes illustrated how people establish relationships online and exchange recognition, which furthers their identity. Like on other social network sites, people carefully tailor their online identity through their profile descriptions and their interactions with others users to “write themselves into being” (Boyd 2008, p. 129). As described in section 4.1.3, amateur bodybuilders (but also professionals and celebrities) use the control they have over their online identity to highlight socially desirable aspects about themselves. Although they do not create a ‘second self’ (Turkle 1995) that bears no resemblance to their offline identity, they leave out personal information that would cast negative light on them, resulting in an “idealized projection of the real-life ‘actual self’” (Krasnova et al. 2009, p. 42). The findings show that the (idealized) online identity is usually closely related to their offline ‘bodybuilder’ identity, but it rarely contains information about them outside bodybuilding. Thus, the alignment of online and offline identity varies between amateurs, who may have many other identities outside bodybuilding, and professionals and celebrities, for whom the bodybuilder identity is more central offline as well.

The findings show that people holding a peripheral status in the community of practice – amateurs – gain most from their online participation. Amateur bodybuilders become legitimate participants in their domain when they first compete, which proves their dedication and qualifies them as a bodybuilder. To develop their skills and knowledge further, they use passion-centric social network sites as tools to learn, often seeking the advice from more experienced bodybuilders online. Lave and Wenger (1991, p. 115) state that “the development of identity is central to the careers of newcomers in communities of practice”. Our findings describe how amateurs use passion-centric social network sites as a community to establish relationships with other bodybuilders, and as a theatre to develop their bodybuilding identity online. Amateurs may benefit more from online participation than the other groups, because they have fewer opportunities than professionals or celebrities to develop their skills and bodybuilder identity offline.

The use of passion-centric social network sites changes as people shift towards a more central position within the domain and occupy professional roles. The data shows that professionals and aspiring celebrities use social network sites less as tools to develop skills; rather they use them as a theater to develop their identity further in order to gravitate towards a more central position. Due to their full immersion in the bodybuilding world, online participation is less central to their bodybuilding identity. Accordingly, the findings show that people occupying positions in close proximity to the centers of their domain – celebrities – do not participate in passion-centric social network sites but rather use other avenues to interact with fans.

The discussion of identity indicated that passion-centric social network sites play an important role as a place, which appears to be independent from places offline. Particularly amateurs benefit from passion-centric social network sites as a place to establish relationships, socialize with peers and develop their bodybuilder identity, in a different manner than in places like their gym. As a theoretical frame for place and social interactions online, studies of virtual worlds (Ducheneaut et al. 2007; Steinkuehler and Williams 2006) and social network sites (Humphreys 2007) have used Oldenburg's notion of a 'third place' (1989), where people can gather to socialize informally beyond the workplace and home. Our findings show that passion-centric social network sites fulfill some of Oldenburg's criteria for a third place - they provide a neutral ground with little obligation, they are easy to access, and they have a group of regulars. However, the findings also highlight issues where passion-centric social network sites do not fit with Oldenburg's criteria for a third place: Oldenburg (1989) noted that an individual's rank and status in the home, workplace, or society are of no importance in third places. Our findings show that passion-centric social network sites indeed allow amateurs to get in touch with more experienced bodybuilders more easily than in the gym, still, the differences between amateurs, professionals and celebrities in their participation in passion-centric social network sites, and the reluctance of some professionals to provide free advice online, shows that rank and status matter on passion-centric social network sites. Furthermore, while conversation is important on passion-centric social network sites, the conversations on passion-centric social network sites are not always playful, like in Oldenburg's concept of third place (1989), but often rather utilitarian: The tool theme highlighted that amateurs participate in passion-centric social network sites to improve their training and dieting regimes, and the community and theatre themes in the context of professionals and celebrities showed that many of the interactions online were motivated by commercial interests, like to sell their services and products, or to keep in touch with clients in between offline meetings. These examples illustrate that passion-centric social network sites are a place where the boundaries between informal conversations and work blur, as suggested by the serious leisure perspective (Stebbins 2007). Moreover, these examples challenge the view that passion-centric social network sites constitute a separate place, because they show that the online activities of all three groups are tightly integrated with their practices offline, similar to friend-based social network sites (Boyd and Ellison, 2007) or professional social network sites (DiMicco et al. 2008).

In addition to the differences between amateurs, professionals and celebrities on passion-centric social network sites, each of these groups also contributes to existing work independently. The findings on amateurs in this paper extend previous work on collaborative technologies for amateurs like crafts people, musicians, photographers, athletes and amateur programmers, by highlighting the

limitations of online collaboration: Previous work has emphasized the benefits of discussion forums or social network sites, such as information exchange (Torrey et al. 2009), learning (Cook et al. 2009), sharing results (Miller and Edwards 2007), and the coordination of rules (Grinter 2005) and group activities (Lampe and Ellison 2010). Bogdan and Mayer (2009) argue that these benefits help to sustain the work done by amateurs. The findings of this study confirm these benefits, but they also highlight limitations of online collaboration that impede these benefits. From a tool perspective, social network sites are used to exchange feedback on each other's progress, but the feedback is generally positive, even when critical feedback is explicitly sought to learn and improve. This limitation may stem from the weak tie relationships amongst users of passion-centric social network sites, where people tend to feel more distant and less mutually responsible for one another than people with strong ties (Donath 2007; Granovetter 1973). From a community perspective, social network sites are useful to connect with other amateurs, yet they are limited in providing connections to professionals or even celebrities who hold the most valuable knowledge. Finally, from a theater perspective, social network sites help to share achievements and to gain recognition, which comes at the cost of ignoring the accounts of those who struggle and fail to succeed. The focus on success stories may be part of the competitive nature of this group, but it can also be viewed as a reflection of the culture of this specific social network site. BodySpace is set up to support the achievement of goals, in contrast to social network sites that are designed to facilitate support amongst people in difficult situations (Ashkanasy et al. 2009).

The findings on the professionals' use of passion-centric social network sites support and extend previous work on social network sites in organizational contexts. Similar to studies of IBM's social network site Beehive (Chen et al. 2009; DiMicco et al. 2008), our data shows that professionals use passion-centric social network sites to keep in touch with colleagues and to advance in their careers by networking and building up a reputation. In contrast to previous work, our data shows up limitations of social network sites for career advancement. The professionals and aspiring celebrities in this study were seeking commercial opportunities through the passion-centric social network site. However, unlike in large organizations where top management is also present online (DiMicco et al. 2008), those who occupy positions to offer jobs or sponsorships in the bodybuilding world - managers of supplement companies and editors of magazines - are usually not bodybuilders themselves and thus do not use passion-centric social network sites.

Finally, this paper contributes to our understanding of celebrities on social network sites. The widespread absence of celebrities in this study appears to contradict evidence from other social network sites like MySpace and Facebook, which are home to many celebrities in the music scene (Beer 2008; Suhr 2009). Facebook and MySpace have much larger numbers of active users, including also

those that are not active participants in the domain and may not have profiles on passion-centric social network sites. Beyond that, Facebook and MySpace provide celebrities with profiles that serve as fan pages, allowing celebrities and a large number of fans to communicate. The wall on Facebook, for example, is designed for celebrities to broadcast news to a large number of fans, similar to traditional mass media (Emmett 2008). Fans can comment on these news, which facilitates communication amongst them (Beer 2008), like on fan online communities (Baym 2007). BodySpace lacks such special profiles for fan pages, and regular BodySpace profiles are better suited for communication between two individuals using comments or private messaging. The data showed that some celebrities made the effort to visit large numbers of profiles where they left comments to inform their fans about new products. However, the time involved in this process may explain why most celebrities participate very rarely in passion-centric social network sites.

## 5.2 PRACTICAL IMPLICATIONS

The finding that the use of social network sites varies considerably at different career stages provides an important contribution to practice, because social network sites need to be tailored to attract and support a variety of people at different stages of their career in order to flourish. Although we have studied only one setting, we believe that the insights gained in this study have practical implications for social network sites designed for similar settings, like for other sports, arts or entertainment. The following discussion highlights design considerations, which we believe will facilitate online collaboration between and within groups of amateurs and professionals.

### 5.2.1 *Focus on the promotion of achievements and updates rather than on tools*

Tools like progress photos or training diaries help amateurs to learn and to improve their performance, but at least equally as important, and contrary to prior research (Ploderer et al. 2008; Torrey et al. 2009), they are means to communicate updates and achievements to other users of the social network site. Our findings show that amateurs use tool features as intended for their trainings, but equally to present their achievements to others online. The professionals rarely used the social network site as a tool, and the aspiring celebrities and celebrities predominantly appropriated the tool features for commercial purposes: Instead of using the tools to support their training regimes, they used these features to promote their work and to seek clients for their business activities.

Based on our findings, passion-centric social network sites that focus on tools *and* on signaling user updates and achievements to a large audience are likely to attract more user participation than those that focus on functional tools only. BodySpace, for example, uses its start page to promote recent updates of photos

and statistics together with the most popular profiles, which provides attention and persuades people to update their profiles more frequently. Moreover, BodySpace features popular user profiles in bodybuilding magazines to advertise the website. Exposure in magazines provides users with wider recognition in the bodybuilding world, which benefits their professional career.

### *5.2.2 Constrain privacy to facilitate interactions amongst strangers*

Contrary to previous research on non-passion-centric use of social network sites (Miller and Edwards 2007) we argue against private profiles or other privacy settings on passion-centric social network sites, in order to increase transparency in online interactions amongst strangers. BodySpace does not provide privacy options that would constrain the visibility of people's profiles, because individuals form impressions of other users based on photos, personal descriptions, and links to friends on the profile before they establish connections with strangers online. BodySpace even increases transparency by making information like comments left on other profiles, friendship requests, and login dates visible on the profile.

Our studies show that transparency has contributed to a positive and supportive atmosphere online, where negative comments or debates of controversial issues like steroids are rare. Thus passion-centric social network sites that support transparency are likely to facilitate more connections and support amongst amateurs and professionals than those that constrain transparency by keeping profile information private.

### *5.2.3 Embrace commercial use rather than prohibiting it*

The serious leisure perspective argues that simplistic distinctions between leisure and professional work are insufficiently varied (Stebbins 2007), and the findings of this study reflect this observation in the context of social network sites. Professionals appropriate functions like profile photos or status messages to promote commercial work to other users on the social network site, even though this constitutes a violation of BodySpace's terms of use.

Based on our studies, passion-centric social network sites will gain their full power by using commercial features, such as marketplaces for goods and services, to draw more professionals to sites and provide the basis for interaction between amateurs and professionals. Sites that use this approach are likely to be more successful than those that try and prohibit commercial activity.

## **6. Conclusions**

Previous studies of social network sites have either concentrated on online interactions amongst friends and amateurs in their leisure (Joinson 2008; Lampe et al. 2006, 2008; Miller and Edwards 2007), or on professionals in large

organizations (DiMicco et al. 2008; Steinfield et al. 2009). Despite the growing body of knowledge in these two areas, little is known about interactions between amateurs and professionals on social network sites.

In this paper we present findings of a 1.5-year field study on the collaboration between and within amateurs, professionals, and celebrities on social network sites in the context of bodybuilding. Our study highlights the needs for information exchange and knowledge sharing in order to learn, participate and advance the activities of a community. It opens up discussion about risks like social isolation and pathological behavior that can arise during serious engagement in leisure and work, and it highlights the value of personal relationships for dealing with these risks and advancing careers. It illustrates how social network sites are used to construct rewards beyond financial return, like self-image, social status and recognition. Despite the similarities between amateurs, professionals and celebrities, our findings also highlight differences between these groups: Social network sites are most valuable to amateurs, who exchange functional and social support online for their training and competitions. Professionals and celebrities appropriate social network sites for their commercial work, but other social and functional aspects shift from social network sites to offline settings as individuals advance in their career.

This shift from social network sites to offline settings during an individual's career constitutes a novel finding, extending previous work that studied showing that studied social network sites of amateurs and professionals in isolation. This finding shows that simplistic distinctions between work and leisure are insufficiently varied to understand the broad phenomenon of social network sites and their integration into the daily practices of millions of users.

Further, this study challenges simplistic distinctions between different types of social network sites based on the types of relationships they facilitate. Most people interacted with strangers – people with no offline relationships –, which supports the literature on 'passion-centric social network sites' (Boyd and Ellison 2007). Yet our studies also surfaced collaborations with clients and colleagues as on 'professional social network sites' like Beehive (DiMicco et al. 2008), as well as with fellow competitors and friends as on 'friend-based social network sites' like Facebook or MySpace (Boyd and Ellison 2007). In future work we aim to further explore the influence of offline ties on the collaboration between amateurs and professionals. We intend to apply our findings to social network sites where individuals are primarily connected on the basis of joint offline activities, like in sports clubs, welfare organizations, rock bands, or motorcycle clubs.

## **7. Acknowledgements**

We would like to thank the participants of our study for sharing their experiences and insights with us. We are grateful to Paul Dourish and Peter Wright for their

support during the field study and the analysis, and to the anonymous reviewers for their insightful comments on this article.

## 8. Notes

- <sup>1</sup> We use the term ‘bodybuilding show’ as an umbrella term for physique, figure and fitness competitions. Men usually compete in physique competitions where they are judged by muscle size, symmetry and proportion. Some women also compete in physique competitions, but most women compete in figure or fitness competitions that emphasize a “feminine shape and proportion, while retaining a trained look” (NABBA 2009, online).
- <sup>2</sup> <http://bodyspace.bodybuilding.com/>
- <sup>3</sup> Bodybuilding.com lists famous bodybuilders who have a profile on BodySpace on <http://www.bodybuilding.com/fun/bodyspaceprofiles.htm>.

## 9. References

- Ashkanasy, S., Vetere, F., Davis, H. and Shanks, G. (2009): Finding the other 5%: Understanding the role of social networking technologies in building personal networks for young adults with cancer. In I. Wagner, H. Tellioglu, E. Balka, C. Simone, and L. Ciolfi (eds): *Proceedings of the European Conference on Computer Supported Cooperative Work (ECSCW 2009)*, Vienna, Austria, September 7-11, 2009. London: Springer, pp. 105-122.
- Bardzell, J. (2007): Creativity in amateur multimedia: Popular culture, critical theory, and HCI. *Human Technology*, vol. 3, no. 1, pp. 12-33.
- Baym, N. K. (2007): The new shape of online community: The example of Swedish independent music fandom *First Monday*, vol. 12, no. 8. Retrieved from: [http://131.193.153.231/www/issues/issue12\\_8/baym/](http://131.193.153.231/www/issues/issue12_8/baym/)
- Baym, N. K. and Burnett, R. (2009): Amateur experts: International fan labour in Swedish independent music. *International Journal of Cultural Studies*, vol. 12, no. 5, pp. 433-449.
- Beer, D. (2008): Making friends with Jarvis Cocker: Music culture in the context of web 2.0. *Cultural Sociology*, vol. 2, no 2, pp. 222-241.
- Binder, J., Howes, A. and Sutcliffe, A. (2009): The problem of conflicting social spheres: Effects of network structure on experienced tension in social network sites. In D. Olsen and R. Arthur (eds): *Proceedings of the Conference on Human Factors in Computing (CHI 2009)*, Boston, MA, April 4-9, 2009. New York: ACM Press, pp. 965-974.
- Bogdan, C. and Bowers, J. (2007): Tuning in: Challenging design for communities through a field study of radio amateurs. In C. Steinfield, B. Pentland, M. Ackerman and N. Contractor (eds): *Proceedings of the Communities and Technologies Conference (C&T 2007)*, Michigan State University, East Lansing, MI, June 28-30, 2007. London: Springer, pp. 439-461.
- Bogdan, C. and Mayer, R. (2009): Makumba: The role of the technology for the sustainability of amateur programming practice and community. In J. Carroll (ed): *Proceedings of the Communities and Technologies Conference (C&T 2009)*, University Park, PA, June 25-27, 2009. New York: ACM Press, pp. 205-214.
- Boyd, D. (2008): Why youth (heart) social network sites: The role of networked publics in teenage social life. In D. Buckingham (ed): *Youth, Identity, and Digital Media*. Cambridge, MA: MIT Press, pp. 119-142.
- Boyd, D. and Ellison, N. (2007): Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, vol. 13, no. 1, pp. 210-230.



- Brown, G., Howe, T., Ihbe, M., Prakash, A. and Borders, K. (2008): Social networks and context-aware spam. In B. Begole and D. McDonald (eds): *Proceedings of the Conference on Computer Supported Cooperative Work (CSCW 2008)*, San Diego, CA, November 8-12, 2008. New York: ACM Press, pp. 403-412.
- Bruckman, A. (2002): Studying the amateur artist: A perspective on disguising data collected inhuman subjects research on the Internet. *Ethics and Information Technology*, vol. 4, no. 3, pp. 217-231.
- Burke, M., Marlow, C. and Lento, T. (2009): Feed me: Motivating newcomer contribution in social network sites. In D. Olsen and R. Arthur (eds): *Proceedings of the Conference on Human Factors in Computing (CHI 2009)*, Boston, MA, April 4-9, 2009. New York: ACM Press, pp. 945-954.
- Butler, B., Joyce, E. and Pike, J. (2008): Don't look now, but we've created a bureaucracy: The nature and roles of policies and rules in Wikipedia. In M. Czerwinski and A. Lund (eds): *Proceedings of the Conference on Human Factors in Computing (CHI 2008)*, Florence, Italy, April 5-10, 2008. New York: ACM Press, pp. 1101-1110.
- Chen, J., Geyer, W., Dugan, C., Muller, M. and Guy, I. (2009): Make new friends, but keep the old: Recommending people on social networking sites. In D. Olsen and R. Arthur (eds): *Proceedings of the Conference on Human Factors in Computing (CHI 2009)*, Boston, MA, April 4-9, 2009. New York: ACM Press, pp. 201-210.
- Cook, E., Teasley, S. D. and Ackerman, M. S. (2009): Contribution, commercialization & audience: Understanding participation in an online creative community. In S. Teasley and E. Havn (eds): *Proceedings of the Conference on Supporting Group Work (GROUP 2009)*, Sanibel Island, FL, May 10-13, 2009. New York: ACM Press, pp. 41-50.
- Crossley, N. (2006): In the gym: Motives, meaning and moral careers. *Body Society*, vol. 12, no. 3, pp. 23-50.
- Davis, S. B. and Moar, M. (2005): The amateur creator. In E. Edmonds (ed): *Proceedings of the Conference on Creativity & Cognition (C&C 2005)*, London, UK, April 12-15, 2005. New York: ACM Press, pp. 158-165.
- DiMicco, J., Millen, D. R., Geyer, W., Dugan, C., Brownholtz, B. and Muller, M. (2008): Motivations for social networking at work. In B. Begole and D. McDonald (eds): *Proceedings of the Conference on Computer Supported Cooperative Work (CSCW 2008)*, San Diego, CA, November 8-12, 2008. New York: ACM Press, pp. 711-720.
- Donath, J. (2007): Signals in social supernets. *Journal of Computer-Mediated Communication*, vol. 13, no. 1, pp. 231-251.
- Ducheneaut, N., Moore, R., & Nickell, E. (2007): Virtual "third places": A case study of sociability in massively multiplayer games. *Computer Supported Cooperative Work (CSCW)*, vol. 16, no. 1, pp. 129-166.
- Ellison, N. B., Lampe, C. and Steinfield, C. (2009): Social network sites and society: Current trends and future possibilities. *Interactions*, vol. 16, no. 1, pp. 6-9.
- Emmett, A. (2008): Networking news. *American Journalism Review*, vol. 30, no. 6, pp. 40-43.
- Ess, C. and AoIR ethics working committee. (2002): *Ethical decision-making and Internet research: Recommendations from the AoIR ethics working committee*: Association of Internet Researchers (AoIR). Retrieved from: <http://www.aoir.org/reports/ethics.pdf>
- Gilbert, E., Karahalios, K. and Sandvig, G. (2008): The network in the garden: An empirical analysis of social media in rural life. In M. Czerwinski and A. Lund (eds): *Proceedings of the Conference on Human Factors in Computing (CHI 2008)*, Florence, Italy, April 5-10, 2008. New York: ACM Press, pp. 1603-1612.
- Goffman, E. (1959): *The Presentation of Self in Everyday Life*. Garden City, NY: Doubleday.
- Granovetter, M. S. (1973): The strength of weak ties. *The American Journal of Sociology*, vol. 78, no. 6, pp. 1360-1380.
- Grinter, R. E. (2005): Words about images: Coordinating community in amateur photography. *Computer Supported Cooperative Work (CSCW)*, vol. 14, no. 2, pp. 161-188.

- Hookway, N. (2008): 'Entering the blogosphere': Some strategies for using blogs in social research. *Qualitative Research*, vol. 8, no. 1, pp. 91-113.
- Hotten, J. (2004): *Muscle: A Writer's Trip Through a Sport with No Boundaries*. London: Yellow Jersey Press.
- Howe, J. (2005): The Hit Factory. *Wired*, 11, 11. Retrieved from: <http://www.wired.com/wired/archive/13.11/myspace.html>
- Humphreys, L. (2007): Mobile social networks and social practice: A case study of Dodgeball. *Journal of Computer-Mediated Communication*, vol. 13, no. 1, pp. 341-360.
- Joinson, A. N. (2008): Looking at, looking up or keeping up with people?: Motives and use of Facebook. In M. Czerwinski and A. Lund (eds): *Proceedings of the Conference on Human Factors in Computing (CHI 2008), Florence, Italy, April 5-10, 2008*. New York: ACM Press, pp. 1027-1036
- Kittur, A., Chi, E. H. and Suh, B. (2008): Crowdsourcing user studies with Mechanical Turk. In M. Czerwinski and A. Lund (eds): *Proceedings of the Conference on Human Factors in Computing (CHI 2008), Florence, Italy, April 5-10, 2008*. New York: ACM Press, pp. 453-456.
- Kittur, A. and Kraut, R. E. (2008): Harnessing the wisdom of crowds in Wikipedia: Quality through coordination. In B. Begole and D. McDonald (eds): *Proceedings of the Conference on Computer Supported Cooperative Work (CSCW 2008), San Diego, CA, November 8-12, 2008*. New York: ACM Press, pp. 37-46.
- Klein, A. M. (1993): *Little Big Men: Bodybuilding Subculture and Gender Construction*. Albany, NY: State University of New York Press.
- Krasnova, H., Günther, O., Spiekermann, S., & Koroleva, K. (2009): Privacy concerns and identity in online social networks. *Identity in the Information Society*, vol. 2, no. 1, pp. 39-63.
- Lampe, C. A. and Ellison, N. (2010): Student athletes on Facebook. In K. Inkpen and C. Gutwin (eds): *Proceedings of the Conference on Computer Supported Cooperative Work (CSCW 2010), Savannah, GA, February 6-10, 2010*. New York: ACM Press, pp. 193-196.
- Lampe, C. A., Ellison, N. B. and Steinfield, C. (2006): A face(book) in the crowd: Social searching vs. social browsing. In P. Hinds and D. Martin (eds): *Proceedings of the Conference on Computer Supported Cooperative Work (CSCW 2006), Banff, Canada, November 4-8, 2006*. New York: ACM Press, pp. 167-170.
- Lampe, C. A., Ellison, N. B. and Steinfield, C. (2008): Changes in use and perception of Facebook. In B. Begole and D. McDonald (eds): *Proceedings of the Conference on Computer Supported Cooperative Work (CSCW 2008), San Diego, CA, November 8-12, 2008*. New York: ACM Press, pp. 721-730.
- Lave, J. and Wenger, E. (1991): *Situated Learning: Legitimate Peripheral Participation*. Cambridge, UK: Cambridge University Press.
- Lewis, K., Kaufman, J. and Christakis, N. (2008): The taste for privacy: An analysis of college student privacy settings in an online social network. *Journal of Computer-Mediated Communication*, 14, 1, pp. 79-100.
- Luther, K. and Bruckman, A. (2008): Leadership in online creative collaboration. In B. Begole and D. McDonald (eds): *Proceedings of the Conference on Computer Supported Cooperative Work (CSCW 2008), San Diego, CA, November 8-12, 2008*. New York: ACM Press, pp. 343-352.
- Martin, D., O'Neill, J. and Randall, D. (2009): 'Talking about (my) generation': Creativity, practice, technology & talk. In I. Wagner, H. Tellioglu, E. Balka, C. Simone, and L. Ciolfi (eds): *Proceedings of the European Conference on Computer Supported Cooperative Work (ECSCW 2009), Vienna, Austria, September 7-11, 2009*. London: Springer, pp. 171-190.
- Miles, M. B. and Huberman, A. M. (1994): *Qualitative Data Analysis: An Expanded Sourcebook* (2nd ed.). Thousand Oaks, CA: Sage Publications.

- Miller, A. D. and Edwards, W. K. (2007): Give and take: A study of consumer photo-sharing culture and practice. In M. B. Rosson and D. Gilmore (eds): *Proceedings of the Conference on Human Factors in Computing (CHI 2007)*, San Jose, CA, April 28 to May 3, 2007. New York: ACM Press, pp. 347-356.
- Monaghan, L. F. (2001): *Bodybuilding, Drugs, and Risk*. New York: Routledge.
- NABBA. (2009): NABBA Rules. Retrieved from: <http://www.nabba.co.uk/aboutus/rules.html>
- Neuman, W. L. (2006): *Social Research Methods: Qualitative and Quantitative Approaches* (6th ed.). Boston, MA: Allyn and Bacon.
- Nov, O. (2007): What motivates Wikipedians? *Communications of the ACM*, vol. 50, no. 11, pp. 60-64.
- Oldenburg, R. (1989): *The Great Good Place: Cafes, Coffee Shops, Community Centers, Beauty Parlors, General Stores, Bars, Hangouts and How They Get You Through the Day*. New York: Paragon Books.
- Ploderer, B., Howard, S. and Thomas, P. (2008): Being online, living offline: The influence of social ties over the appropriation of social network sites. In B. Begole and D. McDonald (eds): *Proceedings of the Conference on Computer Supported Cooperative Work (CSCW 2008)*, San Diego, CA, November 8-12, 2008. New York: ACM Press, pp. 333-342.
- Probert, A. (2007): The fine line: An insight into 'risky' practices of male and female competitive bodybuilders. *Annals of Leisure Research*, vol. 9, nos. 3-4, pp. 272-290.
- Skeels, M. M. and Grudin, J. (2009): When social networks cross boundaries: A case study of workplace use of Facebook and LinkedIn. In S. Teasley and E. Havn (eds): *Proceedings of the Conference on Supporting Group Work (GROUP 2009)*, Sanibel Island, FL, May 10-13, 2009. New York: ACM Press, pp. 95-104.
- Smith, D. and Hale, B. (2005): Exercise-dependence in bodybuilders: Antecedents and reliability of measurement. *Journal of Sports Medicine and Physical Fitness*, vol. 45, no. 3, pp. 401-409.
- Stebbins, R. A. (1979): *Amateurs: On the Margin Between Work and Leisure*. Beverly Hills, CA: Sage.
- Stebbins, R. A. (1992): *Amateurs, Professionals and Serious Leisure*. Montreal: McGill-Queen's University Press.
- Stebbins, R. A. (2007): *Serious Leisure: A Perspective for Our Time*. New Brunswick, NJ: Transaction Publishers.
- Steinfeld, C., DiMicco, J. M., Ellison, N. B. and Lampe, C. (2009): Bowling online: Social networking and social capital within the organization. In J. Carroll (ed): *Proceedings of the Communities and Technologies Conference (C&T 2009)*, University Park, PA, June 25-27, 2009. New York: ACM Press, pp. 245-254.
- Steinkuehler, C. A. and Williams, D. (2006): Where everybody knows your (screen) name: Online games as "third places". *Journal of Computer-Mediated Communication*, vol. 11, no. 4, pp. 885-909.
- Suhr, H. C. (2009): Underpinning the paradoxes in the artistic fields of MySpace: The problematization of values and popularity in convergence culture. *New Media Society*, vol. 11, nos. 1-2, pp. 179-198.
- Torrey, C., Churchill, E. F. and McDonald, D. W. (2009): Learning how: The search for craft knowledge on the internet. In D. Olsen and R. Arthur (eds): *Proceedings of the Conference on Human Factors in Computing (CHI 2009)*, Boston, MA, April 4-9, 2009. New York: ACM Press, pp. 1371-1380.
- Turkle, S. (1995): *Life on the Screen: Identity in the Age of the Internet*. New York: Simon & Schuster.
- Van House, N. A. (2007): Flickr and public image-sharing: Distant closeness and photo exhibition. In M. B. Rosson and D. Gilmore (eds): *Extended Abstracts of the Conference on Human Factors in Computing (CHI 2007)*, San Jose, CA, April 28 to May 3, 2007. New York: ACM Press, pp. 2717-2722.

- Vyas, D., Heylen, D., Nijholt, A. and Veer, G. (2009): Collaborative practices that support creativity in design. In I. Wagner, H. Tellioglu, E. Balka, C. Simone, and L. Ciolfi (eds): *Proceedings of the European Conference on Computer Supported Cooperative Work (ECSCW 2009), Vienna, Austria, September 7-11, 2009*. London: Springer, pp. 151-170.
- Wenger, E. (1998): *Communities of Practice: Learning, Meaning, and Identity*. Cambridge, UK: Cambridge University Press.
- Wolke, D. and Sapouna, M. (2008): Big men feeling small: Childhood bullying experience, muscle dysmorphia and other mental health problems in bodybuilders. *Psychology of Sport and Exercise*, vol. 9, no. 5, pp. 595-604.