An Analysis of the Increasing Importance of the Role of the Receiver in the Communication Process

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This paper examines the concept of information dissemination as it applies to the role and importance of the receiver in the communication process. Much of the prior research on information dissemination links a sender's message to a receiver, usually through the mass media and selective exposure, often mapped against various needs that prompt receivers to select particular media. This article suggests the new media technologies have provided the public with many more information choices than ever existed previously, and these technologies have empowered receivers to the point where they now can play a much greater role in the dissemination of information. In many situations today receivers are setting the agenda for selecting the information they receive rather than having the mass media do this for them.

BACKGROUND LITERATURE

Since the earliest research on the process of communication was published nearly three-quarters of a century ago, many scholarly models have suggested information dissemination begins with the sender. More than half a century ago the works of classic communication scholars such as Lasswell, Schramm, Hoveland, Katz, Lazarsfeld, Shannon and Weaver bear this out.

Lasswell's (1948) classic paradigm model posed the question, "Who says what in which channel to whom with what effect?" Essentially, Lasswell merely identified the key elements of the communication process but did not link them together with any specificity. Schramm (1954), who did much to enhance the communication discipline as a legitimate behavioral sciences field, provided solid research grounding to the sender-message-receiver models. Schramm also was perhaps the first scholar who tried to study a unified field of communication, and originally did not distinguish between mass communication and human communication.

Katz and Lazersfeld (1954) found that information flows from the sender, through the mass media and then to opinion leaders before being disseminated to a mass audience. This research stressed the important role people played in information dissemination and reported that voters were more influenced by their friends during political campaigns than by the news media. Berelson (1951) extensively studied media content and his research led to additional support for the opinion leader concept (Berelson, Lazarsfeld, & McPhee, 1954). The work of scholars such as Berelson, Katz and Lazarsfeld led to development of the *two-step flow theory* of communication suggesting leaders in various areas of expertise get information from the mass media and then filter it along to other people. However, more recent research finds that dissemination might not be that simple, particularly the work of Rogers (1995) who developed a more generally accepted *multi-step model*. Roger's theory is similar to that discovered by Katz and Lazarsfeld but admits to many more possibilities.

Shannon and Weaver (1949) introduced an information theory model that standardized basic communication terminology, including the introduction of terms such as receiver, noise and feedback. Unfortunately, as critics have pointed out, this

model oversimplified the communication process and led to a linear and unidirectional paradigm that deemphasized important components including feedback (Reardon & de Pillis, 1996). Hoveland, Lumsdaime and Sheffield (1949) researched the relative effects of communication on opinion change and found what they called the *sleeper effect* where the impact of persuasive messages generally tended to decrease over time as receivers are more likely to remember parts of messages after forgetting the source. Hovland, Janis and Kelly (1953) examined one-sided versus two-sided communications dealing with presentations after part of their audiences had been exposed to counter arguments. Many of these early research projects also focused more on what audiences were reading or listening instead of trying to measure the impact of media messages.

In the late 1940s and 1950s a variety of relatively crude theories developed out of the presumption that certain politicians and governments had effectively used mass communication messages to manipulate the world into World War II (Greenberg & Salwen, 1996). These included the *hypodermic needle* or *bullet theory* that suggested the mass media had a direct, universal and massive influence on most of its audiences.

Much of this early research on information dissemination was conducted by sociologists and scholars from other behavioral sciences. Greenberg and Salwen (1996) attribute this to "journalism education's confused identity and unwillingness to be at the vanguard of mass communication theory and research during the 1940s, 1950s, and much of the 1960s, when the systematic study of mass communication blossomed." (p. 67). Indeed, none of the scholars referenced to this point in this paper held journalism or communication faculty appointments. A similar sort of problem presented itself in public relations education during earlier years when the emphasis was much more vocational than scholarly. Many of the early public relations educators were practitioners who had "retired into teaching," and placed much more emphasis in teaching one-way communication such as publicity and public information than they did exploring two-way communication questions such as how members of strategic target audiences might prefer to receive particular messages.

AGENDA SETTING

Communication became a more established field of academic study during the 1970s. About this time, McCombs and Shaw (1972) embarked on a major research project that examined how the news media potentially structure issues for the public. Building upon the work of Lippman (1921) who pointed out that because the environment is too big and complex, the public responds to "the pictures in our heads," and not to actual events in the environment, McCombs and Shaw embarked on what became their agenda setting theory.

Although Lippman (1921) theorized that the mass media — basically newspapers and magazines at the time — helped people create views of what was happening in the world, Lippman made it clear that he understood the press often provided incomplete and distorted pictures. It wasn't until 1968 when the first empirical test was conducted of Lippman's thesis when McCombs and Shaw examined message dissemination during the 1968 presidential election. Previous studies about information flow and elections had led to what some called a *limited effects model* because findings reported that exposure to political campaign information had minimal impact on the public's voting intentions (Lazarsfeld,

Berelson & Gaudet, 1948; Berelson, Lazarsfeld & McPhee, 1954). The limited effects model suggested people made voting decisions based more upon social groups and their predispositions than they did on media coverage. As Klapper (1960) wrote more than four decades ago, "mass communication ordinarily does not serve as a necessary and sufficient cause of audience effects, but rather functions among and through a nexus of mediating functions and influences" (p.8).

In challenging existence of the *limited effects model*, McCombs and Shaw said agenda setting exists because the news media must be selective in reporting the news. As Shoemaker (1996) states, "One of the most enduring areas of research in mass communication is media gatekeeping – the process by which countless messages are reduced to the few we are offered in our daily newspapers and television news programs" (p. 79). McCombs and Shaw (1972) found that news editors and broadcasters, "play an important part in shaping our social reality as they go about their day-to-day task of choosing and displaying the news (p.5)." They reported that there are two levels of agenda setting. One that involves general issues and the second that involves parts or aspects of those issues that give people a way to frame these issues that make up public and media agendas. Much of agenda setting analysis compares these two agendas and explores dynamics that account for linkages between them (McCombs & Bell, 1996). Other challenges of earlier theories such as the limited effects model and the bullet theory suggest the media's effect is much more moderate (Greenberg & Salwen, 1996).

IS THE MEDIUM THE MESSAGE?

Marshall McLuhan's (1964) work four decades ago strongly argued that the most important component to a communication message was the medium via which it was delivered. Long before development of the Internet, McLuhan (1967) theorized that the media were creating a "global village" by making it possible for millions of different people from all four corners of the world to communicate with nearly any spot on the globe. McQuail (1987) later followed up the work of McLuhan by suggesting the media represented "windows," "interpreters," "platforms," or "carriers" that convey information. Media scholars have explored links between both the media and social structures and smaller personal and individual effects (Rosengren, 1994). Littlejohn (2002) and McQuali (1987) both point out that media theorists recognize two aspects of mass communication – one that's essentially a media-society link and the other that focus upon media and audiences.

OTHER SIGNIFICANT THEORIES

Perhaps several additional theories are worth mentioning here. *Uses and gratifications theory* focuses upon the audience instead of the message and suggests individuals select media in ways that gratify personal needs (Katz, Blummer and Gurevitch, 1974). This theory assumes that audience members are goal-directed and active. It suggests receivers of information select media to meet their needs. As Littlejohn (2002) notes, this theory also assumes receivers of media messages orient themselves based upon their own attitudes. It suggests the media represent only one way of meeting personal needs, and points out individuals also might meet these needs in other ways, not just through the media.

In work growing out of exploration of the *limited effects theory*, Klapper (1960) reported that mass communication might not be a necessary and sufficient cause of audience effects. He suggested the media are only a contributing cause,

mediated by a variety of other variables. This has led to development of the *powerful effects theory* which believes the media have commanding effects. The main advocate of this theory is Noelle-Neumann (1984) who also is the principal proponent of the *spiral of silence theory* that shows how interpersonal and media communication can operate together. Noelle-Neumann says in the *spiral of silence theory* that people will express their opinions when they think they are popular, but will remain quiet when they do not believe others support their views.

METHOD

The author used longitudinal analysis in the form of a decade-long trend study to gather data. Trend studies explore topics over time with different groups of respondents. As Wimmer and Dominick (2003) suggest, trend studies are valuable in describing long-term changes in a population because they can establish a pattern over time to detect shifts and changes in some event. They also suggest another advantage of trend studies is that they permit comparison of research data originally gathered for other purposes.

Data for the major part of this research came in the form of information gathered in annual interviews with employees of a large, international, manufacturing company based in the United States but having a strong, global presence. Most of the information was collected during focus groups and personal interviews with employees based at a large plant facility the Southeastern US. The author interviewed employees at this plant during every year of the study. Interviews also were conducted periodically, but not every year, at another plant facility in the Southwestern US. This second facility became a control group for purposes of this research. The primary facility reported on in this paper is located in a suburb of a major city while the secondary plant is located within a large metropolitan area in a different part of the country. All of the interviews and focus groups were part of a larger public relations consulting project designed to improve employee communication throughout the company. The author was present at, and participated in, all interviews and focus groups.

The organization is a large and successful Fortune 50 company with more than 130,000 employees worldwide and had 2004 sales of more than \$35 Billion. There was an average of more than 17,000 employees at both of the plants during the decade in which data were gathered. The company agreed to participate in the research providing it was not identified.

Although subjects were asked a wide of variety of questions in connection with the company's employee communication needs, the research reported on in this paper focused upon responses to these two questions – one asking about information sources and how frequently they were used and the other inquiring about credibility of these sources. The specific questions were: (a) "What sources do you use to acquire information about what's going on at this company and how frequently do you use each of these sources? And, (b) How credible to you consider each of these sources to be?

RESULTS

The employees who participated in the research project identified ten major information sources. They were: the company's publications, the company's Internet and Intranet websites, traditional written communications distributed via internal

mail or physically placed on bulletin boards within the plant, electronically distributed written communication memos distributed to employees via e-mail, a major metropolitan daily newspaper, a community daily newspaper, rumors and the grapevine, information communicated by union representatives and officials, television news broadcasts and radio news programming.

Frequency of use scores and perceived credibility scores were assigned by the researcher during each year data were gathered. These scores were based on a 10-point scale where "0" represented no use at all and "10" indicated the most possible use.

As Table One shows internal e-mail communication and the company's Internet and Intranet websites have been the employees' most frequently used sources for information about the company for the past two years. With the exception of radio and television news broadcasts, whose frequency of use has remained relatively constant during the decade data were gathered, the use of all other information sources has decreased as use of e-mail and the company's websites have increased.

Table 1
Frequency of Use Scores

	Company Publications	Internet Intranet	E-mail Memos	Traditional Memos	Metro Paper	Local Paper	Rumors/ Grapevine	Union Info	TV	Radio
2004	6	7	8	5	4	5	5	4	4	3
2003	6	7	7	5	4	6	6	4	4	3
2002	6	6	6	6	5	7	7	4	4	3
2001	7	4	5	6	5	7	8	5	5	3
2000	6	1	2	6	5	7	9	5	4	3
1999	5	1	1	5	5	8	9	5	3	3
1998	7	1	1	5	6	8	9	6	5	3
1997	7	-	-	6	6	9	9	6	4	3
1996	7	-	-	7	7	9	9	6	5	3
1995	7	1	ı	7	7	9	9	6	4	3

Without question, the increased use of internal e-mail communication and the company's Internet and Intranet websites is significant. The Intranet use increased dramatically when the company made this website the homepage on most computers within the plant. E-mail memos and frequent e-mail updates have developed into a popular communications feature that has eliminated some of the need for traditional memos that were typed and distributed through internal mail delivery.

It should be pointed out that this research focused upon the media or category delivering information to employees rather than upon the actual sender of the information. In some previous studies of this nature the immediate supervisor has been found to be the preferred and most credible source for an organization's internal communication. Although some of the study's subjects did acknowledge receiving information from their supervisor, the way data were gathered during the ten-year span of this research did not permit consideration of immediate supervisors as media for measurement purposes.

Results displayed in Table 2 indicate the perceived credibility of internal e-mail communication and the company's Internet and Intranet websites by employees has increased to the point where these media now have more believability than any of the other information sources.

Table 2
Credibility Rankings of Scores

	Company Publications	Internet Intranet	E-mail Memos	Traditional Memos	Metro Paper	Local Paper	Rumors/ Grapevine	Union Info	TV	Radio
2004	4	7	8	5	5	6	2	4	4	2
2003	5	7	8	4	4	7	3	4	3	3
2002	5	6	7	5	5	7	2	4	3	3
2001	4	6	7	4	4	8	3	5	4	2
2000	4	5	6	5	5	9	4	5	3	2
1999	3	4	5	5	4	8	4	6	3	3
1998	4	3	5	5	4	8	3	7	2	4
1997	3	-	ı	6	5	10	4	6	3	2
1996	3	-	-	6	4	10	5	7	3	3
1995	3	-	ı	6	5	10	5	7	4	2

In some of these categories there is a correlation between media use and credibility. In some cases this is natural because people generally prefer to use media that have credibility as opposed to media without it. Credibility scores for internal e-mail memos and the company's Internet and Intranet websites have increased dramatically since they were first listed as information sources by employees in 1998. To some extent, the increase in the credibility of Intranet, Internet and e-mail have had an impact on the credibility of company publications and traditional internal memos. However, they appear to have had an even more pronounced negative effect on the credibility of the local daily newspaper, rumors and the grapevine, as well as information coming from the company's various unions.

<u>Company Publications</u>: Long the workhorse of employee communications within this and many other companies, company publications understandably played a more prominent role prior to introduction of the new technologies. Given the long lead time it takes to write, edit and print company publications they've never had immediacy as a strength. Use scores and credibility measures for company publications have remained fairly constant during the ten years of this trend study.

<u>Traditional Memos</u>: Although used extensively ten years ago for internal communication, many traditional memos have been replaced by e-mail messages. They're still used quite regularly due to legal and traditional reasons in the company participating in this study. Credibility scores of these memos have remained fairly constant during the decade covered in this research.

Metro Daily Newspaper: The metropolitan daily newspaper in the case at hand is one of the nation's major dailies – it's currently ranked in the top 20 in the nation in terms of circulation and has more than 500,000 subscribers. Although credibility scores concerning this medium and information about the company have remained fairly constant during the past ten years, use scores have dropped considerably.

Local Daily Newspaper: This community daily newspaper has serves the same suburban county of this large metropolitan area for nearly 140 years. It's current circulation is about 20,000. The company that's the focus of this research is far and away the largest employer in the community and the newspaper has provided extensive coverage of the company for more than half a century. At many times this coverage has been critical of the company and the unions have used the newspaper to facilitate rallying calls to their members. Ten years ago, when employees were asked to name their most prominent source for information about the company, the only serious competition this local daily newspaper had was the employee grapevine. It was also considered to be an extremely credible news source. Many times in the mid-1990s, the company failed to effectively communicate with its employees on important matters before they received another side of the story from this local daily newspaper. The company has used the new technologies fairly effectively in recent years and today they outrank the local daily newspaper in terms of both frequency of use and credibility.

Internet, Intranet and E-Mail: The company's internal and external websites are now used on a frequent basis by employees to acquire information about the company. The same holds true for e-mail communication, especially messages from managers and supervisors to employees. The company has effectively used these new technologies to inform employees about information most previously acquired from other news sources - especially the local daily newspaper. When an newsworthy event happened ten years ago, the company usually didn't comment on it until a company publication came out two weeks later. In those days employees heard most things first from either the grapevine or the local daily newspaper. Today, more often than not, the company communicates effectively with employees via the Intranet or e-mail prior to publication of the next morning's local daily newspaper. This has dramatically changed not only how employees receive information about what's going on within the company, but also how credible these employees consider other information sources to be. Many employees interviewed in recent years have made it clear that they now make a conscious effort to seek out information from the company websites.

Union Information: Unions always have played a major role in this company and information disseminated by unions always will have a significant impact in what information employees receive and believe. As findings in this study indicate, it is suffice to say that the arrival of the new technologies have seen employees use union- generated information less frequently as an information source and also have had a negative impact on the perceived credibility union information has with employees.

Local Television and Radio: The use of local television and radio news broadcasts as information sources about what's going on within the company have remained relatively constant during the ten years measured in this study. The same can be said about the perceived credibility of these radio and television news broadcasts.

Control Group Impact: Although employees at the control group location were not interviewed during all ten years of this study, they have been interviewed for the past five years. Few major differences were detected between employee thoughts, opinions and reactions at the primary site vis-à-vis the control group location. The major difference in terms of information sources between the two sites is that the employees at the control group plant do not have a small, community, daily newspaper aggressively covering the company as is the case with the primary plant.

DISCUSSION

The great amount of information available today is making receivers extremely selective in choosing sources from which they acquire news and other information. Implications of this reality are massive in the field of public relations where practitioners now need to try and develop relationships with potential receivers of information in ways similar to what used to be the norm in certain aspects of media relations. Results of this study clearly show that the development of new technology information sources – such as e-mail, Internet and Intranet – during the past seven or eight years has had a significant impact not only upon how employees receive information about what's happening at their company, but also how they view the credibility of these various information sources.

A decade ago most of this company's employees had to wait for information to come to them. In those days, senders and media channels played a much more significant role in the information dissemination process than receivers. The advent of the new technologies has provided these employees – the receivers – with additional information sources, and results of this study clearly indicate that many employees are empowering themselves as receivers.

Also extremely important in the case at hand is the reality that for centuries communication research has pointed out that people have a huge tendency to believe whatever side of a story they hear first. Labaree's (1966) thorough account of the Boston Tea Party points out one of the reasons this event was so successful was because the "Sons of Liberty" told everyone what they were going to do and why they were going to do it before they dumped the British tea into Boston Harbor. Cutlip, Center and Broom (2000) say the Boston Tea Party was a classic "staged event" because it attracted public attention and provoked discussion leading to the formation of unstructured public opinion. Newson, Turk and Kruckeberg (2003) suggest that the Boston Tea Party actually was a "hooligan stunt" that was turned into effective press agentry.

One of the major reasons why the local daily newspaper studied in this trend research project was used more and perceived to be more credible a decade ago than it is today is because it once was getting information to the company's employees before the company could communicate with them. The new technology media – Internet, Intranet and e-mail communication – have provided the company with communication vehicles that now are able to reach the employees before they get the next day's copy of this newspaper. This factor of immediacy, coupled with effective content use by the company, has had a significant and positive impact on the use and perceived credibility of the new technology media. At the same time, it has led to a slightly negative impact on the use and perceived credibility of the local daily newspaper.

The immediacy factor also has played a huge role in minimizing the use of the rumor mill and the grapevine for employee information. Although never considered to be very credible, these information sources were much more prevalent in the days when it was difficult for the company to respond quickly to employee concerns. SUMMARY

This trend study examined information sources employees of a major corporation used to find out what was going on at their company during a ten-year period from 1995 through 2004. The research also studied the perceived credibility of each information source.

Ten major information sources were identified: the company's publications, the company's Internet and Intranet websites, traditional written communications distributed via internal mail or physically placed on bulletin boards within the plant, electronically distributed written communication memos distributed to employees via e-mail, a major metropolitan daily newspaper, a community daily newspaper, rumors and the grapevine, information communicated by union representatives and officials, television news broadcasts and radio news programming.

Although the local daily newspaper, rumors and the grapevine were the most frequently used media by employees ten years ago, internal e-mail communication and the company's Internet and Intranet websites have been the employees most frequently used sources for information about the company during the past few years. With the exception of radio and television news broadcasts, whose frequency of use has remained relatively constant during the decade data were gathered, the use of all other information sources has decreased as use of e-mail and the company's websites have increased.

Results suggest that the development of new technology information sources – such as e-mail, Internet and Intranet – during the past seven or eight years has had a significant impact not only upon how employees receive information about what's happening at their company, but also how they view the credibility of these various information sources. These new media have empowered the employees to the point where they now can – and do – play a much more dominant role in the communication process. In many situations today, these employees are setting the agenda for selecting the information they receive rather than having the mass media, or other information sources, do this for them.

The advent of the new technologies has provided these employees with additional information sources, and results of this study clearly indicate that many employees are empowering themselves as receivers. Results find, based upon this study at least, that receivers now are playing a more significant role in the communication process.

REFERENCES

Berelson, B. (1952). *Content analysis in communication research*. New York: Free Press.

Berelson, B., Lazarsfeld, P.L., & McPhee, W. (1954). *Voting*. Chicago: University of Chicago Press.

Cutlip, S.M., Center, A.H., & Broom, G.L. (2000). *Effective public relations*, 8th Ed. Upper Saddle River, NJ: Prentice-Hall.

Carter, R.F., & Greenberg, B.S. (1965). Newspapers or television: Which do you believe? *Journalism Quarterly*, 42, 29-34.

Deutschmann, P.J., & Danielson, W.A. (1960). Diffusion of knowledge of the major news story. *Journalism Quarterly*, 37, 345-355.

Festinger, L. (1957). A theory of cognitive dissonance. Evanston, IL: Row Peterson.

Greenberg, B.S. (1988). Some uncommon television images and the drench hyposhesis. In S. Oskamp (Ed.), *Television as a social issue* (pp. 88-102). Newberry Park, CA: Sage.

Greenberg, B.S., & Salwen, M.B. (1996). Mass communication theory and research: Concepts and models. In M.B. Salwen & D.W. Stacks, *An integrated approach to communication theory and research* (pp. 63-78). Mahawa, NJ: Lawrence Erlbaum Associates.

Hoveland, C.I., Lumsdaime, A., & Sheffield, F. (1949). *Experiments in mass communication*. Princeton, NJ: Princeton University Press.

Hoveland, C.I., Janis, I.L., & Kelley, H.H. (1953). *Communication and persuasion*. New Haven, CT: Yale University Press.

Hoveland, C.I. (1951). Changes in attitude through communication. *Journal of Abnormal and Social Psychology*, 46, 424-437.

Katz, E., Blummer, J., & Gurevitch, M. (1974). Uses of mass communication by the individual. In, W.P. Davidson and F, Yu, *Mass communication research: Major issues and future directions* (pp.11-35). New York: Praeger.

Katz, E., & Lazarsfeld, P.F. (1954). Personal influence. Glencoe, IL: The Free Press.

Klapper, J.T. (1960). The effects of mass communication. Glencoe, IL: Free Press.

Labaree, B.W. (1966). The Boston Tea Party. New York: Oxford University Press.

Lazarsfeld, P.L, Berelson, B., & Gaudet, H. (1948). *The people's choice*. New York: Columbia University Press.

Lasswell, H.D. (1948). The structure and function of communication in society. In L. Bryson (Ed.), *The communication of ideas* (pp. 117-130). Urbana, IL: University of Illinois Press.

Lippman, W. (1921). Public opinion. New York: Macmillan.

Littlejohn, S.W. (2002). *Theories of human communication* (7th ed.). Belmont, CA: Wadsworth.

McCombs, M.E., & Shaw, D.L. (1972). The agenda-setting function of the mass media. *Public Opinion Quarterly*, 36, 176-185.

McCombs, M.E., & Bell, T. (1996), The agenda-setting role of mass communication. In M.B. Salwen & D.W. Stacks, *An integrated approach to communication theory and research* (pp. 93-110). Mahawa, NJ: Lawrence Erlbaum Associates.

McLuhan, M. (1964). Understanding media. New York: McGraw-Hill.

McLunah, M., & Fiore, Q. (1967). The medium is the message. New York: Bantam.

McQuail, D. (1987). Mass communication theory: An introduction. London: Sage.

Newsom, D., Turk, J.V., & Kruckeberg, D. (2003). *This is PR: The realities of public relations*, (8th Ed.). Belmont, CA: Wadsworth.

Noell-Neumann, E. (1984). *The spiral of silence: Public opinion – Our social skin.* Chicago: University of Chicago Press.

Reardon, K.K., & de Pillis, E.G. (1996). Multichannel leadership: Revisiting the false dichotomy. In M.B. Salwen & D.W. Stacks, *An integrated approach to communication theory and research* (pp. 339-407). Mahawa, NJ: Lawrence Erlbaum Associates.

Rogers, E.M. (1995). *Diffusion of Innovations* (4th ed.). New York: Free Press.

Rosengren, K.E. (1994). Culture, media and society: Agency and structure, continuity and change. In Rosengren, K.E., *Media effects and beyond: Culture, socializations and lifestyles.* London: Routledge.

Schramm, .L. (ed.). (1954). *The process and effects of mass communication.* Urbana, IL: University of Illinois Press.

Shoemaker, P.J. (1996). Media gatekeeping. In M.B. Salwen & D.W. Stacks, *An integrated approach to communication theory and research* (pp. 79-91). Mahawa, NJ: Lawrence Erlbaum Associates.

Shannon, C.E. & Weaver, W.C. (1949). *The mathematical model of communication*. Urbana: University of Illinois Press.

Wimmer, R.D., & Dominick, J.R. (2003). *Mass media research: An introduction* (7th ed.). Belmont, CA: Wadsworth.