

Understanding and Facilitating the Development of Social Networks in Online Dating Communities: A Case Study and Model

Jonathan Bishop
Glamorgan Blended Learning Ltd

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Chapter XV

Understanding and Facilitating the Development of Social Networks in Online Dating Communities: A Case Study and Model

Jonathan Bishop

*Glamorgan Blended Learning Ltd. & The GTi Suite & Valleys Innovation Centre & Navigation Park
& Abercynon, UK*

ABSTRACT

Online dating is a big business, allowing people from the comfort of their own home to view and read about potential mates all around the world. Different dating sites offer different services. However, it is not yet commonplace for Web sites dedicated to dating to use the social networking tools used by popular online communities, such as those that use the personal homepage and message board genres. The ecological cognition framework (ECF) provides a theoretical model regarding online dating communities' behavior and relationship development. A model based on the ECF is proposed and provides a basis for developing online dating services that effectively support relationship development. Two investigations are presented in this chapter, one that uses a case study approach to identify and describe online dating services from the perspective of a specific case and another that assess the effectiveness of existing online dating services based on the guidelines developed from the case study. The case study provides a useful insight into the nature of social networking from the perspective of a specific case, which led to guidelines for developing e-dating systems that when evaluated showed that the most popular social networking services also score well against the criteria proposed in those guidelines.

INTRODUCTION

According to Dvorak et al. (2003), people have always found ways to meet on the Internet, with online dating being a big business, allowing people from the comfort of their own home to view and read about potential mates all around the world. Through *virtual worlds* such as multi-user-dungeons (MUDs), they can interact, talk and compete against others in an online environment. According to Quansah (2004), different dating sites offer different services, though it is not yet commonplace for Web sites dedicated to dating to use the social networking tools offered by popular online communities. Liebowitz (2003) argues that social networking is a powerful way to bring people closer together suggesting social networking tools are ideally placed to enhance dating Web sites. According to Kuriansky there are a number of advantages to dating online, including the immediacy, the cost, access, practicing social skills, learning verbal expression, developing relationships, accessibility and control. Immediacy is beneficial because opportunities are just a click away, as the user can be writing a document or surfing the Net then switch to e-mail or instant messaging. The computer can cost less than phone calls, and with some services the dating is free. Access to the services is efficient whether wireless broadband or simple dial-up. Online dating allows the practicing of social skills as the user can make mistakes knowing they will never see that person again. It allows for the learning of verbal expression, as when the user types on their profile or in messages they practice expressing themselves in the way they want to. Computer contact can also help foster the friendship that is the basis for a long-lasting love by allowing the time and safety for a relationship to grow. Those who cannot get out of their locality due to accessibility restrictions can also benefit from online dating as they can keep in touch with others at a

distance. The user is also in total control of where, where and with whom they connect, especially if the service uses the Circle of Friends.

The Circle of Friends method of social networking, developed as part of the VECC Project (see Bishop, 2002) has been embedded into several social networking sites. The benefit of the Circle of Friends over earlier technologies is that it puts the user in control. The first Web site to use it for dating was *Friendster* in 2002 when there were only a handful of sites using the technology, including A Guide to Robin Hood and Northern England and *Llantrisant Online*, although according to Kim and Aldrich (2005) there were at least 30 social networking sites based on the Circle of Friends in 2005.

Social networking tools often form part of online communities and it has been argued that these communities have the potential to radically transform social interaction and community formation (Lutters & Ackerman, 2003). There have been definitions of online communities based on the forms they take from Web sites that provide facilities to discuss particular subjects or interests to groups of people communicating using instant messaging tools (Bishop, 2003). Hunter (2002) defines an online community as a group of people who interact with each other, learn from each other's work and provide knowledge and information resources to the group related to certain agreed-upon topics of shared interest. There exists a possible technical definition, which could be that an information system is an online community if those that use it have to go through the Membership Lifecycle identified by Kim (2000).

Understanding how people develop relationships and the role of social networking technology such as the *Circle of Friends* in enhancing the dating experience requires a deeper understanding of human behavior.

UNDERSTANDING THE BEHAVIOUR OF ACTORS IN ONLINE DATING COMMUNITIES

It has long been argued that there should be a framework for understanding actors based on ecological perceptual psychology (Kytä, 2003). Wilson and Keil (2001) indicate that early work into ecological psychology focused on movement-produced information, which had been largely neglected in other approaches. It is quite clear that any model to explain the behavior of actors that ignores the possibility of direct perception cannot fully explain the behavior of actors in an environment. To fully understand the actor's role in online communities, we must treat the virtual environment on par with the physical environment. Virtual environments contain other actors, structures and artifacts, such as mediating artifacts (Bishop, 2005). Both virtual and physical environments can provide stimuli that create impetuses in actors, and these actors will be driven to participate in both environments as a result of experiencing them.

The *ecological cognition framework* (Bishop, 2007a; 2007c) presented in Figure 1 suggests that there are five binary opposition forces that have impact on an actor that are activated when a change occurs in the actor's environment, which are social-antisocial, creative-destructive, order-chaos, vengeance-forgiveness, and existential-thanatotic. Examples of each segment of these binary opposition forces can be seen in online communities. Social forces are very common in driving actors to take part in human-computer systems, which are often social spaces. Rhiengold (2000) describes 'the social Web' in which people like him participate as a result of being driven by their longings to participate. Actors in these virtual environments often experience creative forces and will solve problems and create content. The existence of order forces is also apparent in information systems, where actors will carry out actions such as organizing bookmarks, rearrang-

ing pages and some actors may take control of a situation, such as when members are flaming each other in a chat session, and others will attempt to create order when a bulletin board goes off topic and will carry out actions to bring it back to the original topic, despite the fact that allowing a bulletin board to go off topic can increase sociability in the community (Bishop, 2002). Actions driven by vengeance forces are very apparent in human-computer systems, as actors in virtual environments are known to be very aggressive (Kiesler & Sproull, 1992; Wallace, 2001), carrying out actions such as flaming, and posting negative feedback on other community members. Existential forces, such as eating, while not obvious in virtual environments, have an impact on the actions of an action that is part of them. Actions resulting from anti-social forces are easily discovered in virtual environments, as actors will often flame others. Destructive forces are also apparent in information systems that can be edited, as some actors will 'blank' pages of content. Chaos forces can be seen in some functional systems that form part of virtual environments as people will attempt to provoke others. The result of forgiveness forces can be seen in some information systems, where actors will apologize to actors that they have had a disagreement with, often what has resulted from order forces.

The second level of the framework presented in Figure 1 is an actor's cognitions, which are goals, plans, values, beliefs and interests. The arrow in the ECF between Level 3 and the Environment is the response. The response changes the environment, either intrinsically through modifying the actor, or extrinsically through them modifying their environment.

A CASE STUDY OF SOCIAL NETWORKING AND DATING ONLINE

Selecting from different e-dating services can be a challenging process for individuals in their

search for potential friends and partners. There is a plethora of social networking services available on the Web that individuals have to navigate their way through in order to achieve their goals. A number of questions can be asked, including what do people look to get out of social networking services, what makes a good social networking service and can current psychological frameworks be used to understand these applications. Some of the most widely used methods for researching online are interviewing, observation and document analysis (Mann & Stewart, 2000). Interviewing is the most widely applied technique for conducting systematic social inquiry in academic, clinical, business, political and media life with qualitative research being well established in this area (*ibid.*). According to Thyer (2001), interviewing participants is one way of accessing information beyond what has been observed, and that is related to the meaning of the experience. According to Barton (2006), there is no correct or incorrect way of interviewing participants, though Stables and Goodwyn (2004) recommend using follow-up interviews when conducting a study. Interviewing can form a core part of a case study. The basic case study entails the detailed and intensive analysis of a single case with some of the best known studies in business and management research being based on this method, which can be an investigation of a single organization, a single location, a person, or an event (Bryman & Bell, 2003). Some case studies investigating an organization have provided insights into the types of problems usability studies are likely to encounter, as well as some valuable lessons learned along the way in the organization (Rowley, 1994) and others looking at the development of online learning communities over a number of years have managed to refine design methodologies (Bishop, 2007d).

This first study in this chapter seeks to develop an understanding of online dating communities by evaluating the case of someone seeking to benefit from these services.

The Case

The case in question was of a young male in his early 20s who was educated to university level who took part in university social activities such as debating, book club and political activities, suggesting he had reasonable social skills and capabilities. The case over a period of a year used various online communities that could be used as online dating services and engaged with them to develop relationships with others. Utilizing the ecological cognition framework (Bishop, 2007a; 2007c) and the ecological cognitive learning theory model (Bishop, 2007b), an interviewing model was developed to assist the author in asking questions that would allow him to discover how the case used online dating services and how they interacted with others in them. The model suggests an interviewer should look at the intelligences used by the case, investigate the stages they go through when learning, investigate the process by which they perceive and respond to a stimulus, and investigate the cognitions they hold and develop and how this relates to the way they perceive the worlds around them.

Results

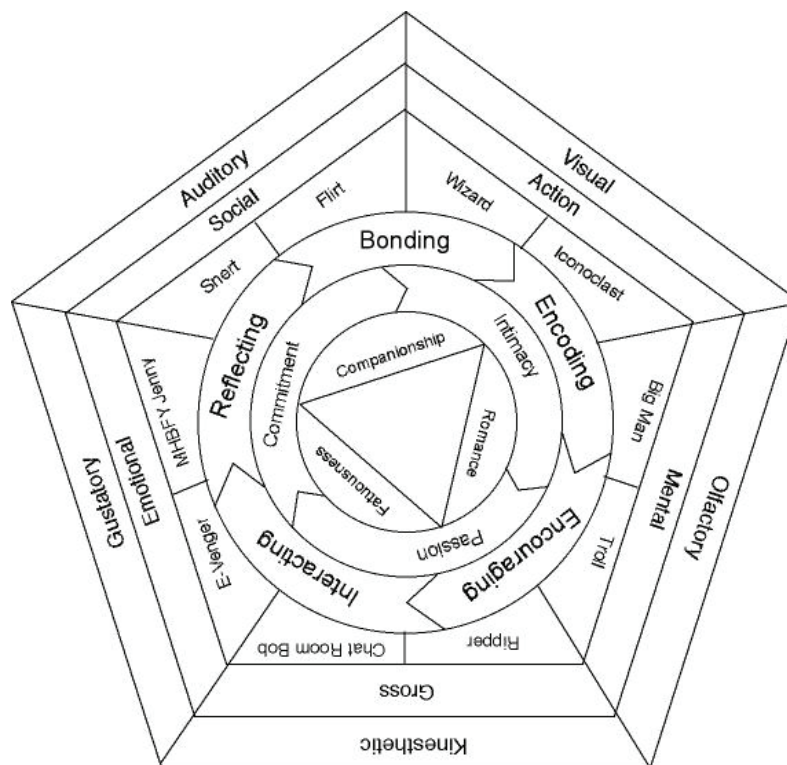
The interview explored the cognitions held by the case, including his goals for using social networking sites. While initially he did not claim to have any goals, it soon became clear that he selected people he would interact with based on whether they were looking for a relationship. The case indicated that he would not interact with another person without first finding out about them on their profile, suggesting that the learning cycle proposed by Bishop (2007b) is equally relevant to relationship building in that there needs to be some encoding of beliefs, values and interests before an actor will develop goals and plans to interact with someone, suggesting that there needs to be a degree of intimacy and liking before a relationship can progress. Also clear from the interview was

that this particular case was concerned whether the people on the sites masked some malicious intention, such as to send them SPAM messages. The case claimed that along with photographs he assessed how much the individual used the service as an indication of whether they were genuine, suggesting that online dating communities could be more effective if the profile pages show that the individual has participated in community life, such as through taking or setting up quizzes, posting messages or leaving comments on others' pages. A feature that seemed important to the case was that the dating services should offer recommendation systems that suggest specific individuals that they might be interested in, and he suggested that he is more likely to be encouraged to interact with someone if the site recommends it suggesting that online dating services need to be persuasive in their approach to helping people find their match.

TOWARDS A MODEL FOR UNDERSTANDING RELATIONSHIPS AND DEVELOPING ONLINE DATING COMMUNITIES

The study demonstrated the relevance of the ecological cognition framework in understanding the behavior of actions in virtual environments, and the relevance of ecological cognitive learning theory to understanding relationships. The framework could also be used to understand the particular character traits of those using online dating communities. Bishop (2007b) proposes that for an actor to learn or be persuaded they have to experience five psychological effects: the belonging effect, the demonstration effect, the inspiration effect, the mobilization effect and the confirmation effect. Their respective processes of the bonding process, the sub-conscious encoding

Figure 1. A model for understanding relationships and developing online dating communities



process, the encouragement process, the interaction process and the reflection process can create these effects. Some authors have suggested that seduction is a form of persuasion (e.g., Mbakwe & Cunliffe, 2003) and others have suggested that seduction is an important technique for increasing the chances of a successful dating outcome (e.g., MacKinney, 1991). In light of the study earlier in this chapter, Bishop's (2007b) lifecycle can be seen to be appropriate for understanding the development and maintenance of relationships. Also apparent is that this lifecycle can be mapped onto the *Triangular theory of love* (Sternberg, 1986), as it can be seen that the bonding stage, the encoding stage and part of the encouragement stage form part of what Sternberg calls intimacy; what Sternberg calls passion can be seen to fall into the encouragement and interaction stage of Bishop's lifecycle, and the reflection stage that leads back onto the bonding stage can be seen to occur when those in a relationship experience what Sternberg calls commitment.

- Recommendation 1: Utilize various genres of online community

Many authors of guidelines to building online communities have indirectly recommended using multiple models of online communities (e.g., Figallo, 1998; Kim, 2000; Preece, 2000). A Web site meeting the definition of an online community based on Kim's (2000) lifecycle could utilize more than one genre. As identified in the study above, a Web site is more able to assist with social networking and relationship building if it uses a variety of different models of discussion and networking at the different stages of the lifecycle presented in the model in Figure 2.

- Recommendation 2: Utilize the Circle of Friends social networking tool, or at minimum allow people to keep lists of actual or potential friends.

The ECF clearly places the actor in the environment, and the relationship between actors is clearly important. Many social network service providers have used the *Circle of Friends* to allow their actors using their service to manage their relationships with others effectively. The Circle of Friends, which was popularized by *Friendster* (Teten & Allen, 2005), allows actors to see not only their own friends as they could with instant messaging tools, but also allow them to see who their friends' friends are. As a social networking technology, the Circle of Friends fits into a long history of using the Internet as an environment for developing relationships and increasing sociability (Weng, 2007). The first social networking service on the Web was Classmates.com, which launched in 1995 and used the *Old School Tie* social networking method, which is defined as a method for building networks of users using the schools and universities they graduated from. This was followed in 1997 with the launch of *SixDegrees.com*, which utilized the *Web of Contacts* model, which is defined as a technique for displaying social networks using social networking analysis that the user does not manage it. The advantage of the Circle of Friends, which was developed in 1999 as part of the Virtual Environments for Community and Commerce (VECC) Project (see Bishop, 2002; 2007d), is that it allows the user to manage their network and decide who they want to be friends with. The 2001 implementation of the Circle of Friends as part of Llantrisant.com allowed users to classify their friends according to whether they trusted them or not, combining it with the Circle of Trust that was also developed in 1999. The Circle of Friends flourished in 2002 with the launch of Friendster, and is now part of many other communities including the popular *MySpace* and Facebook services.

- Recommendation 3: Utilize a recommendation or search system that encourages people to interact with others with similar cognitions to them

As the ecological cognition framework clearly suggests, a stimulus, such as a thought to do something or a request from another actor can only be turned into a response after an actor's cognitions, that is, their goals, plans, values, beliefs and interests have been activated and evaluated. Social networking sites can help in this process by removing the obstacles to actors interacting with others. One method for doing this is to use recommender systems, which have been used in e-commerce to reduce the number of products from the whole catalogue to ones that the customer would be interested in (Wang, 2004). Online dating services could utilize such systems to narrow down the number of individuals available to an actor in line with what they are looking for. This could be done using personality-based questionnaires as is done with OkCupid, personal characteristics, as is done with Match.com or keyword searches as Match.com and MySpace use.

Such systems may allow actors to be engaged in a state of 'flow' so much so that they experience 'deference'. Csikszentmihalyi (1977; 1990) refers to a state of flow as being the state of mind where an actor will act with total involvement narrowing their attention focus and experiencing a loss of self-consciousness. Bishop (2007a; 2007c) suggests that if a virtual community does not create discomfort in the actor's mind, or 'dissonance', then the actor is more likely to become engaged in a state of flow and act out their desires, thus experiencing deference. Deference in this context is where an actor will receive a request to do something, such as someone asking them how they are and will respond immediately without any discomfort, in the example immediately saying they are 'fine' as if it is a reflex. However, Bishop (2007c) also points out that while engaging an actor in a state of flow might mean that they are more likely to experience deference and act out their desires to be social, there is also the possibility that they will act out their vengeance desires as well. This may be true as some studies have indicated that in virtual environments where

actors are likely to experience deference they are more likely to flame others (Orengo Castellá et al., 2000).

THE FUTURE OF ONLINE DATING COMMUNITIES

A study was carried out with major dating services being identified through the earlier study in this chapter and through an Internet search. The services were scored based on how well they adhered to the recommendations. A dating service was given one point per online community genre it utilized, one point if it used the Circle of Friends or half a point if it used a friend list and one point if it complied with recommendation 3. The mean of number of points across the recommendations was calculated and this was the score given to the dating service.

The findings of the study reveal that the online dating services driven by subscriptions offer the least amount of social networking opportunities, as they often only utilize the personal homepage genre of online community, which only makes them effective for the bonding and encoding stage of the relationship. The dating services modeled on the free-at-the-point-of-use model scored much higher as many of them utilized the Circle of Friends social networking method and a wider number of online community genres. The highest scoring dating service was *Facebook*, which uses the personal homepage genre, the message board genre, the weblog and directory genre, as well as utilizing the Circle of Friends. The second highest scoring, *Second Life* utilizes virtual worlds, message boards, chat groups and profile pages to allow people to contact in a three-dimensional environment. The popularity of *Facebook* with its widespread use and its high score based on these guidelines suggest that the guidelines may be appropriate for evaluating the appropriateness of a social networking service for dating. According to Easton (1982), being able to predict outcomes

Table 1. Scores of major dating services

Dating Service	Score
Facebook	2.00
Second Life	1.83
Badoo	1.67
MySpace	1.67
Friendster	1.67
OkCupid	1.50
Plenty of Fish	1.17
FreeDating.co.uk	1.17
Bebo	1.00
Meetic	0.83
Match.com	0.83
LoopyLove	0.83

is one of the possible uses of a case study like the one in this chapter, and the above model and guidelines appear to be indicative of what will make a good e-dating service.

Implications for the Future of E-Dating Services

Goel (2005) argues that e-dating services are becoming a mainstream business with vendors keen to protect their reputation. Traditional online dating Web sites that follow the directory structure of e-commerce sites like Amazon such as *Match.com* and *Meetic* were the lowest scoring in the study, and these sites seem not to follow the model in Figure 2 as they treat participants as products to view rather than individuals to network with as MySpace and Facebook allow.

DISCUSSION

People have always found ways to meet on the Internet, with online dating being a big business, allowing people from the comfort of their own home to view and read about potential mates all around the world and through using virtual worlds

they can interact, talk and compete against others in an online environment. Different dating sites offer different services, though it is not yet commonplace for Web sites dedicated to dating to use the social networking tools used by popular online communities, which are a powerful way to bring people closer together, suggesting social networking tools are ideally placed to enhance dating Web sites. The Circle of Friends method of social networking has been embedded into several social networking sites, including MySpace and Facebook, which are services that host collections of online communities based on the personal homepage genre that also act as dating sites. The benefit of the Circle of Friends over earlier technologies was that it put the user in control. Social networking tools often form part of online communities and it has been argued that these communities have the potential to radically transform social interaction and community formation; and while there have been definitions of online communities based on the forms they take from Web sites that provide facilities to discuss particular subjects or interests to groups of people communicating using instant messaging tools, there exists a possible social definition, which could be that an information system is an online community if those that use it have to go through the Membership Lifecycle identified by Kim (2000).

It has long been argued that there should be a framework for understanding actors based on ecological perceptual psychology, with investigations attempting to prove that perception can be explained without resorting to assumptions about inner representations, or at least be explained so that the existence of inner representations is not necessary or essential in every situation. The study found that e-dating service providers should utilize various genres of online community, utilize the Circle of Friends social networking tool, or at minimum allow people to keep lists of actual or potential friends and utilize a recommendation or search system that encourages people to interact with others with similar cognitions to them.

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REFERENCES

- Adamic, L., & Adar, E. (2003). Friends and neighbors on the Web. *Social Networks*, 25(3), 211-230.
- Aiken, L. (1998). *Human development in adulthood*. London: Springer.
- Alonzo, M., & Aiken, M. (2004). Flaming in electronic communication. *Decision Support Systems*, 36(2004), 205-213.
- Anon. (2003). Net grief for online 'suicide'. <http://news.bbc.co.uk/1/hi/technology/2724819.stm>.
- Barton, K. (2006). *Research methods in social studies education: Contemporary issues and perspectives*. Charlotte, NC: Information Age Publishing.
- Bishop, J. (2002). Development and evaluation of a virtual community. BSc(Hons) dissertation. <http://www.jonathanbishop.com/publications/display.aspx?Item=1>.
- Bishop, J. (2003). Factors shaping the form of and participation in online communities. *Digital Matrix Magazine*, 85(2003), 22-24.
- Bishop, J. (2005). The role of mediating artefacts in the design of persuasive e-learning systems. *Proceedings of the Internet Technology & Applications 2005 Conference*. Wrexham: North East Wales Institute of Higher Education.
- Bishop, J. (2006). *Social change in organic and virtual communities: An exploratory study of Bishop Desires*. Paper presented to the Faith, Spirituality and Social Change Conference. University of Winchester.
- Bishop, J. (2007a). Increasing participation in online communities: A framework for human-computer interaction. *Computers in Human Behavior*, 23(2007), 1881-1893.
- Bishop, J. (2007b). *The psychology of how Christ created faith and social change: Implications for the design of e-learning systems*. Paper presented to the Faith, Spirituality, and Social Change Conference. University of Winchester.
- Bishop, J. (2007c). Ecological cognition: A new dynamic for human-computer interaction. In: B. Wallace, A. Ross, J. Davies, & T. Anderson (Eds.), *The mind, the body and the world: Psychology after cognitivism?* (pp. 327-345). Exeter: Imprint Academic.
- Bishop, J. (2007d). Evaluation-centred design of e-learning communities: A case study and review. *Proceedings of the Second International Conference on Internet Technologies and Applications, ITA07*, (pp. 1-9). University of Wales.
- Bryman, A., & Bell, E. (2003). *Business research methods*. Oxford: Oxford University Press.
- Csikszentmihalyi, M. (1977). *Beyond boredom and anxiety*. San Francisco, CA: Jossey-Bass.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: Harper & Row.
- DeLamater, J. (2003). *Handbook of social psychology*. London: Springer.

- Dvorak, J., Pirillo, C., & Taylor, W. (2003). *Online!: The book*. Upper Saddle River, NJ: Prentice Hall.
- Feller, J. (2005). *Perspectives on free and open source software*. Cambridge, MA: The MIT Press
- Figallo, C. (1998). *Hosting Web communities: Building relationships, increasing customer loyalty and maintaining a competitive edge*. Chichester: John Wiley & Sons.
- Goel, N. (2005). Getting more personal. *PC Magazine*, January.
- Harvey, L., & Myers, M. (1995). Scholarship and practice: The contribution of ethnographic research methods to bridging the gap. *Information Technology and People*, 8(3), 13-27.
- Hinde, R. (1997). *Relationships: A dialectical perspective*. London: Psychology Press.
- Hunter, B. (2002). Learning in the virtual community depends upon changes in local communities. In: K. Renninger & W. Shumar (Eds.), *Building virtual communities: Learning and change in cyberspace* (pp. 96-128). Cambridge: Cambridge University Press.
- Huriansky, J. (2003). *The complete idiot's guide to dating*. London: Penguin Group.
- Jamali, M., & Abolhassani, H. (2006). Different aspects of social network analysis. *Proceedings of the IEEE International Conference on Web Intelligence 2006*, (pp. 66-72).
- Jansen, E. (2002). *Netlingo: The Internet dictionary*. Ojai, CA: Independent Publishers Group.
- Jones, Q., & Grandhi, S. (2005). P3 systems: Putting the place back into social networks. *IEEE Internet Computing*, September-October(2005), 38-46.
- Kiesler, S., & Sproull, L. (1992). Group decision making and communication technology. *Organizational Behavior and Human Decision Processes*, 52(1), 96-123.
- Kim, P., & Aldrich, H. (2005). *Social capital and entrepreneurship*. Hanover, MA: Now Publishers Inc.
- Kollock, P. (1999). The economies of online co-operation: Gifts and public goods in cyberspace. In: M. Smith & P. Kollock (Eds.), *Communities in cyberspace*. London: Routledge.
- Kollock, P., & Smith, M. (1996). Managing the online commons: Cooperation and conflict in computer communities. In: S. Herring (Ed.), *Computer mediated communication; linguistic, social, and cross-cultural perspectives* (pp. 109-128).
- Kyttä, M. (2003). *Children in outdoor contexts: Affordances and independent mobility in the assessment of environmental child friendliness*. Doctoral dissertation presented at Helsinki University of Technology. Espoo, Finland.
- Levine-Young, M., & Levine, J. (2000). *Poor Richard's building online communities*. Lakewood, CO: Top Floor Publishing.
- Lievowitz, J. (2003). *Addressing the human capital crisis in federal government: A knowledge management perspective*. London: Elsevier.
- Lindahl, C., & Blount, E. (2003). Weblogs: Simplifying Web publishing. *IEEE Computer*, 36(11), 114-116.
- Litvinoff, M. (1990). *The Earthscan action handbook: For people and planet*. London: Earthscan Publishers.
- Lutters, W., & Ackerman, M. (2003). Joining the backstage: Locality and centrality in an online community. *Information Technology & People*, 16(2), 157-182.
- MacKinney, K. (1991). *Sexuality in close relationships*. London: Lawrence Erlbaum Associates.

- Mann, C., & Stewart, F. (2000). *Internet communication and qualitative research: A handbook for research online*. London: Sage Publications.
- Mbakwe, C., & Cunliffe, D. (2003). Conceptualising the process of hypermedia seduction. *Proceedings of the 1st International Meeting of Science and Technology Design: Senses and Sensibility—Linking Tradition to Innovation Through Design*, (pp. 25-26). Lisbon, Portugal.
- Mena, J. (1999). *Data mining your Web site*. Oxford: Digital Press.
- Morahan-Martin, J., & Schumacher, P. (2003). Loneliness and social uses of the Internet. *Computers in Human Behavior*, 19(2003), 659-671.
- Nielsen, J. (2006, October 9). Participation inequality: Encouraging more users to contribute. *Useit.com*. http://www.useit.com/alertbox/participation_inequality.html.
- Orengo Castellá, V., Zornoza Abad, A., Prieto Alonso, F., & Peiró Silla, J. (2000). The influence of familiarity among group members, group atmosphere and assertiveness on uninhibited behavior through three different communication media. *Computers in Human Behavior*, 16(2000), 141-159.
- Pantazis, C., Gordon, D., & Levitas, R. (2006). *Poverty and social exclusion in Britain: The millennium survey*. London: The Policy Press.
- Preece, J. (2000). *Online communities: Designing usability, supporting sociability*. Chichester: John Wiley & Sons.
- Quansah, E. (2004). *How to identify your soul-mate*. Oxford: Trafford Publishing.
- Reinin, B., Briggs, R., & Nunamaker, J. (1998). Flaming in the electronic classroom. *Journal of Management Information Systems*, 14(3), 45-59.
- Rheingold, H. (1999). A slice of life in my virtual community. In: P. Ludlow (Ed.), *High noon on the electronic frontier: Conceptual issues in cyberspace*. Cambridge, MA: MIT Press.
- Rhiengold, H. (2000). *The virtual community: Homesteading on the electronic frontier*. London: The MIT Press.
- Rokach, A., & Neto, F. (2005). Age, culture, and the antecedents of loneliness. *Social Behavior and Personality*, 33(5), 477-494.
- Rowley, D. (1994). Usability testing in the field; bringing the laboratory to the user. *Proceedings of the SIGCHI conference on human factors in computing systems; celebrating interdependence*. Boston, Massachusetts.
- Shumar, W., & Tenninger, K. (2002). Introducing: On conceptualizing community. In: K. Renninger & W. Shumar (Eds.), *Building online communities: Learning and change in cyberspace* (pp. 1-20). Cambridge: Cambridge University Press.
- Siddiquee, A., & Kagan, C. (2006). The Internet, empowerment, and identity: An exploration of participation by refugee women in a community Internet project (CIP) in the United Kingdom (UK). *Journal of Community & Applied Social Psychology*, 16(3), 189-206.
- Smith, A. (2001). Problems of conflict management in virtual communities. In: M. Smith & P. Kollock (Eds.), *Communities in cyberspace*. London: Routledge.
- Smith, C. (2000). Content analysis and narrative analysis. In: H. Reis & C. Judd (Eds.), *Handbook of research methods in social and personal psychology*. Cambridge: Cambridge University Press.
- Stables, A., & Goodwyn, A. (2004). *Learning to read critically in language and literacy*. London: Sage Publications.
- Sternberg, R. (1986). A triangular theory of love. *Psychological Review*, 93(2), 119-135.
- Stockman, F., & Doreian, P. (1997). Evolution of social networks: Processes and principles. In: P.

- Doreian & F. Stockman (Eds.), *Evolution of social networks*. London: Routledge.
- Teten, D., & Allen, S. (2005). *The virtual handshake: Opening doors and close deals online*. New York, NY: American Management Association.
- Thyer, B. (2001). *The handbook of social world research methods*. London: Sage Publications.
- Wallace, P. (2001). *The psychology of the Internet*. Cambridge: Cambridge University Press
- Wang, P. (2004). Recommendation based on personal preference. In: Y-Q. Zhang, A. Kandel, T. Lin, & Y. Yao (Eds.), *Computational Web intelligence: Intelligent technology for Web applications*. London: World Scientific Publishing (UK) Ltd.
- Waston, G. (1982). *Learning from case studies*. London: Prentice-hall International.
- Weng, M. (2007). *A multimedia social-networking community for mobile devices*. Unpublished thesis. Interactive Telecommunications Program, Tisch School of the Arts/ New York University.
- Wilson, R., & Keil, F. (2001). *MIT encyclopedia of the cognitive sciences*. Cambridge: MIT Press.