A Web-Mediated Communication (WMC) Model
Based on Activity Theory

Koo-Won Suh
School of Management, Marketing and Employment Relations
University of Wollongong
Wollongong, NWS 2500, Australia

Paul K. Couchman
School of Management, Marketing and Employment Relations
University of Wollongong
Wollongong, NWS 2500, Australia

Jong-Won Park
Korea University Business School, Korea University
Seoul, 136-701, Korea

ABSTRACT

As corporate Web sites are becoming increasingly important marketing communication media, a communication activity via a Web site becomes a central issue among scholars and practitioners. Despite many rigorous studies, they do not provide a rich understanding of this new phenomenon. To overcome the shortcomings of previous research on the Web, we develop a conceptual model for Web-mediated communication (WMC). The model is based upon a school of social psychology, so-called activity theory. Activity theory is especially beneficial to investigate human activity related to the use of artefacts such as a Web site. The WMC model emphasises the importance of subjects' (firms and consumers) role and their social interaction in communication processes. On the basis of the model, this paper discusses future directions for further research.

Keywords: Web-Mediated Communication (WMC), Activity Theory, Social Interaction, Virtual Community, Marketspace, Computer-Mediated Communication (CMC).

1. INTRODUCTION

The Web is one of the fastest growing communication media and is increasingly being recognised as an effective marketing communication tool between firms and customers. One reason for its fast growth is the fact that a corporate Web site is a versatile communication medium for firms. For instance, a corporate Web site functions not only as advertising but also as public relations, sales promotion, customer service, and online selling [38]. What is more, a corporate Web site utilises a variety of design elements such as text, images, audio, video, etc.

Besides, the Web enjoys several advantages over passive media such as television and newspapers. It is generally agreed that the Web is basically an interactive medium, so it enables users to get more involved. Unlike television viewers, Web users can choose viewing time and order of presentation. They can browse the Web at their own pace. As a result, Web users experience feelings that they are in control [20]. Moreover, the Web also provides a real time feedback function, which ultimately enhances communication effectiveness [e.g. 6, 43].

We assume that as a corporate Web site is certainly different from traditional mass media, Web marketing communication may be far different from traditional advertising. This fact calls for the development of a new framework for studying Web marketing communication.

Computer-mediated communication (CMC) and human computer interaction (HCI) studies have provided useful implications for studying Web marketing communication. However, most of CMC researches to date have been based on a framework that was established at a very early stage of the Internet era, and have focused on a narrow scope of networked computer systems such as email and computer conferencing [43]. In general, the Internet includes various types of communication media such as email, the World Wide Web (Web), Internet Relay Chat (IRC), Newsgroup, Multiple User Dimension (MUD), and so on. Different users utilise different tools for different purposes. For instance, Papacharissi and Rubin [26] found that email was mainly used for information and entertainment, and convenience was the main reason why people preferred newsgroups and bulletin boards. By contrast, information search was the most important motive for Web use. Several schools of thought such as activity theory and uses and gratifications assume that different purposes or motives would create different kinds of human activity. Accordingly, it is needed to develop a new framework for Web-mediated communication, which reflects the distinctive characteristics of the Web.

Generally, the term Web-mediated communication is defined as the use of a Web site for communication purposes. Considering that Web sites are dominantly used for marketing purposes, we can also define the term as "the use of a Web site for marketing communication purposes." Furthermore, we use the term interchangeably with "Web-mediated marketing communication (WMC)." A corporate Web site is an electronic artefact that is accessible through millions of networked computers around the world. A corporate Web site is the place where users engage in continuous activities, and dynamic interaction occurs. One of the most appropriate methods of exploring new phenomena on the Web is activity theory [34], which is a well-established framework for analysing human activities involving the use of artefacts [13].

The purpose of this article is two fold. Firstly, we try to demonstrate a conceptual model of WMC. Employing activity theory, we try to investigate elements and structure of a communication activity. Secondly, we suggest some implications for further study of WMC. Ultimately this study will provide a conceptual foundation for the design and evaluation of a corporate Web site.

2. OVERVIEW OF ACTIVITY THEORY

Activity theory was originated from a Russian psychologist Les Vygotsky in the 1920s. Then Alex Leontjef, one of Les Vygotsky's students, further elaborated the theory. Although it has a long tradition in Russia, activity theory was lately introduced in Western countries by Scandinavian scholar Yuri Engeström in the 1980s. Thereafter, activity theory has been adopted in Europe, U.S., and Australia [8]. Activity theory has well-established theoretical foundations and has been applied in various disciplines such as Social Psychology, Education, Anthropology, Human Computer Interaction (HCI), Information System (IS), and so forth [13].

Activity theory investigates human being's interaction with the environment through human activity. Therefore, an activity is the starting point for the study of human behaviour. Activity theorists argue that human activity is not an isolated or occasional event but an interconnected entity of three basic elements: subject, object, and tools [e.g. 2]. An activity is performed by an individual or a group of people (*subject*). All human activities are driven by certain goals or purposes (*object*). An activity is usually mediated by one or more artefacts (*tools*). In other words, a human being does not directly react to the environment, but interacts with it through the use of tools and signs [40]. Figure 1 illustrates a basic form of activity theory.

Figure 1   A Basic Mediation Model
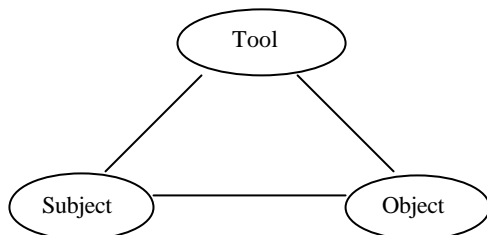
It is worth noting that activity theory suggests three important principles, which distinguish human beings from animals, (1) object-orientedness, (2) mediation, and (3) social interaction through higher functions. In the first place, activity theory emphasises that all human activities are always purposeful [13]. In other words, a human being undertakes an activity to accomplish a certain object or purpose. Then the object motivates and gives direction to a subject [19].

Secondly, a human activity is mediated by a variety of tools and artefacts [3, 14]. Tools can be classified into two basic categories: physical and psychological tools. Physical tools usually facilitate or restrict conditions for physical activities. On the other hand, psychological tools boost and activate higher mental functions. However, the distinction between physical and psychological tools is not always clear, and sometimes both reside in the same tool. For example, a corporate Web site as a

communication medium can be regarded as a physical tool. Different from television advertising, a Web site enables users to send feedback directly to the marketers. The interactivity of the Web makes it possible. As a symbolic system consisted of various signs such as text, audio, video, and images, it can also be considered as a psychological tool. These psychological tools promote a rich understanding of communication messages and shape human beings' interaction based on their experience, knowledge, and culture [35]. In this respect, tools are embedded in social-historical context. After all, tools should be understood and interpreted in relation to a human being.

Finally, Vygotsky classified human beings' mental processes into two categories: lower (natural) and higher (cultural) mental functions. Lower mental functions are biological mechanism like instincts that animals also have [12, 29]. Higher mental functions distinguish human beings from animals. Through higher mental functions a human actor engages in an activity and interacts with other human beings and the environment. In turn, social interaction develops higher mental functions [24]. Without higher mental functions, human beings cannot have an objective, and cannot create tools.

Activity theory is a general conceptual framework rather than a fully predictive theory [35]. Hence, many researchers argue that activity theory does not provide a standardized methodology for integrating the theory into practice [2, 21, 22, 35]. The lack of a uniformed method would be explained by the fact that human activities are very diverse according to their objects and tools. Nevertheless, activity theory is a powerful and flexible approach to study human activities.

3. A WMC MODEL

Basic structure of WMC
WMC is a human communication activity. Hence, WMC involves subjects, objects, tools, and a community in marketing environments (Figure 2). If we apply activity theory to a corporate Web site, we can name the activity as "Web-mediated marketing communication (WMC)", where communication activities are undertaken by firms and customers towards a certain object and mediated by a corporate Web site. and a community. A community, here, refers to a group of people who shared the same goals or purposes [8, 13].

Figure 2   Initial Structure of WMC
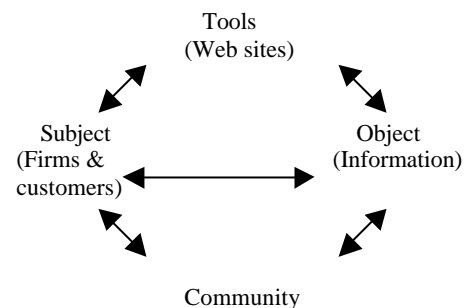
More specifically, in a marketing situation, subjects are firms and customers. Customers include a variety of target audiences, including current users and potential buyers of a firm's products, employees, dealers, stockholders, government, and the general public. Firms and customers share similar interests and common goals and they constitute a community.

To identify the common object of WMC, we need to investigate uses and gratifications studies. Uses and gratifications researchers argue that subjects of communication not as passive recipients but as active participants [7]. Subjects actively access media and messaging to fulfil their needs and motives. Accordingly, the uses and gratification perspective focuses on the subject's purposive and intentional nature of communication [15, 33, 26].

Through a survey of 279 college students, Papacharissi and Rubin [26] found that information-seeking motivation is the most conspicuous predictor of Web browsing. This result was also supported by the GVU's 10th Web user survey [11]. From a firm's point of view, informing and persuading are two universal purposes of marketing communication [e.g. 16, 37]. And a corporate Web site performs these functions [38]. In other words, firms try to deliver a wide range of marketing information to various customers via Web sites, similarly, customers want to collect product and company information from firms. After all, we can conclude that exchange of information is the most common motive of the Web community.

A corporate Web site involves two types of tools. As a communication channel and technology, a Web site is a physical tool. To deliver rich information, a Web site uses many physical artefacts such as HTML, RFT, GIF, JPEG, MPEG, JAVA, WAV, etc. Physical tools determine not only physical conditions (e.g. feedback and hyperlinks) but also the quality of psychological tools (e.g. graphic, audio, text, etc.). A corporate Web site is also a psychological system for representing symbolic information. Text, as a verbal language, is the basic element of a Web site. All other artefacts including graphic images, audio, video, and animations are also important psychological tools for generating social interaction through a rich presentation of information. Ultimately, the Web, as both physical and psychological tools, enhances the degree of social interaction and makes communication more effective through hypermedia facilities.

A WMC model
To derive a conceptual model for WMC, we need to further examine the concept of social interaction. According to activity theory, an activity is a continuous process of reciprocal interaction among subjects, object, and tools. That is, all elements of activity such as subjects, objects, and tools influence and shape each other. As a result, social interaction is generated, which in turn shapes tools, subjects, and objects (In Figure 2 through 4, double headed arrows emphasise the reciprocal relation). So it is concluded that social interaction is both a process and an outcome of a human activity. Likewise, a corporate Web site is not merely a product of new technology, but rather an output of social interaction between humans and their environments.

Another important concept is a virtual community. Basically, a community is a group of people who have common interests and goals. A corporate Web site, utilising reciprocal communication facilities such as feedback and email, creates a sense of space where subjects are directly communicating. As a matter of fact, higher mental functions generate this sense. The higher mental process is seen as social rather than individual [9, 32, 36], because it happens not within but it comes from interaction between subjects. Generally, it is assumed that the higher the degree of social interaction, the more a Web site is perceived as a real community [e.g. 4]. As a result, the boundary between a Web site and a community is blurred and both merge into one domain (Figure 3). We may call a virtual community a *marketspace* to differentiate it from a *marketplace*, a physical community [30].

Figure 3   Revised Structure of WMC
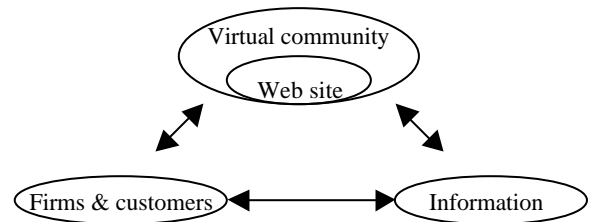
Customers interact within a virtual community and feel virtual reality. Both virtual reality and a virtual community are outcomes of higher mental functions. Within a community, social ties or bonds exist among firms and customers. Hence, community can be regarded as a network of social ties among firms and customers. Social ties abolish physical distance, instead, it allows psychological distance. Ideal types of social ties may be friendship or partnership, because they are based on mutual understanding and respect that are basic principles of effective communication. This notion implies that social ties (e.g. friendship, partnership, or relationship) can be critical constructs for WMC studies.

From a firm's point of view, an eventual purpose of a corporate Web site is selling products or building relationships with customers. To assess Web effectiveness, consumer attitude is the key outcome, which explains higher mental processes and derives ultimate consumer behaviour [e.g. 42]. However, outcomes of the Web-mediated communication activities are not consumer attitudes. Various types of outcomes including any change of tools, firms, customers, motives, Web pages, etc can be topics of Web effectiveness.

Figure 4 illustrates the overall process of WMC. From this model we can finally define WMC as an exchange process of social interaction between firms and customers mediated by a Web site and a virtual community for the exchange of information. This definition implies that communication is not a single exchange of information but also an exchange of social interaction.

Figure 4   A WMC Model
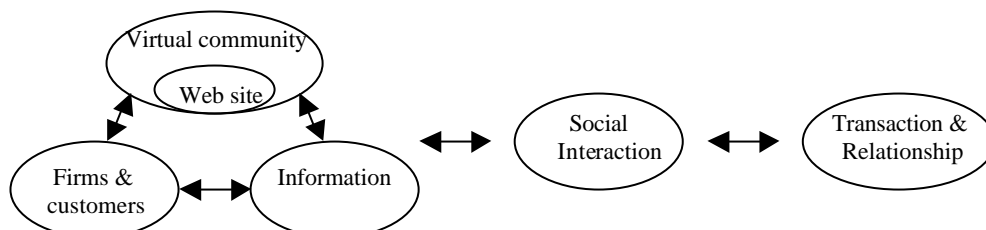
4. DISCUSSION

With the conceptual model of WMC we have constructed based on activity theory provides some significant implications for the study of the Web in many respects. To begin with, a WMC model provides different perspectives compared to traditional communication models. The most popular communication model is the information processing model, which defines communication as the message transmission process. In addition, the direction of transmission is always from the sender (firms) to the receiver (consumers, they are often called "recipients"). Furthermore, although there is a feedback loop, it is asynchronous and performed through other media like telephone and customer surveys. On the contrary, the WMC model suggests that communication is the process of the mutual exchange of social interaction between firms and customers. There is no distinction between the sender and the receiver, and consumers are called "participants" in communication processes.

Secondly, the model implies the important role of individual differences. As we had already discussed, different objects derive different activities. As a result, consumers' needs and motives should be considered in the study of WMC. Besides, activity theory is premised on individual differences in social learning. This idea is reflected in Vygotsky's [40] zone of proximal development (ZPD), which can be interpreted as the difference between Web user's actual communication ability and potential ability. ZPD varies from person to person, and it can be developed through social interaction. The Web is a new media and use of the Web can be seen as a learning situation. It is undoubted that individual differences have an effect on consumers' activities and social interaction. Accordingly, individual factors, such as motivation and Web literacy should be included in the study of WMC. In relation to Web literacy, novice and expert concepts would be beneficial [23, 27, 44].

In addition, the model emphasises that a corporate Web site is a virtual community, where firms and consumers interact. Many studies of CMC have shown that CMC media generate emotional relationship to an online community [e.g. 25, 31]. Although activity theory has emphasised the importance of both cognitive and affective sides of higher mental functions in the social-historical context [39, 41], affective side of human interaction has long been neglected in communication studies [e.g. 1, 5, 28]. Activity theorists postulate that human thought cannot be understood without deliberating on human affect or emotion. In Vygotsky's works, participant's emotional or affective aspect of social actions is termed "*perezhivanie*" [18]. As a critical feature of a human activity, the inclusion of both rational and emotional aspects of social interaction will provide answers to the question "why" outcomes result from communication activities.

5. CONCLUSIONS

The Web presents new phenomena in communication. For instance, Web users are more active than traditional television viewers. The Web uses hypermedia and multifunction. Activity theory best explains this new phenomenon. This study proposes a conceptual framework of WMC based on activity theory. We identify that WMC is a process of reciprocal interaction between humans and their environments. A corporate Web site is not a simple distribution channel of information, rather it is a virtual community where firms and customers actively exchange information and relationships. Therefore, WMC is not regarded as human-computer interaction but human-human interaction. Papacharissi and Rubin [26] argue that the Web is a socio-cultural network for informational and social interaction. This notion implies that Web studies should be conducted in relation to both information needs and social relationships. This parallels with marketing communication function [e.g. 16]. After all, effective Web design should be aimed at persuading and building relationships with customers through a virtual community.

The paper implies that a Web design process is not a simple allocation of hypermedia elements but a purposeful activity. The comparison of these two jobs can be described by informative and communicative concepts [10]. The former refers to a simple allocation of information without intention. On the contrary, communicative design is an intended and planned behaviour of firms to influence customers. Web design requires well-prepared plans from a semiotics perspective, which is the study of sign systems. Hence, it involves selecting and combining various tools and modes of representation. Television commercials are thirty-seconds or fifteen seconds and can only tell one thing about a product or service [17]. Once TV commercials are broadcast, consumers cannot access them again. On the other hand, a corporate Web site is able to deliver huge volumes of information with unlimited storage. In that sense, Web design is much more complex than traditional advertising. Web semiotics is a study area to be developed in the near future.

In relation to evaluation of a corporate Web site, it should be noted that social interaction is the critical indication of outcomes of communication activity. Accordingly, future research a special effort should be made to speculate on rational and emotional aspects of social interaction in WMC.

6. REFERENCES

[1] A. Aboulafia, E. Gould, and T. Spyrou, "Activity Theory Vs Cognitive Science in the Study of Human-Computer Interaction", **Proceedings of the IRIS (Information Systems Research Seminar in Scandinavia) Conference**, Gjern, Denmark, 1995.

[2] L. Bannon, "Activity Theory", 1997, [Online] Available at http://www.sv.cict.fr/cotcos/pjs/TheoreticalApproaches/Activity/ActivitypaperBannon.htm.

[3] L. J. Bannon, and S. Bodker, Beyond the Interface: Encountering Artifacts in Use. In: J. Carroll, ed. **Designing Interaction: Psychology at the Human-Computer Interface**. New York: Cambridge University Press, 1991, pp. 227-253.

[4] A. Benschop, "Peculiarities of Cyberspace: Building Blocks for an Internet Sociology", 2002, [Online] Available http://www.pscw.uva.nl/sociosite/websoc/introE.html.

[5] R. T. Craig, "Communication Theory as a Field", **Communication Theory,** Vol.9, No.2, 1999, pp. 119-161.

[6] A. R. Dennis, and S. T. Kinney, "Testing Media Richness Theory in the New Media: The Effects of Cues, Feedback and Task Equivocality", **Information Systems Research,** Vol.9, No.3, 1998, pp. 256-274.

[7] J. Eighmey, and L. McCord, "Adding Value in the Information Age: Uses and Gratifications of Sites on the World Wide Web", **Journal of Business Research,** Vol.41, No.3, 1998, pp. 187-194.

[8] M. Ellison, and G. M. McGrath, "Activity Theory and Process Modelling", **Proceedings of the 1998 Information Resources Management Association (International) Conference**, May 17-20, Boston, Massachusetts, 1998.

[9] C. Fernyhough, "The Dialogic Mind: A Dialogic Approach to the Higher Mental Functions", **New Ideas in Psychology,** Vol.14, No.1, 1996, pp. 47-62.

[10] J. Gahagan, **Interpersonal and Group Behaviour**, London: Methuen, 1975.

[11] Georgia Tech Graphics, Visualization, and Usability Center, "GVU's 10th WWW User Survey", 1998, [Online] Available http://www.gvu.gatech.edu/user_surveys/survey-1998-10.

[12] B. Gindis, "Disabled Child in the Sociocultural Milieu: Vygotsky's Quest", **School Psychology International,** Vol.16, No.2, 1995, pp. 155-166.

[13] H. Hasan, "The Mediating Role of Technology in Making Sense of Information in a Knowledge-Intensive Industry", **Knowledge and Process Management,** Vol.6, No.2, 1999, pp. 72-82.

[14] V. Kaptelinin, Activity Theory: Implications for Human-Computer Interaction. In: B. Nardi, ed. **Context and Consciousness: Activity Theory and Human-Computer Interaction**. Cambridge, MA: MIT Press, 1996, pp. 107-110.

[15] B. K. Kaye, "Uses and Gratifications of the World Wide Web: From Couch Potato to Web Potato", **The New Jersey Journal of Communication,** Vol.6, No.1, 1998, pp. 21-40.

[16] P. Kotler, **Marketing Management: Analysis, Planning, Implementation, and Control,** 10th ed., Englewood Cliffs, NJ: Prentice-Hall, 2000.

[17] W. Leiss, S. Kline, and S. Jhally, **Social Communication in Advertising**, Sydney: Methuen, 1986.

[18] H. Mahn, and J. Vera, "Developing the Affective ZPD", **Proceedings of the Conference for Sociocultural Research**, Caminas, Sao Paulo, Brasil, July 16-20, 2000.

[19] D. A. Mappin, "Edpy 597: Advanced Instructional Design", 2000, [Online] Available http://www.quasar.ualberta.ca/edpy597/Modules.module15.html

[20] A. Markham, **Life Online: Researching Real Experience in Virtual Space**, Walnut Creek, CA: Altamira Press, 1998.

[21] D. Mwanza, "Mind the Gap: Activity Theory and Design", **Proceedings of the CSCW 2000 Conference**, December 2-6, Philadelphia, Penn, 2000.

[22] B. Nardi, Studying Context: A Comparison of Activity Theory, Situated Action, and Distributed Cognition. In: B. Nardi, ed. **Context and Consciousness: Activity Theory and Human-Computer Interaction**. Cambridge, MA: MIT Press, 1996, pp. 69-102.

[23] D. Newman, Functional Environments for Microcomputers in Education. In: M. Cole, Y. Engestrom, O. Vasquez, eds. **Mind, Culture, and Activity: Seminal Papers from the Laboratory of Comparative Human Cognition**. Cambridge, MA: MIT Press, 1997, pp. 69-102.

[24] T. Nicholl, "Vygotsky", [Online] Available http://www.massey.ac.nz/~alock/virtual/trishvyg.htm.

[25] C. Ogan, "Listserver Communication During the Gulf War: What Kind of Medium Is the Electronic Bulletin Board?" **Journal of Broadcasting and Electronic Media,** Vol.37, No.2, 1993, pp. 177-196.

[26] Z. Papacharissi, and A. M. Rubin, "Predictors of Internet Use", **Journal of Broadcasting & Electronic Media,** Vol.44, No.2, 2000, pp. 175-196.

[27] D. Peal, and B. Wilson, Activity Theory and Web-Based Training. In: B. Khan, ed. **Web-Based Training**. Englewood Cliffs, NJ: Educational Technology Publications2001, pp. 147-153.

[28] J. P. Peter, and J. C. Olson, **Consumer Behavior and Marketing Strategy,** 2nd ed., Homewood, IL: Irwin, 1990.

[29] C. Ratner, Historical and Contemporary Significance of Vygotsky's Sociohistorical Psychology. In: R. Riever, K. Salzinger, eds., **Psychology: Theoretical-Historical Perspectives**. Washington DC: American Psychological Association, 1998, pp. 455-473.

[30] J. F. Rayport, and J. J. Sviokla, "Managing in the Marketspace", **Harvard Business Review,** Vol.72, No. November-December, 1994, pp. 141-150.

[31] H. Rheingold, **The Virtual Community: Homesteading on the Electronic Frontier**, Reading, MA: Addison-Wesley, 1993.

[32] G. Riva, and C. Galimberti, "Computer-Mediated Communication: Identity and Social Interaction in an Electronic Environment", **Genetic, Social and General Psychology Monographs,** Vol.124, No.1998, pp. 434-464.

[33] A. M. Rubin, "Audience Activity and Media Use", **Communication Monographs,** Vol.60, No.1, 1993, pp. 98-105.

[34] M. Ryder, "The World Wide Web and the Dialectics of Consciousness", **Proceedings of the 4th Congress of the International Society for Cultural Research and Activity Theory**, June 7-11, Aarhus, Denmark, 1998.

[35] M. Ryder, "What Is Activity Theory?", 2001, [Online] Available http://carbon.cudenver.edu/~mryderlitic_data/act_dff.html.

[36] A. Saito, "Social Origins of Cognition: Bartlett, Evolutionary Perspective and Embodied Mind Approach", **Journal for the Theory of Social Behaviour,** Vol.26, No.4, 1996, pp. 399-422.

[37] T. A. Shimp, **Advertising, Promotion, and Supplemental Aspects of Integrated Marketing Communications,** 4th ed., New York: The Dryden Press, 1997.

[38] K. Suh, P. K. Couchman, and D. Lee. Functions of a Corporate Web Site: A Cross-National Comparison. Unpublished Manuscript, University of Wollongong, 2002.

[39] L. S. Vygotsky, **Thought and Language**, Cambridge, MA: MIT Press, 1962.

[40] L. S. Vygotsky, **Mind in Society: The Development of Higher Psychological Processes**, Cambridge: Harvard University Press, 1978.

[41] L. S. Vygotsky, The Problem of the Environment. In: R. van der Veer, J. Valsiner, eds., **The Vygotsky Reader**, Cambridge, MA: Blackwell, 1994, pp. 338-354.

[42] S. Ward, Consumer Behavior. In: C. R. Berger, S. H. Chaffee, eds., **Handbook of Communication Science,** Newbury Park, CA: Sage, 1987, pp. 651-674.

[43] J. B. Walther, and J. K. Burgoon, "Relational Communication in Computer-Mediated Interaction", **Human Communication Research,** Vol.19, No.1, 1992, pp. 50-88.

[44] J. Wertsch, The Zone of Proximal Development: Some Conceptual Issues. In: B. Rogoff, J. Wertsch, eds., **Children's Learning in the "Zone of Proximal Development",** San Francisco, WA: Jossey-Bass, 1984, pp. 7-18.