HOW USE OF THE INTERNET IMPACTS COMMUNITY PARTICIPATION AND THE MAINTENANCE OF CORE SOCIAL TIES: AN EMPIRICAL STUDY

By

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A dissertation submitted in partial fulfillment of
the requirements for the degree of

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To the Faculty of Washington State University:

The members of the Committee appointed to examine the dissertation of MICHAEL JAMES STERN find it satisfactory and recommend that it be accepted.

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Chair

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HOW USE OF THE INTERNET IMPACTS COMMUNITY PARTICIPATION AND THE MAINTENANCE OF CORE SOCIAL TIES:

AN EMPIRICAL STUDY

Abstract

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This dissertation is written in a three article format, consisting of three journal length papers preceded by an introductory chapter and description of the study methods. All three analyses are based upon information collected in a 2005 random sample mail survey of 1,315 households in a small relatively isolated metropolitan region of the Western United States.

The first chapter addresses how use of the Internet affects individuals' levels of community participation and leadership in local events and groups. Results show clearly that Internet usage does not reduce the amount that individuals participate in local community events and groups. Higher levels of Internet usage are also positively related to acting as a leader or organizer in local happenings. However, higher levels of Internet usage are also related to having more of one's closest friends and relatives living outside the local area.

The second chapter addresses how community members maintain their close social networks. Specifically, what modes of communication are used in the maintenance

of these ties and whether this varies based on whether the ties are local or not, how much people communicate and the degree that one uses the Internet. The results show that email has become a pervasive part of the way that people communicate with their closest social ties especially when these ties reside outside the local area regardless of respondents' demographic characteristics. However, the telephone remains the most used form of communication.

The final chapter addresses issues of survey design. Six experimental manipulations of survey questions are used to test whether the visual layout of the items affect respondents differently based on their level of education, age and sex. The results show that the visual layout of questions appears to affect respondents in similar ways regardless of their demographic characteristics. These results lend support to the emerging body of research concerning how the visual design of questions serves as an important source of measurement error in self-administered surveys.

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CHAPTER 1

THE INTERNET, COMMUNITY AND CLOSE SOCIAL TIES IN THE 21ST CENTURY

INTRODUCTION

The goal of sociology may be described as understanding how people interact and the consequences of their actions (Mead, 1934). As such, sociology is a discipline that deals with changing temporal realities and social change. Often this social change involves the effects of technology and sociologists have worked to understand the many ways that individuals and communities are affected.

Traditionally, the local geographic community was the most important place in people's lives (Allen and Dillman, 1998). It served as the center of people's social world. Residents were heavily invested in assuring the well-being of these places, which served as a source of identity and pride. Indeed, many people lived their entire lives in one community, with their most important social attachments including friends, family, and community associations, being centered there.

In the 20th century, rapid technological change began to tear at the fabric of these relatively independent local communities. Industrialization, urbanization, and suburbanization changed how and where people lived (Kasadra and Janowitz, 1986; Warren, 1978). They could live in one place and work in another; thus, allowing them to focus a substantial portion of their life and interests outside their area of residence. No single technological change caused this transformation; instead, it was sequence of innovations including the steam engine, railroads, telephony, automobiles, and airplanes (de Sola Pool, 1983) that allowed people to maintain social ties at distance. These changes prompted some to argue that communities could exist without propinquity (Weber, 1963), later referred to as "the community question" (Wellman, 1979; Wellman and Leighton, 1979).

The late 20th century gave witness to the rise of the information age (Dillman, 1985). Computers and Computer Mediated Communication (CMC) technologies, in particular the Internet, have provided possibilities for changing the way people communicate with one and another and engage in local and non-local activities (Hampton and Wellman, 2003). This new era is defined by two interrelated themes: instant access and networked individualism (Wellman, 2001). Instant access is achieved through the ability to use cellular telephones or Internet communications to send and receive messages at anytime regardless of location. Networked individualism refers to the ability to create one's own social network based on interests regardless of location. For the first time in history the distance barriers to maintaining strong social ties may be edging towards elimination.

Despite these changes, geographic communities are still places where people spend the majority of their lives. However, it has been suggested that the increased access to the Internet has produced the potential for people to focus their lives almost exclusively outside the local area (Kraut et al. 1998). Some have argued that use of the Internet weakens one's commitment to the local community (Nie and Erbring, 2000; Kraut et al., 1998). Conversely, others have argued that the Internet does not pull people's interests out of local communities but instead serves as a tool by which they learn and engage in local happenings. Thus, the Internet is seen as providing a new means by which to maintain local ties (Hampton and Wellman, 2003).

Local geographic communities are not monolithic entities; instead they are multi-faceted social systems (Mead, 1934; Warren, 1978). As such, it takes many different people and organizations to help the community function (Putnam, 1996). It is, in fact,

part of our heritage to act civically, a point recognized over 100 years ago by de Tocqueville as crucial to our form of democracy (Putman, 2000). In addition to local government, voluntary associations are important in the functioning and maintenance of local communities (Putman, 2000; Rotolo and Wilson, 2005). For example, in communities throughout the United States the planning of local events and the rallying of support for taking actions aimed at community change typically lies in the hands of local volunteers. Therefore, one way to analyze whether or not Internet usage is pulling people's interests out of the local community is by seeing if Internet users are more or less likely to participate in local groups and events. Furthermore, do Internet users provide leadership in these groups and help organize these events and how involved are they in participating in local actions aimed at community change? This dissertation seeks to address these questions.

The information age has been characterized as a time when social networks are more important than geographic communities (Castells, 1996; Wellman, 2001). Indeed, those with whom we interact with the most have a great impact on us; especially in terms of how and where we focus our energy (Granovetter, 1996). Whether our closest social ties, family or friends, reside locally or non-locally may tell us something about life in the information age and how people are defining their "community." For sure, the barrier to maintaining long distance affective relationships has been greatly diminished by the Internet and other CMC's (Wellman and Wortley, 2001). Therefore, a second question I address in this project is how information technologies are used in the maintenance of affective social ties. Further, I address whether use of the Internet is related to having one's affective social ties locally or non-locally.

The purpose of this dissertation is to empirically evaluate how the Internet is influencing the ways that people connect to geographic community and whether its use in contributing to the elimination of local community involvement. To do this I analyze results from a 2005 random sample survey of 1,315 residents of a small metropolitan region in the Pacific Northwest to ascertain whether people who use the Internet do so in a way that pulls their interests away from the local community. In addition, I examine one of the social mechanisms through which the Internet may be changing people's relationship to locality, i.e. the extent to which it has become the most used mode of communication for connecting to their three closest friends and relatives, regardless of where the individual might live. Together these separate analyses provide insight into how the Internet is being integrated into people's lives and the consequences of that integration. A secondary purpose of this dissertation is to provide insight into how the asking of survey questions in different formats influences people's answers, if at all. The reason for doing so is learn how we can improve measurement in self-administered questionnaires; thus, reducing measurement error.

The approach used in the writing of this dissertation is an article format. Following a general background description of the data collected for use in this dissertation, Chapter 2, each of the remaining chapters is written as a self-standing journal paper of article length. The first paper (Chapter 3) concerns whether degree of Internet usage is associated with decreases or increases in the amount that people participate in their communities and whether Internet users tend to have more of their affective social networks locally or non-locally. The second paper (Chapter 4) explores how people maintain their core social networks in the information age. The third paper in

this dissertation reports the results of question format experiments embedded in alternate versions of the data collection instrument. Each of these chapters is briefly discussed below.

Community Participation, Social Ties and Use of the Internet

Some argue that use of the Internet tends to pull people's interests away from their local area and weaken community ties (e.g., Kraut et al., 1998). Others argue that the Internet is frequently used to strengthen local ties, and is becoming a tool for helping communities organize to achieve local interests (Hampton and Wellman, 2003). In Chapter 3, I explore whether the degree to which individuals use the Internet is related to three aspects of community of involvement. First, I examine whether Internet usage is related to the number of local groups and events in which community members participate. Second, I investigate whether Internet usage is related to serving as a leader or organizer in the local community. Finally, I test whether there is an association between degree of Internet usage and the numbers of affective social ties community members have local versus non-local. The location of these communities in a region of the West that is of substantial distance from a larger population concentration, provides the opportunity to draw implications for community development in the Information age and address theoretical concerns about the effects of information technologies on communities of place and local social capital.

This paper is forthcoming in the American Sociological Association journal *City & Community*. Under the conditions of the American Sociological Association (2006) "an author of ASA copyrighted material may use her/his own without permission in any volume which s/he is the sole author or editor and is due no royalties from ASA. The

original publication must be properly cited." The paper includes Don A. Dillman, who provided funding for the project as second author. This paper appears here in the format accepted for journal publication.

Maintaining Core Social Ties in the Information Age

The number of ways that people can communicate with their social networks has changed dramatically in the past half century (Fischer, 1992). Researchers have labeled the number of choices in forms of communication available to people as the new "Media Multiplicity" (Boase and Wellman, 2006). Whereas traditionally the community was the basis for people's social interactions, meaning that most of people's closest friends and relatives resided locally and that face-to-face communication was the predominant mode of communication much has changed (Wilkinson, 1991). Today, in addition to face-to-face meetings and other more traditional means of communication such as postal mail one can use a landline telephone, cellular telephone or any number of the computer mediated communications such as email. However, little research has specifically addressed what modes of communication people use most with their most intimate ties. Chapter 4 explores what modes of communication people use most with their three closest friends and relatives with a particular emphasis on how mode of communication may vary by three factors: 1) whether the social ties are local or non-local, 2) frequency of communication, and 3) degree of Internet usage.

Visual Design, Order Effects and Respondent Characteristics in a Self-Administered Survey

Recent research on survey design has shown that small changes in the structure and related visual layout of survey questions can have effects on the way respondents

answer survey questions (Dillman, 2000; Smith, 2000; Christian & Dillman, 2004; Smyth, Dillman, Christian and Stern, 2005). This study seeks to continue this line of research. According to Schwartz (1996), when a respondent completes a self-administered questionnaire they engage in a conversation with the survey instrument. To that end, the survey instrument provides a number of different languages that help facilitate the conversation. These languages are both verbal, i.e., the words on the instrument and nonverbal, i.e., the symbols, numbers and graphical layout of the question stem or response categories.

Many of the studies interested in the effects of survey design, particularity web survey design, have used random samples of college students for the research (e.g., Christian & Dillman, 2004; Smyth, Dillman, Christian and Stern, 2005). The findings have provided support for future research; however, a limitation of the studies has been the homogeneity of the samples. College students are, by and large, educated individuals between 18 and 25 years of age. In Chapter 5, I extend the research by replicating a number of experiments conducted among university students in a general population survey such that demographic differences can be examined.

The Study

All of the foregoing analyses use data from a random sample mail survey of 1,315 households from the twin cities of Lewiston, Idaho and Clarkston, WA with a combined population of about 50,000 residents conducted between January and March 2005. The Department of Community and Rural Sociology and the Social and Economic Sciences Research Center at Washington State University financially supported this survey. The survey included 11 pages of questions concerning the degree that respondents

participated in specific local community groups and events, the amount of time they spent in such activities, and their role (e.g., leader or member). In addition, respondents were asked to report information on their three closest friends and three closest relatives including how often they communicate with each social tie, whether the tie was local or non-local (including how far from the local area they lived if they were not living locally), and what mode of communication they most often used. Respondents were also asked about their level of Internet usage.

In addition to the survey, I conducted limited participant observation in the communities and using a snowball sample a number of semi-structured qualitative interviews with local residents concerning their Internet usage and community involvement. Collection of these data was supported, in part, by funds from the Alexander Smick Scholarship awarded to the author in Fall of 2004 by the Department of Community and Rural Sociology at Washington State University. Through the analysis of these data I hope to provide insight into how information technologies are affecting the fabric local communities.

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CHAPTER 2

A 2005 GENERAL PUBLIC SURVEY OF RESIDENTS OF LEWISTON, IDAHO AND CLARKSTON, WASHINGTON

INTRODUCTION

There were three interrelated ways that I collected data for this dissertation project: participant observation, semi-structured qualitative interviews and a self-administered mail survey. The participant observation and qualitative interviews were used to learn about the community and help in the construction of the survey. The data analyzed in subsequent chapters is derived from the self-administered survey.

Participant Observation

Participation observation began in the Summer of 2004 and continued through the Fall of 2005. It involved weekly trips, on average, to the Lewiston/Clarkston valley located about 35 miles from Pullman, Washington. During this time I visited with local teachers and city administrators, and talked to individuals active in the local communities. Employees at the local Chambers of Commerce for Lewiston and Clarkston were also interviewed. In addition, I attended local events such as parades and sporting events. My purpose was to get a sense of the local community and to learn what events and groups seemed important to people or were most popular. From the early observations, I was able to make more informed decisions about what to include and exclude from the survey. The later observations provided a context to interpreting the survey data.

Semi-Structured Qualitative Interviews

The majority of the 15 semi-structured qualitative interviews were conducted from the Summer of 2004 through the Winter of 2005. I used a snowball sample based on three local contacts to construct my interview list. The interviews took on average 30 to 45 minutes to complete. Some were very informal (at a local friend's house in the

midst of a card game or at the local university) while others were more formal (at the respondent's office). The primary purpose for the interviews was to test out potential survey topics such as the importance of local groups and the use of the Internet (locally and non-locally). The interviews allowed me to gauge the likely saliency of topics to local residents. In addition to participating in the interviews, 8 of the respondents pre-tested early drafts of the survey by engaging think aloud cognitive interviews. The 10 interview questions can be found in Appendix A. In addition, I interviewed local Internet providers about the issues concerning overall Internet penetration rate and the types of changes seen in recent years.

General Public Survey

Based on the information gathered during the participant observation, qualitative interviews, and survey pre-tests two versions of a 12-page questionnaire, containing 10 pages of questions, were constructed. Each version contained the same 39 questions used to construct 215 variables. However, experimental variations of 11 questions were embedded to test the differences in question construction and visual layout for methodological effects. The only difference in appearance between the questionnaires was that one was white and the other beige, for administrative convenience and accuracy.

Because the purpose of this study was to examine the relationship between Internet usage and the ways that individuals interact and act in the community, it was important to design a survey instrument with measures that would not "feel" like a survey about Internet usage lest we lose respondents without Internet access thus increasing the likelihood of non-response error i.e., respondents differing from non-respondents in a meaningful way (Dillman, 2000). Thus, the questions concerning Internet access and

usage were embedded as part of a broader survey of local participation and community satisfaction with only a two-page section in the middle of the questionnaire being specifically designated for individuals with Internet access. The survey title was "Making Community Work in Lewiston and Clarkston."

The questionnaires were printed on 11" x 17" paper then folded in half to form 8.5" x 11" booklets. In addition a picture of the Lewiston and Clarkston valley, provided with permission by *Strength in Perspective* of Portland, Oregon, was printed on the front cover of both questionnaires. In addition we provided my contact information on the cover. The two versions of the questionnaire can be found in Appendix B.

Sampling and Specific Survey Procedures

The sample consisted of 2,000 households in the Lewiston, ID and Clarkston, WA area. The sample was divided proportionally between Lewiston and Clarkston with 1,260 surveys sent to Lewiston (population 30, 904 according to Census 2000) and 740 (population 7,337 according to Census 2000) sent to Clarkston. We obtained our sample with names and mailing addresses from Genesys Sampling Systems. The sample frame consisted of individuals with current telephone listings. The rural nature of the region suggests significantly fewer unlisted numbers than exist in larger cities (Lavrakas, 1987, p. 33) although the exact proportion could not be ascertained.

The final versions of the questionnaires were provided to the Social and Economic Sciences Center (SESRC) at Washington State University on January 10, 2005The final questionnaires, the project design, and the project procedures were then sent to the Institutional Review Board (IRB) at Washington State University for human subjects review. We received approval from IRB on January 19, 2005 after an expedited

review (#8312A). SESRC also conducted pretests of the questionnaires prior to mailing. Their pretest was conducted "to ensure that the questionnaire was understandable for the respondents and to answer several questions to make sure the survey would progress smoothly" (Data Report SESRC, 2005: 4).

We applied principles from the Tailored Design Method (TDM) in our survey implementation processes (Dillman, 2000). A key element of the TDM survey procedure was to implement carefully designed and timed mailings to the survey sample respondents. The goal of data collection was to have a completed questionnaire for each individual listed in the sample. Early questionnaires included a respondent ID number to track whether it had been completed and returned. When the questionnaires were returned the identification was destroyed. The letters were personalized with the names of the adults in the household and printed on SESRC letterhead. I hand signed all letters with a blue ball-point pen.

The first contact sent was mailed on January 31, 2005. It included a cover letter the 12-page questionnaire booklet and a stamped return envelope. The cover letter introduced the survey and asked to respondents to complete the questionnaire. This mailing was sent by USPS First-class mail. A $2 bill was inserted with the questionnaire to help emphasize the importance of the survey and a token of appreciation for completing the questionnaire.

The second contact was a postcard follow-up sent one week after the initial mailing. It was sent February 7, 2005. The postcard reminder first thanked the respondents for their help with the study and asked them to complete the questionnaire as soon as possible if they had not already done so.

A replacement questionnaire, cover letter and return envelope was sent to all non-responders on February 22, 2005. This reminder was sent by First-call mail from SESRC and again, the accompanying cover letter, asked the respondent to complete the paper questionnaire. The letters were addressed to both names (over 18) in the household and requested that the person with the most recent birthday complete the questionnaire so we could obtain approximately the same number of responses between males and females. The contact letters are included in Appendix C

Response Rates, Sampling Error, and Response Distributions

Of the 2,000 households that were mailed a survey, 1,315 returned a completed questionnaire. Thus, the overall response rate (completed questionnaires divided by the total sample size) was 65.75%. The completion rate (completed questionnaires after removing the return to senders and ineligible respondents divided by the remaining sample size) was 69.17%. Table 2.1 provides a detailed distribution of the results.

TABLE 2.1 Final Sample Disposition Report[1]

	Version 1	Version 2	Total
Completed Questionnaires	656	659	1315
Refusals	49	54	103
Ineligible	0	0	0
Return to Sender	44	47	91
Other	6	2	8
Non-Response	245	238	483
Total	1000	1000	2000
Response Rate *(Completes/Sample Size)*	65.6%	65.9%	65.75%
Completion Rate *(Completes/Completes + Refusals + No Response)*	69.1%	69.3%	69.17%

[1] Reproduced, with permission, from the SESRC data report.

In addition to response rates a survey researcher must consider the degree of sampling error. Sampling error refers to the discrepancy between a sample statistic and the real population parameter; that is, error as result of only collecting data from a subset of the population (see Dillman, 2000: 206-207). This estimate is based on a formula that takes into account four issues. First, the formula is based on a level of precision; that is, how much sampling error can be tolerated. In this case sampling within +/- 3% was deemed acceptable. Second, the formula considers the population size from which the sample was drawn. In this case the combined population from which the sample was drawn was 51,464. Third, the formula considers how varied the population is with respect to the characteristic of interest. For example, on a "yes" or "no" question one can assume a 50/50 split or a more homogeneous 80/20 split. In my estimates I used the more conservative 50/50 split. Finally, one must include the amount of confidence one wishes to have in their estimates. A generally accepted degree of confidence is 95%. That is, 19 out 20 random samples drawn from the population of interest will be within the stated degree of precision. The 95% confidence level is used here (Z-statistic equals 1.96 or two standard deviations).

Based on the formula described above we would need a sample size of 955 households. Thus, with a completed sample of 1,315 respondents in this survey we can be 95% confident that the sample statistics are within +/- 3.0% of the population parameters assuming that our sample is relatively low on other forms of error including coverage, measurement, or nonresponse.

Table 2.2 shows the response distributions for the time the survey was in the field. Of particular interest is the "bump" in responses received after the follow up post card on February 8, 2005 and the second mailing on February 22, 2005.

TABLE 2.2 Daily Tally Sheets[2]

MIKE - Lewiston / Clarkston Communications Study - Spring 2005
Totals

Project: MIKE Prior letter:
First Mailing: 02/01/2005
Study Director: Kent Postcard: 02/08/2005
Second Mailing: 02/22/2005
Sample Size: 2000 Cut off: 03/21/2005

Date	Cumulative Complete	Daily Complete		Refusals	Ineligible	RTS	Other	No Response
								2000
02/02/2005	1	1	1	0	0	0		1998
02/03/2005	41	40	3	0	53	0		1902
02/04/2005	345	304	28	0	12	1		1557
02/07/2005	430	85	9	0	0	0		1463
02/08/2005	687	257	21	0	13	1		1171
02/09/2005	746	59	2	0	0	1		1109
02/10/2005	790	44	3	0	0	0		1062
02/11/2005	871	81	5	0	0	0		976
02/15/2005	1013	142	8	0	0	3		823
02/16/2005	1032	19	2	0	0	0		802
02/17/2005	1051	19	2	0	0	0		781
02/18/2005	1061	10	1	0	0	0		770
02/21/2005	1078	17	0	0	0	0		753
02/22/2005	1079	1	0	0	0	0		752
02/23/2005	1108	29	1	0	1	0		721
02/24/2005	1114	6	0	0	0	0		715
02/25/2005	1169	55	10	0	7	0		643
02/28/2005	1176	7	0	0	2	0		634
03/01/2005	1222	46	5	0	0	1		582
03/02/2005	1244	22	1	0	1	0		558
03/03/2005	1254	10	0	0	1	0		547
03/04/2005	1261	7	0	0	0	0		540
03/05/2005	1266	5	0	0	0	0		535
03/07/2005	1271	5	0	0	0	0		530
03/08/2005	1282	11	0	0	0	1		518
03/09/2005	1289	7	1	0	0	0		510
03/10/2005	1292	3	0	0	0	0		507
03/11/2005	1299	7	0	0	1	0		499
03/14/2005	1301	2	0	0	0	0		497
03/15/2005	1307	6	0	0	0	0		491
03/17/2005	1308	1	0	0	0	0		490
03/18/2005	1313	5	0	0	0	0		485
03/21/2005	1315	2	0	0	0	0		483
			103	0	91	8		

[2] Reproduced, with permission, from the SESRC data report.

Data Entry

About two weeks before the first questionnaires were returned a codebook was developed with the specifics for the data entry (Appendix D). The data entry on the paper questionnaires began on February 25, 2005 and commenced on March 24, 2005.

SESRC staff began by first coding the surveys based on the aforementioned codebook. The purpose for this is twofold. First, it prepares the survey for data entry. Second it provides an opportunity to make sure that each answer meets the specifications of the codebook.

SESRC staff used computer-assisted telephone interviewing (CATI) software. The CATI software creates a survey database that can be translated into many statistical programs including STATA and SPSS, both of which were used in the analysis of the data. One feature of the CATI system is that it includes safe guards that warn the individual entering the data if an improper value is entered (for example, a number outside the acceptable range on a scalar question).

The CATI system is also used for verification. Verification involves having a staff member re-enter a previously entered survey into the CATI system. If any answer provided in the second round differs from a response originally entered the CATI system warns the person entering the data.

Survey Experiments

In addition to addressing substantive issues concerning Internet usage and community, a second reason for undertaking this study was to explore how visual and graphical manipulations is survey questions may affect respondent behavior. Specifically, I sought to address issues of question construction and measurement error in

self-administered surveys though the use of two alternate versions of the survey with 11 experimental questions embedded. The long-term contribution expected to be made is in controlling for demographic variables including age, education and gender to see if the effects discovered in previous research were more likely to occur among the different demographic groups. The types of tests included were based on research concerning 1) primacy and recency, 2) order effects in ranking questions, 3) check-all-that-apply formats versus forced choice formats in mark all that apply questions 4) the use of a number box in scalar questions, 5) estimation versus category presentation for past behaviors, 6) the size provided for open ended questions 7) appearance of the mailing.

Experiments Relevant to the Substantive Analyses

Only two questions that were used in the substantive data concerning Internet usage or community participation in Chapters 3 and 4 were involved in the methodological experiments. In this section I show that the experimental manipulations do not affect the conclusions drawn from the substantive data. To do this I analyze each of the three questions and compare the difference in the response patterns by version. I analyze the questions in chronological order.

Question 10 tested the effects of a check all that apply question versus a forced choice format. The query asked, "Have you ever engaged in any of the following activities in order to influence a decision concerning your community" (FIGURE 2.1). The question is part of the dependent variable measuring "active participation" used in the analyses in Chapter 3. [3]

Of the seven possible responses two showed significant differences between the experimental versions (TABLE 2.3). One of the two was "none of the above" and the

[3] Voted in the 2004 general election is not used in the measure of active participation.

other is donated money to a community group is used in the measure of active participation. In addition, the mean number of responses shows that the forced choice format produced more affirmatively marked response options than did the check all that apply format. What we can take from these finding is that there are some differences in the way respondents answered the questions based on the version of the question they received. The "none of the above," response option was chosen at much higher rates in the check all that apply format; however, the option is not used in the measure of active participation in Chapter 3 and thus has little bearing on the substantive data. Donated money to a community group is used in the measure of active participation; however, in both versions respondents marked the response at high levels (81% in the forced choice and 79% in the check all format).

FIGURE 2.1 Check-all-that-apply versus Forced Choice.

10. Have you ever engaged in any of the following activities in order to influence a decision concerning your community? (Check all that apply)

Voted in the 2004 general election……..	❑
Attended public hearings……	❑
Attended a public meeting to discuss public issues/problems…….	❑
Signed a petition ……	❑
Participated in a strike…….	❑
Donated money to community group……	❑
None of the above……	❑

10. Have you ever engaged in any of the following activities in order to influence a decision concerning your community?

	Yes	**No**
Voted in the 2004 general election……..	❑	❑
Attended public hearings…….	❑	❑
Attended a public meeting to discuss public issues/problems…….	❑	❑
Signed a petition ……	❑	❑
Participated in a strike……..	❑	❑
Donated money to community group……	❑	❑
None of the above……	❑	❑

TABLE 2.3 Q10 Have you ever engaged in any of the following activities to influence a decision concerning your community? (Check all versus forced choice)

	Forced Choice		Check-all			
	n	%	n	%	X^2	p
Voted in the 2004 general election	656	84.1	656	83.5	.090	.764
Attended public hearings	655	41.5	656	37.8	1.897	.168
Attended a public meeting.	654	37.0	656	34.0	1.295	.255
Signed a petition	655	70.4	656	65.7	3.302	.069
Participated in a strike	654	3.7	656	2.7	.905	.342
Donated money to community group	653	81.3	656	70.9	19.578	.000
None of the above	652	1.8	656	6.3	16.354	.000
					t-test	*p*
Mean Number of Response Options Marked Affirmatively	3.20		3.01		2.48	.013

The key independent variable in Chapter 3 is degree of Internet usage whereas the number of local activities individuals participated in is one of the dependent variables. Thus, it is important to examine whether the question format affected the relationship. To do so, I ran a set of correlations between the degree of Internet usage and each of the versions of the question above. In both cases degree of Internet usage was positively and significantly correlated with the number of activities people marked affirmatively (Forced Choice r=.169, p.<.001 and Check all That Apply r=.254, p.<.001). That is, regardless of question format Internet users participated in more activities, the same relationship that will be discussed further in Chapter 3. In addition, a variable for the questionnaire version was added to the Poisson Regression models used in addressing this relationship in

Chapter 3 and the version had no significant effects on the results. Therefore, question version does not affect the substantive results in any meaningful way.

The second experiment also found in the substantive chapters concerned the amount that respondents used the Internet (Figure 2.2). The substantive variable "degree of Internet usage" is used in Chapters 3 & 4. The reversal of response options led to significant differences in the response distributions (Table 2.4). When "ever day" was first in the list it was selected at much higher rates than when it appeared last (56.3% and 37.5%, respectively). The reason for this appears be the similarity in the response options "every day" and "nearly every day." In version 1, where "nearly every day" appeared below "every day" 15.6% of respondents chose it; whereas, in version 2 where it appeared before "every day" 28.8% of respondent chose the response option. To ameliorate the data situation, I created a variable for the substantive analyses that combined every day and nearly every day into one category (high degree of Internet usage). There are no significant differences in the response distributions for the recoded measure. The experiment is explored in greater detail in Chapter 6.

FIGURE 2.2 Response Order Effects

Version 1	Version 2
26. How often do you use an Internet connection to access the web or for email? ❑ Every day ❑ Nearly every day ❑ A few times per week ❑ Once a week or less	26. How often do you use an Internet connection to access the web or for email? ❑ Once a week or less ❑ A few times per week ❑ Nearly every day ❑ Everyday

TABLE 2.4 Q26. How often do you use an Internet connection to access the web or for email?

	Order at left	Reverse order
	n=638	n=631
	%	%
1. Every day	56.3	37.5
2. Nearly every day	15.6	28.8
3. A few times per week	15.4	18.5
4. Once a week or less	12.8	15.3
TOTAL	100	100
Means	1.847	2.115
T-test	t=-3.927, p=.000	
Chi-Square	$X^2 = 41.570$, p=.000	

Having seen that the experimental manipulations do not affect the substantive results, the data from both versions of the questionnaire were combined using the merge files command in SPSS. For the first question concerning the number of local activities, we saw that after controlling for the effects of the questionnaire version the results remained the same. In the second question concerning the amount that respondents used the Internet, the recoding of the everyday and nearly every day response options into one category ameliorated the problem.

CHAPTER 3

COMMUNITY PARTICIPATION, SOCIAL TIES AND USE OF THE INTERNET[4]

[4] This chapter has been accepted for publication in the American Sociological Journal *City & Community.* Only the table numbering differs from the publication.

INTRODUCTION

Considerable research has shown that the development of social capital is important to mounting and sustaining community-level actions that will foster effective community development (Putnam, 1995; Simpson, 2005). In addition, it has become increasingly evident that the Internet is an important source for the development of such social capital (e.g., Friedman, 2005). In fact, some researchers have found that Internet technology is a tool for community participation because it provides a forum community members can use to communicate about local matters (Hampton and Wellman, 2003).

It has also been argued, however, that people use the Internet in ways that pull their interests out of the local community, leading to the possibility that those who use the Internet the most are the least involved in their local communities. Indeed, some recent research has shown that increasing levels of Internet usage results in a decrease in social participation (Kraut et al., 1998).

Our purpose in this paper is to determine whether increased use of the Internet is positively or negatively associated with involvement in local community activities, community leadership and non-localized affective relationships. We do this by examining the relationships between Internet usage and 1) participation and leadership in community events and groups, 2) actions taken to influence a local decision, and 3) proportion of people's three closest relatives and friends who live in the local community. By also examining the effects of other variables related to community participation, Internet usage or both (age, education, income, employment, marital status and proportion of life lived in the area), we provide insight into whether use of the Internet has independent effects on levels of participation or has its influence as a result of

relationships with these demographic characteristics. While our goal here is to test the assertion that Internet usage encourages community involvement, we recognize that there is likely to be a feedback effect whereby community involvement in turn promotes use of the Internet.

The data we analyze come from a 2005 random sample survey of 1,315 residents of a rural geographic region in the Western United States. The region has approximately 50,000 people and is located more than 200 miles from any major metropolitan area. The self-administered questionnaire included a number of measures of local participation, local community leadership, local social ties and Internet usage.

THEORETICAL BACKGROUND

Social capital refers to the "connection among individuals— social networks and the norms of reciprocity and trustworthiness that arise from them" (Putnam, 2000, p. 19). As such, social capital cannot be formed in isolation and is instead the product of people's association and communication with one and other; it is inherently relational. Through connections and networks individuals form associations with others who share their goals and visions. In addition, the formation of social capital connects individuals to others with whom they may not have had a previous connection (Granovetter, 1973). Simpson (2005) explains that communities high in social capital are necessarily "civic" and therefore empower individuals to become engaged in community activities. Thus, social connections and civic engagement serve as measurable proxies for social capital (Putnam, 2000).

The Internet's ability to connect people quickly and easily may be seen as a tool that promotes social capital by opening lines of communication. Research has shown that

this can be the case. In Hampton and Wellman's (2003) study of the effects of living in a wired suburban subdivision on social capital and community involvement, computer mediated communication (CMC) served to bolster community relations by providing a new, advanced form of communication in which local community residents shared information about local issues (See also Hampton, 2001). Their findings suggest that while proximity and face-to-face interactions are important in the maintenance of community ties, the residents' Internet connections were another tool by which local communication occurred. Internet connections were thus an extension of their face-to-face communication.

However, Internet usage could also be positively associated with a decrease in social capital at the local level. For example, some argue that the Internet provides an escape from the physical world by providing a more anonymous virtual world where interactions need not be intimate (Turkle, 1995). In addition, others have found that increased Internet usage is related to feelings of social isolation and lower levels of community participation (Nie and Erbring, 2000) as well as declines in local social ties (Kraut et al., 1998).

Nonetheless, the use of the Internet for email, commerce, and entertainment has become ubiquitous (Nie, 2001). Nationally representative surveys have shown that a majority of Americans have Internet access from home or elsewhere (U.S. Department of Commerce, 2003). Further, Internet penetration has risen steadily with each passing year, including a 9% increase between 2003 and 2004 from 65% to 74% (Nielson/NetRatings, 2005).

Regardless of the Internet's effect on social capital at the local level, some research has revealed that overall levels of civic participation are decreasing over time. Robert Putnam (1996, 2000), for example, has shown that while the number of voluntary organizations has nearly tripled over the past 25 years, memberships are only a tenth of their previous size; there are many more groups with fewer members. Further, measured in hours per month, the average investment that Americans made in "organizational life" fell from 3.7 in 1965 to 2.3 in 1995 (Putnam, 2000, p. 62). During this same period community participation dropped by 55% among the college educated, 60% among the high school educated and over 70% for individuals with less than a high school degree.

Voluntary organizations have long been recognized as builders of social capital (Putnam, 1995), so much so that involvement in these groups has been referred to specifically as "participatory capital" (Wellman et al., 2001, p. 437). Thus, examining membership in local organizations provides one way to measure participation as an indicator of social capital. Examining attendance at local events and involvement in local activities serves as another indication of local social capital (Simpson, 2005).

There are at least two types of civic participation or participatory capital that need be distinguished as they pertain to different levels of local engagement—nominal and active participation. Nominal participation refers to simply being a member of a local group or organization or attending a local community event. Active participation includes taking a role in or making an investment in the success of the group or event through leadership responsibilities and/or participating in actions aimed at community change. As Flacks (1988) argues, participation in actions aimed at change force an

individual to step outside their daily lives and make an investment in something other than simply their own well-being.

The ability to be an active participant in one's community has as much to do with the amount of time one has available to invest in such activities as their willingness to do so. Research has shown that active participants tend to have greater resources than nominal participants, which is often accompanied by more free time (McPherson and Rotolo, 1996). Additionally, as Oliver (1984) explains, the rewards for being an active member of a community are not the same as those for taking on extra responsibilities in the workplace. In the workplace greater responsibilities and time investments tend to lead to greater financial rewards, which is usually not true of voluntary involvement in the community.

Another way to measure local participation is by looking at interactions with significant others. One area of agreement among community sociologists is that a community consists of social ties (Nisbet, 1967). One's interactions at the local level serve to create a sense of shared local interests (Wilkinson, 1991). Social capital involves networks consisting of interactions among individuals suggesting that the stronger the connection to local individuals (both family and friends) the stronger the local social capital.

Social capital as a result of affective social ties to friends, family members, neighbors and other significant others is referred to as "network capital" (Wellman et al., 2001, p. 437). This type of social capital differs qualitatively from participatory capital because it encompasses the social support system of an individual. Therefore, it may have a different relationship with Internet usage. For example, while strong local social

ties have served as good indicators for degree of social integration (Oliver, 1984), the Internet provides an individual with a means to maintain strong ties outside of the local area, thus increasing the scope of their social networks and support system.

In this paper, we extend previous research in two ways. First, much of the research on Internet usage and social participation has only looked at the relationship between the amount of usage and participation without an examination of non-users (Nie and Erbring, 2000). In this research, we compare individuals at three levels of Internet usage: those who do not use the Internet, those who use the Internet at low levels, and those who use the Internet at high levels. Second, previous research has generally been conducted among individuals in large metropolitan areas, but the relationship between Internet usage and community participation may differ between metropolitan and rural areas due to the relative isolation of rural areas. Here we examine local social capital in a rural region of the Western United States located far from any large metropolitan areas. It may be that due to the relative isolation of rural areas with, for example, fewer services, that the relationship between Internet usage and community participation differs from those previously found in large metropolitan areas.

Factors That Influence Social Participation and Internet Usage

Even if increased use of the Internet is related to higher social participation (or social capital), it may be that other factors such as education, age, gender, marital status, or household income are driving that influence. Research has shown, for example, that individuals with higher levels of participation tend to have higher levels of education (Putnam, 2000; Rotolo and Wilson, 2005). In addition, people with more education also have higher levels of Internet access (Katz, Rice and Aspden, 2000).

Age has relevance to both community participation and Internet usage. The crux of Putnam's (2000) argument concerning participation is that there is a generational difference in propensity to engage in voluntary associations. Elder's (1974) *Children of the Great Depression* further argues that children of earlier generations learned the importance of self sacrifice for the good of the group; an ethic that Putnam argues is no longer with us. Additionally, research has shown that while Internet usage has risen among users 40 and older over the past decade, this group still lags far behind younger users (Katz, Rice and Aspden, 2000).

Women tend to participate more in voluntary associations as often their family roles link them to community organizations such as the PTA (Rotolo and Wilson 2005). However, the research on whether men or women use the Internet more is equivocal; though, some research suggests that new users are more likely to be women (Katz, Rice and Aspden, 2000).

Regardless of gender, married individuals are more likely to participate in volunteer community activities than unmarried people (Hodgkinson and Weitzan, 1996). The reason for this is most likely twofold. First, married couples tend to be more engaged in their communities (i.e., they have in many cases "settled down" or "put down roots"). Furthermore, there is mutual support among married couples for civic engagement whether there are children present or not (Rotolo and Wilson 2005).

Household income is related to both civic participation and Internet usage. Oliver (1984) points out that the linear relationship between increased income and all forms of organizational participation is one of the most well documented and discussed relationships in the social sciences. Furthermore, the Internet is a resource that entails

monetary costs to have at one's home. Research also has shown that paid work, which often provides Internet access, impedes the opportunity structure for engaging in groups or organizations (McPherson and Rotolo, 1996). Thus, while a person may use the Internet heavily at work, it may be the time spent at work, not the use of the Internet that is affecting their propensity to participate in the community.

If we find that these factors affect the relationship between social participation and Internet usage it will provide evidence that usage is having an effect through its association with these other variables. Conversely, if the relationship between Internet usage and social participation remains after considering these other factors, we will have found support for the Internet's ability to contribute independently to local social capital.

PROCEDURES

The data for this study come from a random sample mail survey conducted during the early months of 2005. We sampled 2,000 households with telephone listings in two adjacent cities (one of 31,047 residents and the other of 18,621 residents) in an isolated region of the Western United States. Despite the population concentration of the two cities, the surrounding countryside is sparsely populated. The rural nature of the region suggests fewer unlisted numbers than exist in larger cities (Lavrakas, 1987, p. 33). We used an 11-page questionnaire and achieved a response rate of over 69% (1,315 completed surveys).

We applied principles from the tailored design method in our survey implementation processes including three mail contacts (Dillman, 2000). The first contact contained a personally signed cover letter explaining the survey's goals and content, a self-addressed stamped return envelope, a two dollar token incentive and the

questionnaire. Additionally, the cover letter requested that a household member 18 years or older with the most recent birthday complete the questionnaire to insure that we received a balance of men and women. Two weeks later, we sent a follow up post card to all respondents that thanked those who had responded and encouraged those who had not to please do so. Finally, about two weeks after the post card, we sent a replacement questionnaire and return envelope to individuals who had not yet responded along with a personally signed letter encouraging them to fill out the questionnaire.

Measures

Because the purpose of this study was to examine the relationship between Internet usage and the ways that individuals interact and act in the community, it was important to design a survey instrument with measures that did not "feel" like a survey about Internet usage lest we lose respondents without Internet access and increase our non-response error. Thus, the questions concerning Internet access and usage were embedded as part of a broader survey of local participation and community satisfaction with only a two-page section specifically designated for individuals with Internet access.

Key Independent Variable: Internet Usage

Our measure of Internet access was based on a question that asked whether the respondent had Internet access and, if so, at what locations they had access (home, work, school, or other place). In our sample, over 78% of the households reported having access from home, work, school or elsewhere; with over 67% having access from home, nearly 43% having access from work, and 17% reporting they had access from school or some other place. Of the households with Internet access, we asked the frequency with

which they used the technology (once a week or less, a few times per week, nearly everyday or every day). We then created a variable where the categories consisted of no usage, low usage (a few times a week or less) and high usage (nearly everyday or everyday).

Dependent Variables:

Civic Participation

One of the most widely used ways to measure civic participation is to ask respondents the number of hours, days or weeks per month/year they spent in voluntary activities. However, because of the potential problems with estimation questions (See Knäuper et al., 1997), we used several different measures based on behaviors to examine different forms of community participation, including activity in local events and groups. As discussed above, there are differences in nominal and active participation, thus, we have both nominal and active measures of civic participation as dependent variables. A confirmatory principle components analysis showed that the nominal and active participation variables loaded on different factors.[5]

Nominal Participation in Local Events

To create this measure, we began by asking local residents prior to the survey what they believed to be the most popular local events, reading local newspapers and using resources available at the local chamber of commerce. We then included a list of

[5] Using a confirmatory principle components analysis, we found that number of events attended (-.690) and number of local groups a member of over the past year (-.098) loaded on one factor and serving as a organizer for a local event (.508), leader of local group (.300) and taking part in an action aimed at community change (.133) on a second factor showing that the variables are measuring different constructs.

five of these events in the questionnaire along with an "other events" category. The resulting variable used in this analysis is the cumulative number of events respondents said they attended or participated in over the past year.

Nominal Participation in Local Groups

To measure nominal participation in local groups, we compiled a list of the local groups, clubs and organizations for the communities with help of the local chambers of commerce and qualitative data similar to the approach for local events. We organized these groups by type into nine different categories (religious, fraternal, service, arts and cultural, union and professional, civic, family orientated, hobby and sport and "other groups"). We then included a list of these categories with local examples of each in the questionnaire. The resulting variable used in this analysis is the cumulative number of group types respondents said they participated in over the last year.

Active participation in local events and groups

The measure of active participation in local events and groups was based on two questions. One question concerned the number of *local events* the respondent served as an organizer or leader for over the past year and the second question asked for the number of *local groups* the respondent served as a leader for over the past year. The two questions were then summed to create a composite measure of active participation in local events and groups.

Active participation in community change

The measure for active participation in community change was based on a mark-all-that-apply question that asked "Have you ever engaged in any of the following activities in order to influence a decision concerning your community?" The answer choices included attending public meetings to discuss community issues/problems, striking, petitioning, and donating money. The number of actions a respondent reported participating in is used as the measure.

Network Capital

There are two measures of affective network capital in this study. To create the measures, we asked respondents to name their three closest relatives and three closest friends and asked if each of them lived in the local community or not. We then created a variable where every respondent earned a score based on the number of their closest relatives (0 to 3) and friends (0 to 3) that lived locally. They were then asked if the social tie did not live locally how far in miles did they live from the area. This measure allows us to calculate the physical distance of social ties.

Other Factors

We have described above a number of different factors that previous research has shown to be important to social participation, Internet usage or both. Before constructing models that included these variables, we conducted correlation analyses between these factors and our dependent variables as well as Internet usage. Table 3.1 shows these correlations. Each of the demographic factors is significantly related to Internet usage

and at least two of the dependent variables with the exception of gender. Thus, we have excluded gender from our models.

TABLE 3.1
Correlations between Internet usage, measures of community participation and local ties by age of the respondent, sex, employment status, marital status, income, educational, level, and proportion of life spent in the area.

	Degree of Internet Use [b]	Number of Local Events Attended	Number of Local Groups a Member	Local Actions Aimed at Community Change Participated in Over the Last Year	Local Events an Organizer and Local Groups Leader for Over the Last Year	Proportion of Three Closest Relatives that Live in the Area	Proportion of Three Closest Friends that Live in the Area
Age of Respondent	-.289**	-.157**	-.017	.123**	-.037	-.055	-.013
Sex (Female = 1 Male = 0)	-.016	.075*	-.051	-.081**	-.012	-.041	-.040
Employment (Full time = 1 Other = 0)	.269**	.167**	.132**	.098**	-.068*	-.024	-.044
Marital Status (1= Married, 0= Unmarried)	.247**	.145**	.223**	.182**	.112**	-.115**	-.053
Household Income	.352**	.221**	.318**	.317**	.164**	-.135**	-.062*
Educational Level	.323**	.132**	.289**	.263**	.193**	-.229**	-.147**
Proportion of Life Spent Living in the Area	-.054	.127**	.214**	.216**	.033	.388**	.343**

** p<.001, * p<.05

[b] Internet Use was measured as (0 = No Use, 1 = Use the Internet a Few Times a Week or Less, 2 = Use the Internet Nearly Every Day or More)

ANALYTICAL STRATEGY

There are three different sets of analyses in this study. First, we examine nominal community involvement by examining attendance at local events and participation in local groups relative to Internet usage. At the first stage of the analysis, we discuss the

distributions and correlations between nominal participation and Internet usage. At the second stage of the analysis, we use two Poisson regression models. Poisson regression, as one form of a general linear model, can be used when the distribution of the dependent variable is skewed and thus violates the assumptions necessary for other linear models (e.g., ordinary least squares regression) (Agresti, 1996). The coefficients, however, can be interpreted in ways similar to that of the more conventional linear models. The first model examines the relationship between levels of Internet usage and our measures of nominal participation. The second model adds the other factors to see if the relationships change. We use the same strategy for the measures of active participation.

To examine local social ties, we first discuss the distributions and correlations between Internet usage and the proportion of one's three closest relatives and friends that live locally. At the second stage of the analysis, we use two ordered logistic regression models. Ordered logistic regression models (or proportional odds models) are used in the analysis of ordinal level data to analyze the relationship between an ordinal level dependent variable at different levels of the independent variables (Long and Freese, 2003). Similar to other logit models, we can compute the odds (or risk) that an increase in the independent variable has positive or negative effect on the corresponding dependent variable.

With our second measure, the distance of non-local ties, we used the mean distances of non-local ties for both relative and friends and compared households without Internet usage to those with low and high levels of Internet usage. We then conducted independent samples t-tests to examine differences. To show the mean distributions in

distance for all three of our Internet groups and by type of social tie (friend or relative), we calculated a mean value for distance by group.

RESULTS

Nominal Participation

In the first model (Table 3.2), predicting attendance at local events, we see that the Internet usage coefficient is positive and significant (β=.141; p<.000). However, after including control variables in the second model, both the strength and significance of the relationship are notably diminished. Therefore, while Internet usage and the number of events one attended over the past year appears to be positively related, even after controlling for other important variables, the relationship is not strong enough to reach statistical significance at the conventionally accepted levels.

In looking at the second half of Table 3.2, we see a similar pattern in the relationship between Internet usage and the number of community groups but with one important difference. Just as with the number of community events, the number of community groups participated in has a positive and significant relationship to Internet usage (β=.271; p<.001). However, the addition of the control variables in the second model does not weaken the relationship as much as is seen for community events. In fact, the relationship stays positive and significant (β=.103; p<.05), albeit at a lower level than before the inclusion of the other factors.

TABLE 3.2 Poisson Regression of measures of nominal community participation on degree of Internet use and other related factors

	Number of Local Events Attended		Number of Local Groups a Member	
	Model 1	Model 2	Model 1	Model 2
	β (*se*)	β (*se*)	β (*se*)	β (*se*)
Degree of Internet Use (0 = No Use 1 = Use the Internet a Few Times a Week or Less 2 = Use the Internet Nearly Every Day or More)	.141*** (.023)	.043 (.033)	.271*** (.031)	.103* (.042)
Age of Respondent	--	-.004** (.001)	--	.003 (.002)
Employment (Full time = 1 Other = 0)	--	.038 (.047)	--	.029 (.060)
Marital Status (1= Married, 0= Unmarried)	--	.045 (.053)	--	.229** (.070)
Household Income	--	.025* (.013)	--	.067*** (.017)
Educational Level	--	.019 (.016)	--	.122*** (.020)
Proportion of Life Spent Living in the Area	--	.022*** (.001)	--	.038*** (.008)
Constant	.832***	.803***	.160**	-1.11***
Pseudo R^2	.011	.02	.02	.06

Active Participation

Turning to our measures of active participation (left half of Table 3.3), we see that degree of Internet usage has a positive and significant relationship to number of local actions aimed at community change (β=.148; p<.001). When we add the other factors in model two the relationship is slightly decreased as evidenced by the coefficient, however, the relationship stays significant (p<.01). A similar relationship is seen between Internet

usage and the number of events one helped to organize or groups they served as leader for. The relationship between Internet usage and being an organizer or leader is significant in the first model (β=.576; p<.001) and remains significant after the addition of the other factors (β=.491; p<.001).

TABLE 3.3 Poisson Regression of measures of active community participation on degree of Internet use and other related factors

	Local Actions Aimed at Community Change Participated in Over the Last Year		Local Events an Organizer and Local Groups Leader for Over the Last Year	
	Model 1	Model 2	Model 1	Model 2
	β (*se*)	β (*se*)	β (*se*)	β (*se*)
Degree of Internet Use (0 = No Use 1 = Use the Internet a Few Times a Week or Less 2 = Use the Internet Nearly Every Day or More)	.148*** (.025)	.092** (.035)	.576*** (.048)	.491*** (.064)
Age of Respondent	--	.011*** (.001)	--	.002 (.002)
Employment (Full time = 1 Other = 0)	--	.069 (.052)	--	.052 (.077)
Marital Status (1= Married, 0= Unmarried)	--	.076 (.058)	--	.308** (.095)
Household Income	--	.047** (.014)	--	.077** (.022)
Educational Level	--	.057** (.017)	--	.158*** (.026)
Proportion of Life Spent Living in the Area	--	.041*** (.007)	--	.034** (.011)
Constant	.631***	.524***	-.837***	-2.47***
Pseudo R^2	.01	.04	.04	.08

***<.001; **<.01; *<.05

Network Capital

The ordered logistic regression models for the proportion of three closest relatives living locally is found in the first half of Table 3.4 and the models for proportion of friends can be found in the second half. We present the odds of having a greater proportion of these strong ties living locally for increasing levels of Internet usage. When the odds ratios (expβ) are below 1 this indicates that the probability of having one's closest ties living locally is reduced for increasing levels of Internet usage. Conversely, when the odds ratios (expβ) are above 1 this indicates that the probability of having one's closest ties living locally is increased based on the levels of the independent variable.

The first model shows that without the inclusion of other factors the relationship between the proportion of one's three closest relatives living locally and Internet usage is negative and significant ($exp\beta=.600$; $p<.001$). When the control factors are added in the second model the relationship remains negative and significant ($exp\beta=.601$; $p<.001$). The same relationship can be seen with the proportion of three closest friends that live locally. That is, there is a negative and significant relationship between rates of Internet usage and the proportion of one's closest three friends that live locally both without other factors ($exp\beta=.696$; $p<.001$) and with them added ($exp\beta=.762$; $p<.001$).

TABLE 3.4 Ordered logistic regressions of measures of local social ties on degree of Internet use and other related factors

	Proportion of Three Closest Relatives that Live in the Area		Proportion of Three Closest Friends that Live in the Area	
	Model 1	Model 2	Model 1	Model 2
	expβ	expβ	expβ	expβ
Degree of Internet Use (0 = No Use 1 = Use the Internet a Few Times a Week or Less 2 = Use the Internet Nearly Every Day or More)	.600***	.601***	.696***	.762**
Age of Respondent	--	.985**	--	.993
Employment (Full time = 1 Other = 0)	--	1.19	--	.821
Marital Status (1= Married, 0= Unmarried)	--	.725	--	1.05
Income	--	.934	--	.961
Educational Level	--	.842*	--	.926
Proportion of Life Spent Living in the Area	--	1.29***	--	1.22***
n	1,062	771	1,049	764
Proportional Reduction in Error	.00	.07	.00	.07

***<.001; **<.01; *<.05

This negative relationship between the proportion of one's closest three relatives and closest three friends living locally and Internet usage prompted us to ask whether a relationship exists between the distance of non-local social ties and Internet usage? It seems that if Internet usage is related to having fewer of your closest friends and relatives

local, as seen above, it may also be related to having more distant social ties. Therefore, we compared the mean distances for non-local social ties of individuals having any of their three closest relatives or friends living outside the local area by Internet users and non-users (Table 3.5). We conducted independent samples t-tests to test the differences in means between the groups. Table 5 shows that there are significant differences in the geographical distance to non-local social ties between Internet users and non-users. This is true for both closest relatives and closest friends; no matter the relationship, Internet users are more likely to have more distant ties.

TABLE 3.5 No Internet Use versus Low and High Levels of Internet Use in Net Distance of Social Ties

	n	Mean distances for non-local social ties		t-test	p-value
		No Internet Use	Internet Use		
Relative one	716	581.48	835.24	-2.110	.035
Relative two	737	478.38	763.75	-2.725	.007
Relative three	729	503.29	860.36	-3.324	.001
Friend one	353	362.86	702.12	-2.703	.007
Friend two	394	310.42	683.39	-2.321	.021
Friend three	382	425.19	801.49	-2.058	.040

CONCLUSIONS

In this paper we have examined how use of the Internet relates to both local participatory capital (involvement in community events and organizations as both a participant and leader) and network capital (connections with closest friends and relatives). The results of our analysis show clearly that Internet users are more likely than

others to be involved in the community, whether it is attending local events, being a member of an organization or taking a leadership role in local undertakings. More importantly, Internet use appears to have an independent influence on the latter forms of involvement after the weight of demographic characteristics, e.g., education and income that are positively associated with participation and Internet use, are taken into account.

These findings support the work of Hampton and Wellman (2003). While their findings concerned the relationship between community participation and Internet usage in a large metropolitan area, we find that this relationship also exists in a predominately rural region. In addition, while we examined different measures and types of community participation than they did, we still find a similarly positive relationship.

At the same time, use of the Internet is not positively associated with having a greater proportion of one's closest friends and/or relatives living in the local community. People whose closest friends are located outside the community are more likely to be Internet users, especially when those friends and relatives are located further away from the region. While it is plausible that people with more friends living outside the area tend to use the Internet more to communicate with these friends, this negative correlation between Internet use and localized relationships may also seem to support the idea that the Internet is associated with interests outside of the community. However, from a broader community development perspective this may also have positive implications.

Thomas Friedman (2005) has described a "flattening" of the world, whereby people develop meaningful work and other relationships over long distances. In this world, people's economic activities are increasingly dependent upon these distant relationships and connections made possible in part through the use of the Internet. The

positive relationship of Internet use with local community participation and leadership taken in concert with its similarly positive relationship to connecting with friends and relatives outside the community suggests a link between local capital and non-local network capital that would appear to bode well for communities in the information age. Not only is the Internet supporting local involvement, but it also supports distant relationships, which seems particularly important for small isolated places such as those studied here. Although the ties examined here were of an affective nature (friends and relatives) rather than business ties, they suggest an outward orientation that should be conducive to the flow of useful knowledge and information about events outside the local community.

In sum, we find little evidence that use of the Internet is associated with interests outside the local community. However, these data also hint at least two other aspects of Internet use, which should be of concern to social scientists. First, those least involved in community associations are least likely to use the Internet, and they are also most likely to have their closest friends and relatives living in the same local community. Thus, the non users whose friends are more likely to live in the same community do not seem to connect as well with community organizations or with friends and relatives outside the region. They seem not to be a part of the community action infrastructure. This finding adds one more important element to studies of the digital divide.

Second, the positive association between Internet usage and community participation, even after controlling for other factors, seems to support emerging research showing that the Internet is increasingly being used to mobilize and organize individuals who were already civically engaged. While our data cannot speak specifically to

whether this is the case in our study, Norris (2001: 229) has shown that the Internet is a tool that is increasingly being used to "activate the active." It may be that the associations we have described above reflect this relationship at a local community level.

Much remains to be learned about how the information age, and in particular, Internet usage is affecting the nature of geographic communities. Here we examined one small but important piece of that larger picture by looking at how levels of Internet usage are related to local social capital. However, further investigation needs to be undertaken to examine in more detail how the Internet is and is not used in carrying out local and non-local interactions, and its relationship to having external ties of a business nature. Additionally, studies are needed to examine whether and how Internet usage facilitates localized civic engagement and how that in turn may in turn encourage use of the Internet.

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APPENDIX

TABLE 3.6. Descriptive Statistics

	N	Mean	SD
Dependent Variables			
Number of Local Events Attended Over the Last Year	1230	2.78	1.583
0 Events	11.4%		
1 Event	10.7%		
2 Events	19.3%		
3 Events	23.5%		
4 Events	19.5%		
5 Events	13.9%		
6 Events	1.8%		
Number of Local Groups a Member of Over the Last Year	1212	1.721	1.519
0 Groups	23.7%		
1 Group	28.7%		
2 Groups	21.1%		
3 Groups	13.6%		
4 Groups	6.6%		
5 Groups	4.0%		
6 Groups	2.1%		
7 Groups	.2%		
Number of Local Actions Aimed at Community Change Participated in Over the Last Year	1304	1.349	.795
0 Actions	8.9%		
1 Action	18.6%		
2 Actions	31.7%		
3 Actions	17.6%		
4 Actions	21.9%		
5 Actions	1.3%		
Number of Local Events an Organizer and Local Groups Leader for Over the Last Year	1219	1.021	2.061
0 Events or Groups	62.2%		
1 Event or Group	14.8%		
2 Events or Groups	8.9%		
3 Events or Groups	5.7%		
4 Events or Groups	2.5%		
5 Events or Groups	1.6%		
6 Events or Groups	1.9%		
7 Events or Groups	1.1%		
8 Events or Groups	.5%		
12 Events or Groups	.7%		
Number of Three Closest Friends that Live Outside the Area	1077	1.034	1.059
0 Friends	13.0%		
1 Friend	18.8%		
2 Friends	26.7%		

3 Friends	41.4%		
Number of Three Closest Relatives that Live Outside the Area	1090	1.927	1.119
0 Relatives	42.5%		
1 Relative	24.4%		
2 Relatives	16.4%		
3 Relatives	16.7%		
Independent Variables			
Degree of Internet Use No Use = 0 Use the Internet a Few Times a Week or Less = 1 Use the Internet Nearly Every Day or More = 2	1268	1.349	.795
Age of Respondent (18 to 94 Years)	1047	57.732	16.254
Sex	1055	--	--
Female = 1	55.6%		
Male = 0	44.4%		
Employment	1238	--	--
Full time = 1	49.6%		
Other = 0	50.4%		
Marital Status	1266	--	--
Married = 1	66.6%		
Unmarried = 0	33.3%		
Household Income Less than $10,000 $10,000 to under $20,000 = 1 $20,000 to under $30,000 = 2 $30,000 to under $40,000 = 3 $40,000 to under $50,000 = 4 $50,000 to under $75,000 = 5 $75,000 to under $100,000 = 6 $100,000 or more = 7	1167	4.844	2.038
Educational Level None, or grades 1-8 = 1 Some high school (grades 9-11) = 2 High school graduate (grade 12 or GED) = 3 Business, Technical, or vocational school AFTER high school = 4 Some college, no 4-year degree = 4 College graduate (B.S., B.A., other 4-year degree) = 5 Post-graduate training = 6	1270	4.606	1.462
Proportion of Life Spent Living in the Area	1015	5.679	3.134

0 - 10 percent = 1
10.1 - 20 percent = 2
20.1 - 30 percent = 3
30.1 - 40 percent = 4
40.1 - 50 percent = 5
50.1 - 60 percent = 6
60.1 - 70 percent = 7
70.1 - 80 percent = 8
80.1 - 90 percent = 9
90.1 - 100 percent = 10

CHAPTER 4

HOW CORE SOCIAL TIES ARE MAINTAINED IN THE INFORMATION AGE

INTRODUCTION

One of the most enduring issues in sociology is understanding how social ties are maintained (Nisbet, 1967; Wilkinson, 1991; Boase et al., 2006). Whereas in the early part of the 20th century face-to-face interactions and postal mail were the main conduits available to people for staying in touch, today landline and cellular telephones extend the possibilities. However, the Internet may provide even greater potentialities for staying connected with close friends and relatives.

The local community was once the basis for a large portion of people's interactions. However, the information age has seen the rise of technologies that allow community members to maintain strong relationships with people outside the local area. For example, the reach of the telephone and the Internet now make it possible for people to communicate over a much greater distance. As a result, it has been suggested that the form of people's core social networks may be shifting from local to non-local (Nie and Erbring, 1998). However, the information technologies may allow for a greater frequency of communication among affective social ties and some research suggests that they are used both locally and non-locally (Stern and Dillman, forthcoming; Hampton, 2001). To date, however, little research has explored the modes of communication people use to maintain their intimate family and friendship relationships in the information age.

The purpose of this paper is to examine individuals' most used form of communication for connecting with their three closest friends and three closest relatives. Specifically, I examine how individuals use email, telephone, postal mail, and face-to-face interactions in the maintenance of their core social networks. In addition, the paper

examines how mode of communication may vary by three factors: 1) whether the social ties are local or non-local, 2) frequency of communication, and 3) degree of Internet usage. Finally, other factors that may help to predict mode of communication including sex, percent of life lived in the local area, full-time employment, marital status, income, education, and age are entered into models to see whether the three key factors have independent effects on mode of communication. The implications for understating the maintenance of core social networks in the information age will be addressed.

The data for this research come from a 2005 random sample survey of 1,315 residents of a rural geographic region in the Western United States. This region is composed of approximately 50,000 people and is located more than 200 miles from any major metropolitan area. The self-administered questionnaire included a number of measures of local and non-local affective social ties as well as questions concerning Internet usage and most often used modes of communication.

THEORETICAL BACKGROUND

Social theorists have long been concerned with the relationship between changing technologies and their effects on communities (Surratt, 2005). One of the key areas of agreement among these theorists has been that new technologies tend to diminish the importance of local areas and concomitant social ties (Wellman, 1979). Classical theorists including Tönnies, Wirth, Marx, and Weber all describe increasing levels of isolation and alienation as the result of the social and technological change associated with the urbanization and industrialization at the turn of the 20th century. However, as we continue transitioning to the information age we still know very little about the relationship between information technologies and communities. As a single aspect of

this relationship, this paper investigates questions concerning how people communicate most often with their closest social ties. Specifically, the use of email, telephone, postal mail, and face-to-face interactions as modes of communication are explored.

The question of which mode of communication people use to communicate with others predates the rise of information age and Internet technology. Countless studies have been conducted in laboratories exploring the use of rich-formats, most often face-to-face interactions, versus less rich-formats such as written messages (Boase and Wellman, 2006: 1). Among the questions explored is the appropriateness of a given media to the particular circumstance (Daft and Lengel, 1986; Haythornthwaite and Wellman, 1998). This research has suggested that when the content of the message is meaningful richer formats are better suited. That is, when the subject matter is of a personal nature or is difficult to explain, face-to-face interactions are the preferable mode of communication. Less rich-formats have been found to be less suitable for such messages because they are asynchronous, meaning that they do not require both people in the interaction to be present and thus preclude the message provider from using verbal or visual clues to give context to the message receiver.

However, as Boase and Wellman (2006) point out, the research described above focused on the content of the messages and gave little attention to the social context or processes that affect one's choice of mode of communication. For example, the physical and geographical distance between participants plays a role in how people communicate. If one wishes to talk to a friend or relative who lives a great distance from them face-to-face interactions are most likely not possible without considerable time and expense, thus narrowing the range of possibilities in mode of communication to, for example, postal

mail, telephone, or email. Further, the frequency with which people interact has implications for the type of communication used. For example, as Homans (1961), among others, has noted people interact more with those that they see on a daily basis and as a result they are more likely to use face-to-face communication in these interactions. In the past decade, however, some have argued the Internet has fully entered the "media multiplicity," i.e., the multiple ways that we can contact others (Boase et al., 2006). We are no longer limited to face-to-face interactions, telephone, or postal mail. We can communicate by using the variety of Internet based modes of communication, in particular, email.

Core Ties vs. Significant Ties

One factor that may affect the choice of which mode of communication to use is the strength and degree of social ties. In this regard it is useful to distinguish between core ties and significant ties. Core ties refer to relationships that are affective or close. One's core ties include only one's closest friends and relatives (Boase et al., 2006). Significant ties come in two relational forms. First, a significant tie could be a friend or relative with whom one does not communicate often. Second, a significant tie could be an associate that a person is familiar with but is actually connected to through a core tie in a networked relationship (Granovetter, 1973). Much of the research on mode of communication has focused on significant ties (e.g., Boase et al., 2006); however, my research focuses on core ties. Specifically, I examine the most used mode of communition among four alternatives (email, telephone, postal mail, and face-to-face interaction) for one's three closest friends and three closest relatives.

There are reasons to expect differences in friends and relatives concerning the mode of communication used. For example, many people have friends who live local due to work and school relationships, whereas family members in our highly mobile society tend to live at a greater distance (Sampson, 1988; Myers, 1999). It is likely that people choose different modes of communication to overcome some of the challenges that physical and geographical distance can pose.

Has Computer Mediated Communication Become an Important Mode of Communication with People's Closest Friends and Relatives?

We live in a time of high Internet penetration making possible a meaningful examination of how email is used along with previous modes of communication. For example, nationally representative surveys have shown that a majority of Americans have Internet access from home or elsewhere (U.S. Department of Commerce, 2003). Further, Internet penetration has risen steadily with each passing year, including an estimated 9% increase between 2003 and 2004 from 65% to 74% (Nielson/NetRatings, 2005). Recent research shows that most people use the Internet to maintain their social networks. In fact, the Pew Internet and American Life Project (2000) found that 78% of people who accessed the Internet in the year 2000 used email, more than twice as much as any other activity.

The fact that people use email as a mode of communication has led some to argue that this mode of communication supplants previous modes such as the telephone and face-to-face communication (See Boase et al., 2006). However, some recent research has shown that email communication does not reduce the likelihood of using other modes of interaction (Boase et al., 2006). For example, Hampton (2001) and Hampton and

Wellman (2003) have shown that in a wired suburb residents used email to discuss neighborhood and community issues and that these on-line interactions often led to face-to-face discussions and vice versa (See also Stern and Dillman, forthcoming). In addition, Boase et al. (2006) found that the use of email among their sample was associated with an increase in the use of other modes of communication. Thus, by providing another means for staying connected to one's social ties, email may increase the use of all types of communication.

How Does Distance Influence the Most Used Form of Communication?

As a result of information technologies, physical distance is less of a barrier to communication today than ever before in human history (Wilkinson, 1991; Friedman, 2005). Thus, a person can live in one place and maintain strong relationships with core ties faraway. The ability to stay in frequent contact with social ties using a variety of different forms of communication (e.g., telephone, email, face-to-face interactions, postal mail) has been referred to as the new "media multiplicity" (Haythornwaite and Wellman, 1998). There is little research, however, on what modes of communication are used to maintain local and non-local relationships.

There are competing perspectives on whether email is a tool to communicate with people outside or inside the local area similar to the perspectives raised about the telephone during the middle part of this century (See de Sola Pool, 1983; Fischer, 1992). Just like the telephone, email is largely distance-independent (de Sola Pool, 1983; Boase and Wellman, 2006: 2). That is, it can be used as easily locally as it can non-locally and therefore is well suited for the maintenance of non-local core ties. However, email may be even better suited to long distance communication due to its asynchronous nature.

That is, because the message sender and message receiver need not be on-line at the same time for the message to be transmitted, people in different time zones can communicate at their own convenience; whereas, with the telephone, calling after or before certain times of day are normatively inappropriate. Nonetheless, all people do not use email; thus, the telephone as well as postal mail are still important in maintaining non-local ties too. Is Choice of Communication Mode Influenced by Frequency of Interaction?

There are at least two ways that frequency of interaction may be related to the mode of communication people use most with their core ties. First, frequency of communication is one of the most common ways to measure the strength of one's social ties (Haythornthwaite, 2002); where levels of communication are high the strength of the relationship is believed to be strong. In fact, research seeking to distinguish between strong and weak social ties has commonly used frequency of communication as a measure of strength (Granovetter, 1973;Lin et al., 1978). Yet little is known about whether electronically maintained relationships are as strong as those maintained by face-to-face contact or other means of communication.

There are, however, competing perspectives on how information technologies affect the strength of ties. For example, some argue that relationships maintained through the use of the Internet are weaker than those based on face-to-face communication (Galston, 2000; Nie, 2001). Conversely, some research has shown that email can serve as a tool that facilitates discussion about local happenings. As mentioned above Hampton and Wellman (2003) found that local residents used email to discuss local community issues and these discussions often moved to face-to-face contact. In addition, Boase et al. (2006) have shown that people who use email to maintain core relationships

were more likely to contact social ties by other modes of communication than non-email users. This finding suggests that use of email facilitates higher levels of communication in modes other than those that are computer or Internet based.

A second way that frequency of communication may be important is that new computer mediated forms of communication increase the rapidity with which people can communicate. In comparison to older forms of communication including face-to-face communication, telephone, and postal mail, emails can be sent quickly to many people at any time of the day regardless of locale. Thus, email may be related to more frequent communication among core ties regardless of locality. However, in that many of people's closest friends may be local and thus seen on a regular basis at work or school or the local neighborhood, frequency of communication may be higher among those that use face-to-face communication. Also, though emails may be sent quickly they need not be returned in kind or degree.

How Does the Degree of Internet Usage Influence People's Most Used Means of Communication with Friends and Relatives?

One's degree of Internet usage may influence the mode of communication a person uses with their core ties. Knowing how much one uses the Internet will help us understand how this technology influences how we maintain our most intimate social ties be they local or non-local. While information technologies allow individuals to communicate over great distances thus allowing one to maintain non-local relationships, some argue that they serve to weaken local communities. Stoll (1996) and Turkle (1995, 1996), for example, have argued that use of the Internet focuses people's interests out of local communities thus undermining the importance of the local area. Further, nationally

representative surveys have shown a relationship between decreased local social interaction and Internet and email usage (Nie and Erbring, 2000).

Conversely, Wellman (2001) has put forth the theory of "Glocalization." The basis of this theory is that use of the Internet both expands users' social networks outside the local area and simultaneously binds them to the local area. Thus, while users may maintain non-local social networks they are not less likely to use other forms of communication considered more appropriate to local social ties (Boase et al., 2006).

One would expect a relationship between Internet usage and email use in that to use email one must be using the Internet. However, the more informative relationship may be between degree of Internet usage and other modes of communication. For example, the replacement hypothesis suggests that as new media come along they replace older forms of communication (Boase et al., 2006). In this case it may be that as the degree of Internet usage increases so too does the use of email and this results in a decrease in all other models of communication. This would be similar to what was observed when the telephone became the most popular mode of communication (de Sola Pool, 1983).

Other Factors That Affect Mode of Communication

There are other factors that may affect one's propensity to use one mode of communication over another. For example, sex, percent of life lived in the local area, full-time employment, marital status, income, education, and age may all be related to both one's most used mode of communication and to the other predictor variables listed above.

One of the key reasons for controlling for such variables has to do with the maintenance of social networks. Women are more likely than men to be in charge of maintaining core social networks (Fischer, 1992; Munch et al., 1997; Boneva, Kraut, and Frolich, 2001). Also, because women still deal with the majority of childcare responsibilities they are more likely to come into contact with more people through their children leading to the creation and maintenance of more social networks (Rotolo and Wilson, 2005). The same reasoning can be applied to married and unmarried individuals. Married individuals who have children tend to have more communication with family members as well as community members due to day care or schools; thus, married people have more social networks to maintain. For couples without children, marriage itself often doubles the size of one's familial and friendship networks by adding that of their significant other.

Employment tends to put people in contact with others and friendships built on the shared experience of the work place often result in very strong social ties. Therefore, modes of communication may differ by employment status. Further, the frequency one sees a social tie can be increased if they share a working space. Income and education have a positive relationship to Internet usage and increased non-local social networks (Stern and Dillman, forthcoming). Thus one could expect a difference in modes of communication among the wealthy and highly educated.

Age and length of time lived in the community also have implications for mode of communication. Although research has shown that older individuals are making gains in their on-line activity levels (Kraut et al., 2001) they still lag behind younger people meaning that they are less likely to use the Internet and as a result email. Further the

length of time one has lived in the local area may be related to the number of people they know locally and thus could affect the mode of communication they choose.

Each of these factors could potentially affect one's choice of communication mode. The final set of analyses in this study will control for these factors.

Contributions of this Research

This research extends previous studies in two ways. First, it focuses on core ties; that is, one's closest friends and relatives. In recent years most of the attention in the analysis of social networks by sociologists has focused on significant ties (Boase et al., 2006). An examination of modes of communication among core ties will provide new insight into how our most intimate social networks are maintained in the information age.

Second, the data for this study come from a random sample mail survey conducted in a place-based, localized community. Most of the research that has addressed questions of this sort has done so by either using ethnographic research in suburban or urban wired neighborhoods or large scale nationally representative studies. The purpose for using data from a place-based community is that one can measure how people use different modes of communication inside and outside of the local area with their core ties for a large number of people all from one community.

METHODS, PROCEDURES, & STUDY CONTEXT

The data for this study come from a random sample mail survey conducted during the early months of 2005. The sample included 2,000 households with telephone listings in two adjacent cities (one of 31,047 residents and the other of 18,621 residents) in an isolated region of the Western United States. Despite the population concentration of the two cities, the surrounding countryside is sparsely populated due to the mountainous

terrain. These natural boundaries make it easy to discern community boundaries; thus making it an ideal setting for studying issues concerning communication inside versus outside the community. The rural nature of the region also suggests fewer unlisted numbers than exist in larger cities (Lavrakas, 1987, p. 33). A 12-page questionnaire was used achieving a response rate of over 69% (1,315 completed surveys).

The implementation processes for this study including three mail contacts (Dillman, 2000). The first contact contained a personally signed cover letter explaining the survey's goals and content, a self-addressed stamped return envelope, a two dollar token incentive and the questionnaire. Additionally, the cover letter requested that a household member 18 years or older with the most recent birthday complete the questionnaire to insure that we received a balance of men and women. Two weeks later, a follow up post card was sent to all respondents that thanked those who had responded and encouraged those who had not to please do so. Finally, about two weeks after the post card, a replacement questionnaire and return envelope was sent to individuals who had not yet responded along with a personally signed letter encouraging them to fill out the questionnaire.

A Note on the Data Structure

Several of the variables in this study come from two matrix style questions that were used to ask respondents seven questions about both their three closest friends and three closest relatives (See Figure 1 for example of friend matrix). Thus, each respondent provided three answers for their closest friends and three answers for their closest relatives providing the opportunity to examine total responses for each respondent based on all friend and relative ties. For the statistical analysis variables were created that

would allow each respondent to be counted only once based on proportion of ties, for example, that used a certain mode of communication or the proportion of ties that lived in the local area.

In order to deal with the missing data, all cases where respondents did not provide an answer for all three friends and relatives were removed. Total number of cases removed was 346 from the original 1,315 leaving 969 cases in the analysis. The reduction in the sample size could effect the conclusions even though the sampling error remains within +/- 3% after removing the cases. For example, it may be that people with fewer close friends and relatives (i.e., those respondents that did not provide answers for all three friends and relatives) might use different modes of communication most often with their affective ties. Further, the reduction in the sample size reduces slightly the statistical power of the analyses such that with the inclusion of more cases relationships that do not reach significance or approach significance with the reduced sample size may have shown significance. These issues must be understood when addressing the conclusions from these data.

Dependent Variables: Modes of Communication

The dependent variables in this study are based on four different ways that local residents could communicate with their social ties including face-to-face interactions, using email, postal mail, and through the use of a landline or cellular telephones[6]. Respondents were asked to answer which mode of communication they used most often to keep in touch with each social tie (See Figure 1 for example of friend matrix). In the cross-tabulations and regression models the dependent variables are based on the

[6] For the purposes of this study, the use of cellular and landline telephones were combined into a single variable because of the lack of differences in how the forms of communication were used by respondents.

proportion of ties with whom the respondent uses a given mode of communication most often (0 to 3 friends and 0 to 3 relatives).

Key Independent Variables: Local Social Ties, Frequency of Communication, and Internet Usage

Local Social Ties

To create these measures, respondents were asked to name their three closest friends and three closest relatives and asked if each of them lived in the local community or not. The resulting variable provided respondents with a score based on the proportion of their closest friends (0 to 3) and relatives (0 to 3) that lived locally (See Figure 1 for example of friend matrix).

Frequency of Communication

This measure was based on a question that asked approximately, how often respondents communicated with each tie (less than once a month, once a month, every week or everyday). The resulting two variables were the cumulative amount respondents communicated with their friends and relatives (See Figure 1 for example of friend matrix). Thus, scores ranged from 3 (reported communicating less than once a month for all three ties) to 12 (reported communicating everyday for all three ties). For presentation purposes and chi-square tests, the variable was partitioned into a typology of low (scores 3 to 6), moderate (scores 7 to 9) and high (scores 10 to 12) levels of communication. However, in the correlation and multivariate models the full variation is used.

FIGURE 4.1. Matrix Style Question Concerning Respondents Three Closest Friends

32. Thinking about your three closest friends who do not live with you please answer these questions.

	Friend 1 ▼	Friend 2 ▼	Friend 3 ▼
First name/Initials (optional)	(name)	(name)	(name)
Does this friend live in the Lewiston/ Clarkston area?……..	❑ Yes ❑ No	❑ Yes ❑ No	❑ Yes ❑ No
If no: About how far away from Lewiston/Clarkston do they live? ……..	_____Miles	_____Miles	_____Miles
About how old is this friend?……...	_____years	_____years	_____years
Approximately, how often do you communicate with this friend?……...	❑ Everyday ❑ Every week ❑ Once a month ❑ Less than once a month	❑ Everyday ❑ Every week ❑ Once a month ❑ Less than once a month	❑ Everyday ❑ Every week ❑ Once a month ❑ Less than once a month
When you want to communicate with this friend, which of the following do you use most often?……...	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell phone ❑ Other telephone	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell phone ❑ Other telephone	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell phone ❑ Other telephone

Internet Usage

The measure of Internet access was based on a question that asked whether the respondent had Internet access and, if so, at what locations they had access (home, work, school, or other place). In the sample, over 78% of the households reported having

access from home, work, school or elsewhere; with over 67% having access from home, nearly 43% having access from work, and 17% reporting they had access from school or some other place. Of the households with Internet access, we asked the frequency with which they used the technology (once a week or less, a few times per week, nearly everyday or every day). A variable was created where the categories consisted of no usage, low usage (a few times a week or less) and high usage (nearly everyday or everyday).[7]

Other Factors

Other factors controlled for due their potential influence include sex (1=Female, 0=Male), martial status (1=Married, 0=Unmarried), employment status (1=Employed Full Time, 0= Not Employed Full Time), income, education, the percent of life live in the community variable and age in years[8]. The distribution for all the variables can be found in the Appendix.

ANALYTICAL STRATEGY

There are two steps to this analysis. First, each of the key independent variables is examined relative to mode of communication in order examine the research questions, which can be addressed using bivariate analysis. Second, nested ordered logistic regression models are used to test the effects of other factors, which calls for multivariate analysis. The models first examine the relationship between the key independent variables (Local Social Ties, Frequency of Communication, and Internet Usage) and mode of communication. Then models are specified to examine the key independent variables along with controls to examine whether the key independent variables are

[7] See Chapter 2 for additional discussion of this variable.
[8] The percent of life live in the community variable was calculated by dividing the number of years one lived in the community by their age and multiplying the number by 100.

having independent effects on the proportion of core ties with whom people use a particular mode of communication.

Ordered logistic regression models (or proportional odds models) are used in the analysis of ordinal level data to analyze the relationship between an ordinal level dependent variable at different levels of the independent variables (Long and Freese, 2003). Similar to other logit models, we can compute the odds (or risk) that an increase in the independent variable has positive or negative effect on the corresponding dependent variable. Thus, through this technique one can see how the probability that the number of ties for which respondents use a given form communication increases or decreases with levels of the independent variables.

RESULTS

Has Computer Mediated Communication Become an Important Mode of Communication with People's Closest Friends and Relatives?

It is clear from Table 4.1 that the most used mode of communication with friends is the telephone. The telephone is used by 67% of respondents as the main mode with one or more of people's closest friends. It is followed by face-to-face interactions (55%) and email (39%). Only 5% use postal mail as the dominant mode of communication with friends. Thus, email ranks third behind another electronic mode and face-to-face interactions. However, the situation is somewhat different for relatives. For relatives email ranks second behind telephone, being used by 39% of people as the main mode with one or more of the three closest relatives, compared to 30% that use face-to-face interactions. Thus, email does appear to be part of the media multiplicity.

TABLE 4.1. The proportion of three closest friends and relatives with whom respondents most often communicate by email, telephone, postal mail, or face-to-face interactions to communicate with most often.

	Email	Telephone	Postal mail	Face-to-Face
	(n=969) (%)	(n=969) (%)	(n=969) (%)	(n=969) (%)
Proportion of Friends				
None	61.1	32.8	94.5	45.0
One of Three	22.0	22.4	4.3	21.4
Two of Three	11.0	21.1	.8	18.1
All Three	5.9	35.2	.4	15.5
Total	100	100	100	100
Proportion of Relatives				
None	61.7	24.9	94.9	69.7
One of Three	15.3	18.0	2.5	16.0
Two of Three	11.5	21.9	1.9	7.9
All Three	11.6	35.2	.7	6.4
Total	100	100	100	100

[a] The question asked: When you want to communicate with this friend or relative, which of the following do you use most often? Response options included Email, Telephone, Postal Mail, and Personal Visit. The question was asked about all three of respondents' three closest friends and three closest relatives.

These data leave little doubt that a significant plurality of people are now using email to keep in contact with both friends and relatives. However, it is not yet clear why differences exist (55% vs. 30%) between the use of face-to-face interactions for staying in touch with friends and relatives, respectively. One possible explanation may involve differences in whether people's friends and relatives are located within the community or elsewhere. Table 4.2 shows that relatives are far less likely to live locally than are friends.

For example, 41% of the respondents have all three of their three closest friends living locally, compared to only 17% of their three closest relatives. Thus, there is a significant difference in the number of people's three closest friends as compared to three closest relatives that live locally ($X^2 = 66.98$, $p<.000$).

TABLE 4.2. What proportion of people's three closest friends and relatives live locally?

	Friends	Relatives
Proportion of Ties Local by Respondent (0 to 3)[a]	(n=969)	(n=969)
None	12.2	41.5
One of Three	18.9	24.9
Two of Three	27.8	16.9
All Three	41.2	16.7
TOTAL	100	100
$X^2 = 66.98$, $p<.000$[b]		

[a] The question asked: Does this friend or relative live in Lewiston/ Clarkston? The question was asked about all three of respondents' three closest friends and three closest relatives.

[b] The chi-square value represents the overall difference in the number of respondents' friends and relatives that live in the local area.

How Does Distance Influence the Most Used Form of Communication?

The second question concerns which modes of communication (i.e., email, telephone, postal mail, or face-to-face communication) are most likely be used with non-local versus local social ties. An examination of the number of people that use each mode shows that for both friends and family very few people use postal mail as the predominant mode of communication. In fact, less than 1% of people (4 respondents) use it with all three friends as well as with all three relatives (7 respondents). Thus, comparing this mode to the others in this analysis is not possible relative to local social ties. The other modes of communication are much more widely used among both friends and relatives.

Starting with friends (Table 4.3), nearly three times as many people reported using email as the predominant mode of communication when all three of their friends were non-local compared to having them all local (37.5% and 14.3%, respectively). In addition, the correlation between the number of friends local and the proportion with whom one uses email is negative and significant (r=.-349; p<.000) meaning that as the proportion of non-local friends increases so too does the likelihood of using email.

In contrast, there does not appear be a relationship between the proportion of one's closest friends local and use of the telephone. That is, people seem to use the telephone both locally and non-locally. However, in comparison to face-to-face communication, which is positively related to having more of one's closest friends local (r=.291; p<.05), more people use telephone to communicate with non-local ties. In fact, 74.3% of people that use face-to-face communication with all three friends also have all of these friends local. Thus, telephone is still more likely to be used to communicate with non-local friends.

Among relatives (Table 4.4) the findings are in the same direction as those found for friends, but are even stronger (r=-.349; p<.000). For example, 82% of people that use email with all three of their social ties also have all three of these ties living outside the local area; whereas, under 3% of people that have all three relatives local use email as the predominant mode of communication with these ties. Similar to friends there does not appear to be a relationship between number of relatives local and telephone usage. However, people are more likely to use telephone than face-to-face interactions with their non-local family members.

TABLE 4.3. The proportion of three closest friends with whom respondents use email, telephone, postal mail, or face-to-face interactions to communicate with most often by the number of these friends that live in the local area.

	Proportion of Friends with Whom Each Mode of Communication is Used Most Often[a]															
	None Email	1/3 Email	2/3 Email	All Email	None Telephone	1/3 Telephone	2/3 Telephone	All Telephone	None Postal Mail	1/3 Postal Mail	2/3 Postal Mail	All Postal Mail	None Face-to Face	1/3 Face-to Face	2/3 Face-to Face	All Face-to Face
Proportion of Friends Local[b] (0 to 3)	(n=582) (%)	(n=209) (%)	(n=105) (%)	(n=56) (%)	(n=314) (%)	(n=214) (%)	(n=202) (%)	(n=227) (%)	(n=904) (%)	(n=41) (%)	(n=8) (%)	(n=4) (%)	(n=431) (%)	(n=205) (%)	(n=173) (%)	(n=148) (%)
None	8.2	10.0	25.7	37.5	14.6	9.3	11.9	11.9	11.3	26.8	12.5	75.0	22.0	4.9	3.5	4.1
One of Three	16.2	19.6	29.5	28.6	16.6	21.0	23.8	16.3	18.3	26.8	75.0	0.0	20.9	30.2	9.2	9.5
Two of Three	26.6	33.5	25.7	19.6	26.8	36.4	26.2	22.0	27.3	43.9	0.0	0.0	21.3	30.2	53.8	12.2
All Three	49.0	36.8	19.0	14.3	42.0	33.2	38.1	49.8	43.1	2.4	12.5	25.0	35.7	34.6	33.5	74.3
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	*r=-.302***; X^2=100.48*** df=9*				*r=.039; X^2=24.48** df=9*				*r=-.180****				*r=.291***; X^2=201.52*** df=9*			

***<.001; **<.01; *<.05

[a] The question asked: When you want to communicate with this friend or relative, which of the following do you use most often? Response options included Email, Telephone, Postal Mail, and Personal Visit. The question was asked about all three of respondents' three closest friends and three closest relatives.

[b] The question asked: Does this friend or relative live in Lewiston/ Clarkston? The question was asked about all three of respondents' three closest friends and three closest relatives.

TABLE 4.4. The proportion of three closest relatives with whom respondents use email, telephone, postal mail, or face-to-face interactions to communicate with most often by the number of these relatives that live in the local area.

	Proportion of Relatives with Whom Each Mode of Communication is Used Most Often[a]															
	None Email	1/3 Email	2/3 Email	All Email	None Telephone	1/3 Telephone	2/3 Telephone	All Telephone	None Postal Mail	1/3 Postal Mail	2/3 Postal Mail	All Postal Mail	None Face-to Face	1/3 Face-to Face	2/3 Face-to Face	All Face-to Face
Proprotion of Relatives Local[b] (0 to 3)	(n=590) (%)	(n=146) (%)	(n=110) (%)	(n=111) (%)	(n=238) (%)	(n=172) (%)	(n=210) (%)	(n=337) (%)	(n=908) (%)	(n=24) (%)	(n=18) (%)	(n=7) (%)	(n=667) (%)	(n=153) (%)	(n=76) (%)	(n=61) (%)
None	32.4	46.6	45.5	82.0	51.3	37.8	32.9	42.7	40.6	58.3	55.6	100	54.3	11.8	11.8	18.0
One of Three	23.4	28.8	43.6	9.0	17.2	30.8	32.9	22.3	24.8	20.8	44.4	0.0	22.3	47.7	15.8	6.6
Two of Three	18.8	21.9	10.9	6.3	13.4	23.8	21.0	13.4	17.5	12.5	0.0	0.0	11.7	22.9	52.6	14.8
All Three	25.4	2.7	0.0	2.7	18.1	7.6	13.3	21.7	17.1	8.3	0.0	0.0	11.7	17.6	19.7	60.7
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	*r=-.349***; X^2=174.55*** df=9*				*r=.061; X^2=50.79*** df=9*				*r=-.128****				*r=.391***; X^2=280.86*** df=9*			

***<.001; **<.01; *<.05

[a] The question asked: When you want to communicate with this friend or relative, which of the following do you use most often? Response options included Email, Telephone, Postal Mail, and Personal Visit. The question was asked about all three of respondents' three closest friends and three closest relatives.

[b] The question asked: Does this friend or relative live in Lewiston/ Clarkston? The question was asked about all three of respondents' three closest friends and three closest relatives.

Is Choice of Communication Mode Influenced by Frequency of Interaction?

The third question addressed in this study is whether given modes of communication are more or less related to the frequency of communication. Again, very few people use postal mail as compared to the other modes of communication. In fact, over 95% of respondents reported that postal mail was not the most used form of communication with any of their closest friends or relatives.

One may suspect that due in some degree to the purported asynchronous nature of email (Boase and Wellman, 2006) where there is no need to respond immediately in many cases, that there will be no relationship between frequency of communication and use of email among core ties. This appears to be the case. Among friends (Table 4.5), there seems to be little difference in the frequency of communication and the proportion of friends with whom one uses email ($r=.006$; $p>.05$). The same is true of relatives (Table 4.6) ($r=-.048$; $p>.05$).

However, there is a positive association between relationships maintained by face-to-face communication and frequency of communication. Among friends (Table 4.4a), we see that as the frequency of communication increases so too does the proportion of friends with whom one uses face-to-face communication as the predominant mode of communication ($r=.177$; $p<.000$). In fact, 31.3% percent of those respondents that use face-to-face communication with all three of their friends do so at high levels of frequency. Among relatives (Table 4.5) there is a similar, positive relationship ($r=.145$; $p<.000$); where the proportion of relatives with whom respondents use face-to-face interactions is positively related to the frequency of communication.

Because most people use the telephone to communicate with their closest social ties, one would expect that frequency of communication would be positively related to the proportion of three closest friends and relatives with whom respondents used this medium as the predominant mode of communication. However, this does not appear to be the case. In fact, there is a negative relationship between frequency of communication and the proportion of friends who respondents used telephone as the predominant mode of communication (Table 4.6) ($r=-.079$; $p<.05$). Among relatives there is no relationship at all. That is, the proportion of relatives with whom one uses the telephone is not related to the frequency of communication (Table 4.6).

TABLE 4.5. The proportion of three closest friends with whom respondents use email, telephone, postal mail, or face-to-face interactions to communicate with most often by how frequently respondents communicate with these friends.

	Proportion of Friends with Whom Each Mode of Communication is Used Most Often[a]															
	None Email	1/3 Email	2/3 Email	All Email	None Telephone	1/3 Telephone	2/3 Telephone	All Telephone	None Postal Mail	1/3 Postal Mail	2/3 Postal Mail	All Postal Mail	None Face-to Face	1/3 Face-to Face	2/3 Face-to Face	All Face-to Face
Frequency of Communication[b]	(n=571) (%)	(n=205) (%)	(n=104) (%)	(n=55) (%)	(n=304) (%)	(n=213) (%)	(n=201) (%)	(n=222) (%)	(n=890) (%)	(n=39) (%)	(n=8) (%)	(n=3) (%)	(n=424) (%)	(n=201) (%)	(n=171) (%)	(n=144) (%)
Low Levels of Communication	21.7	15.1	23.1	16.4	17.8	16.9	23.4	23.9	18.1	51.3	87.5	66.7	25.9	18.4	15.8	11.1
Moderate Levels of Communication	55.7	57.1	52.9	65.5	54.3	60.1	55.7	55.0	57.2	41.0	12.5	33.3	55.4	57.7	54.4	57.6
High Levels of Communication	22.6	27.8	24.0	18.2	28.0	23.0	20.9	21.2	24.7	7.7	0.0	0.0	18.6	23.9	29.8	31.3
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	*r=.006; X^2=7.673*** df=6*				*r=-.079*; X^2=9.01 df=6*				*r=-.247****				*r=.177***; X^2=25.80*** df=6*			

***<.001; **<.01; *<.05

[a] The question asked: When you want to communicate with this friend or relative, which of the following do you use most often? Response options included Email, Telephone, Postal Mail, and Personal Visit. The question was asked about all three of respondents' three closest friends and three closest relatives.

[b] This measure was based on a question that asked approximately, how often respondents communicated with each tie (less than once a month, once a month, every week or everyday). The resulting variable was the cumulative amount respondents communicated with their friends. Thus, scores ranged from 3 (reported communicating less than once a month for all three ties) to 12 (reported communicating everyday for all three ties). For the chi-square tests presented in this table, the variable was partitioned into a typology of low (scores 3 to 6), moderate (scores 7 to 9) and high (scores 10 to 12) levels of communication. The correlation values, however, are based on the full variation.

TABLE 4.6. The proportion of three closest relatives with whom respondents use email, telephone, postal mail, or face-to-face interactions to communicate with most often by how frequently respondents communicate with these relatives.

Proportion of Relatives with Whom Each Mode of Communication is Used Most Often[a]

	None Email	1/3 Email	2/3 Email	All Email	None Telephone	1/3 Telephone	2/3 Telephone	All Telephone	None Postal Mail	1/3 Postal Mail	2/3 Postal Mail	All Postal Mail	None Face-to Face	1/3 Face-to Face	2/3 Face-to Face	All Face-to Face
Frequency of Communication[b]	(n=569 (%)	(n=207) (%)	(n=103) (%)	(n=56) (%)	(n=237) (%)	(n=169) (%)	(n=205) (%)	(n=330) (%)	(n=893) (%)	(n=24) (%)	(n=17) (%)	(n=7) (%)	(n=656) (%)	(n=149) (%)	(n=75) (%)	(n=61) (%)
Low Levels of Communication	16.0	16.9	14.6	12.5	15.2	14.2	14.1	17.9	15.0	12.5	35.3	71.4	18.8	9.4	6.7	9.8
Moderate Levels of Communication	54.8	61.8	60.2	73.2	54.0	68.0	62.9	52.7	58.1	75.0	47.1	14.3	58.4	61.1	58.7	45.9
High Levels of Communication	29.2	21.3	25.2	14.3	30.8	17.8	22.9	29.4	26.9	12.5	17.6	14.3	22.9	29.5	34.7	44.3
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	r=-.048; X^2=11.43 df=6				*r=-.021; X^2=16.25* df=6*				*r=-.133***; X^2=24.98*** df=6*				*r=.145***; X^2=27.71*** df=6*			

***<.001; **<.01; *<.05

[a] The question asked: When you want to communicate with this friend or relative, which of the following do you use most often? Response options included Email, Telephone, Postal Mail, and Personal Visit. The question was asked about all three of respondents' three closest friends and three closest relatives.

[b] This measure was based on a question that asked approximately, how often respondents communicated with each tie (less than once a month, once a month, every week or everyday). The resulting variable was the cumulative amount respondents communicated with their relatives. Thus, scores ranged from 3 (reported communicating less than once a month for all three ties) to 12 (reported communicating everyday for all three ties). For the chi-square tests presented in this table, the variable was partitioned into a typology of low (scores 3 to 6), moderate (scores 7 to 9) and high (scores 10 to 12) levels of communication. The correlation values, however, are based on the full variation.

How Does the Degree of Internet Usage Influence People's Most Used Means of Communication with Friends and Relatives?

The fourth research question explored in this study was whether an increase in Internet usage is related to a decrease in other modes of communication besides email? This analysis tests the replacement hypothesis of whether an increase in Internet usage negatively affects the use of other forms of communication (Tables 4.7 and 4.8).

The replacement hypothesis garners considerable support from the data. Among friends, an increase in the degree of Internet usage is negatively related to the use of telephone ($r=-.084$; $p<.01$), as well as postal mail ($r=-.144$; $p<.000$) and face-to-face interactions ($r=-.013$; $p<.000$). Among relatives, the same relationship is seen with a decrease in the use of telephone ($r=-.102$; $p<.000$), postal mail ($r=-.144$; $p<.000$), and face-to-face interactions ($r=-.237$; $p<.000$).

TABLE 4.7. The proportion of three closest friends with whom respondents use email, telephone, postal mail, or face-to-face interactions to communicate with most often by degree of Internet usage.

Proportion of Friends with Whom a Particular Mode of Communication Used Most Often[a]

	None Email	1/3 Email	2/3 Email	All Email	None Telephone	1/3 Telephone	2/3 Telephone	All Telephone	None Postal Mail	1/3 Postal Mail	2/3 Postal Mail	All Postal Mail	None Face-to Face	1/3 Face-to Face	2/3 Face-to Face	All Face-to Face
Degree of Internet Usage[b]	(n=559) (%)	(n=209) (%)	(n=104) (%)	(n=156) (%)	(n=308) (%)	(n=211) (%)	(n=200) (%)	(n=214) (%)	(n=881) (%)	(n=41) (%)	(n=7) (%)	(n=4) (%)	(n=417) (%)	(n=202) (%)	(n=170) (%)	(n=144) (%)
Do not use the Internet	28.4	1.4	0.0	0.0	14.9	16.1	13.0	27.1	17.0	22.0	57.1	25.0	15.1	12.9	22.9	25.0
Use the Internet a few times a week or less	30.1	16.7	7.7	10.7	19.2	22.7	24.5	29.4	23.3	26.8	14.3	50.0	21.1	24.8	27.1	24.3
Use the Internet nearly everyday or more	41.5	81.8	92.3	89.3	65.9	61.1	62.5	43.5	59.7	51.2	28.6	25.0	63.8	62.4	50.0	50.7
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	*r=.412***; X^2=202.19*** df=6*				*r=-.084**; X^2=32.58*** df=6*				*r=-.144***; X^2=11.0 df=6*				*r=-..013***; X^2=19.43** df=6*			

***<.001; **<.01; *<.05

[a] The question asked: When you want to communicate with this friend or relative, which of the following do you use most often? Response options included Email, Telephone, Postal Mail, and Personal Visit. The question was asked about all three of respondents' three closest friends and three closest relatives.

[b] The measure for degree of Internet usage was based on a question that asked whether the respondent had Internet access and, if so, at what locations they had access (home, work, school, or other place. Of the households with Internet access, we asked the frequency with which they used the technology (once a week or less, a few times per week, nearly everyday or every day). A variable was created where the categories consisted of no usage, low usage (a few times a week or less) and high usage (nearly everyday or everyday).

TABLE 4.8. The proportion of three closest relatives with whom respondents use email, telephone, postal mail, or face-to-face interactions to communicate with most often by degree of Internet usage.

	Proportion of Relatives with Whom Each Mode of Communication Used Most Often[a]															
	None Email	1/3 Email	2/3 Email	All Email	None Telephone	1/3 Telephone	2/3 Telephone	All Telephone	None Postal Mail	1/3 Postal Mail	2/3 Postal Mail	All Postal Mail	None Face-to Face	1/3 Face-to Face	2/3 Face-to Face	All Face-to Face
Degree of Internet Usage[b]	(n=567) (%)	(n=146) (%)	(n=109) (%)	(n=111) (%)	(n=234) (%)	(n=167) (%)	(n=205) (%)	(n=327) (%)	(n=886) (%)	(n=22) (%)	(n=18) (%)	(n=7) (%)	(n=656) (%)	(n=149) (%)	(n=75) (%)	(n=61) (%)
Do not use the Internet	28.6	2.1	0.0	0.0	14.1	15.0	12.7	24.8	16.7	31.8	44.4	28.6	13.9	18.8	32.4	39.7
Use the Internet a few times a week or less	29.3	19.2	10.1	12.6	18.4	21.0	23.9	28.1	23.7	13.6	16.7	42.9	21.4	24.2	38.0	27.6
Use the Internet nearly everyday or more	42.2	78.8	89.9	87.4	67.5	64.1	63.4	47.1	59.6	54.5	38.9	28.6	64.7	57.0	29.6	32.8
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	*r=.407***; X^2=190.19*** df=6*				*r=-.102***; X^2=32.83** df=6*				*r=-.154***; X^2=15.89* df=6*				*r=-.237***; X^2=27.71*** df=6*			

***<.001; **<.01; *<.05

[a] The question asked: When you want to communicate with this friend or relative, which of the following do you use most often? Response options included Email, Telephone, Postal Mail, and Personal Visit. The question was asked about all three of respondents' three closest friends and three closest relatives.

[b] The measure for degree of Internet usage was based on a question that asked whether the respondent had Internet access and, if so, at what locations they had access (home, work, school, or other place. Of the households with Internet access, we asked the frequency with which they used the technology (once a week or less, a few times per week, nearly everyday or every day). A variable was created where the categories consisted of no usage, low usage (a few times a week or less) and high usage (nearly everyday or everyday).

Table 4.9 shows a summary of the bivariate correlations between the modes of communication used most often for respondents' closest three friends and relatives by the three key independent variables. We can see that the proportion of friends and relatives with whom email and postal mail are used most often is negatively related to the proportion of friends and relatives local whereas the relationship with face-to-face communication is positive. The proportion of friends and relatives with whom respondents use the telephone most often shows no relationship to the proportion of friends and relatives local. Frequency of communication is positively related to the proportion of friends and relatives with whom people use face-to-face interaction most often and negatively related to the proportion that use postal mail most often. Finally, as the degree of Internet usage increases the proportion of friends and relatives with whom respondents use the telephone, postal mail or face-to-face interaction most often decreases whereas the proportion with whom email is used most often increases.

TABLE 4.9. Correlations between modes of communication being used most often by selected variables.[a]

	Email	Telephone	Postal Mail	Face-to-Face
Proportion that are local				
Friends[b]	-.302***	.039	-.180***	.291*
Relatives[b]	-.349***	.061	-.128*	.391*
Frequency of communication				
Friends[c]	.006	-.079*	-.247***	.177***
Relatives[c]	-.048	-.021	-.133***	.145***
Degree of Internet				
Friends[d]	.412***	-.084**	-.144****	-.013***
Relatives[d]	.407***	-.102**	-.154***	-.237***

***<.001; **<.01; *<.05

[a] In this table when the row variables concern friends (e.g., proportion of friends local) then the correlations are computed using the proportion of respondents three closest friends with whom they use the given mode of communication most often, whereas, when the row variable refers to relatives (e.g., proportion of relatives local) the correlations refer to the proportion of relatives with whom respondents use a given mode of communication most often.

[b] The question asked: Does this friend or relative live in Lewiston/ Clarkston? The question was asked about all three of respondents' three closest friends and three closest relatives.

[c] This measure was based on a question that asked approximately, how often respondents communicated with each tie (less than once a month, once a month, every week or everyday). The resulting variable was the cumulative amount respondents communicated with their relatives. Thus, scores ranged from 3 (reported communicating less than once a month for all three ties) to 12 (reported communicating everyday for all three ties).

[d] The measure of Internet access was based on a question that asked whether the respondent had Internet access and, if so, at what locations they had access (home, work, school, or other place. Of the households with Internet access, we asked the frequency with which they used the technology (once a week or less, a few times per week, nearly everyday or every day). A variable was created where the categories consisted of no usage, low usage (a few times a week or less) and high usage (nearly everyday or everyday).

Despite these correlations, multivariate analyses are necessary for the examining whether or not the key independent variables have independent effects on the proportion of ties with whom people use particular modes of communication. Multivariate techniques allow for the controlling of other factors that may be influential in these

relationships. Ordered logistic regression models are estimated for friends (Table 4.10) and relatives (Table 4.11).

Starting with the proportion of friends local (Table 4.10), an increase in this variable was negatively related to the use of email with these ties (Exp(B)=0.54; p<.000). Meaning people are significantly more likely to use email with non-local friends. Turning to relatives (Table 4.11), just as with friends we see that an increase in the proportion of relatives local is negatively related to the use of email with these ties (Exp(B)=0.47; p<.000), meaning that people use email more with non-local relatives than those that are local. Thus, even when controlling for the effects of the other key independent variables and the demographic factors there is a negative relationship between the proportion of friends and relatives local and the proportion of cores ties with whom people used email.

I now turn to frequency of communication. Starting with friends, (Table 4.10) there is a positive relationship between email usage and frequency communication both when controlling for core tie locality and degree of Internet usage (Model 1 Exp(B)=1.11; p<.01) as well as with the addition of the demographic variables (Model 2 Exp(B)=1.10; p<.05). Use of the telephone is negatively related to frequency of communication in the first model (Exp(B)=.92; p<.05) but does not sustain this relationship in the full model. Thus, when controlling locality of the social ties, degree of Internet usage and the demographic variables there is no relationship between frequency of communication and the proportion of friends with whom respondents use the telephone. There is also no relationship in these models between face-to-face communication and frequency of communication. Among relatives (Table 4.11) there is no relationship between email or

telephone usage and frequency of communication. There is a positive relationship between face-to-face communication and frequency of communication in the first model (Exp(B)=1.09; p<.05); though this relationship is not sustained in the full model.

Finally, we saw above that an increase in the degree of Internet usage was related to a decrease in the use of other modes of communication and, in particular, the use of the telephone. In the multivariate model for friends (Table 4.10), use of telephone is significantly and negatively reduced by an increase in the degree of Internet usage when controlling for the locality of the ties and frequency of communication (Exp(B)=0.73; p<.000) as well as when the demographic variables are added to the equation (Exp(B)=0.71; p<.01). However, in terms of face-to-face communication there is a significant and negative relationship when controlling for the locality of the ties and frequency of communication (Exp(B)=0.80; p<.01), but this relationship dissipates when adding the demographic variables to the model.

Turning to relatives (Table 4.11), an increase in the degree of Internet usage decreases the likelihood of using telephone regardless of locality of these relatives, frequency of communication, or the control variables (Exp(B)=0.58; p<.000). This type of relationship is also found for face-to-face interactions where regardless of locality of these relatives, frequency of communication, or the control variables the a rise in degree of Internet usage is negatively and significantly related to a decrease in the proportion of relatives with whom respondents used face-to-face communication (Exp(B)=0.63; p<.000).

TABLE 4.10. Ordered Logistic Regressions Models for the Proportion of Friends with Whom a Particular Mode of Communication is Used Most Often by Number of Friends Local, Frequency of Communication, Degree of Internet Usage and Control Variables.

	Proportion of Friends with Whom a Particular Mode of Communication is Used Most Often							
	Email		Telephone		Postal Mail		Face-to-Face	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
	Exp(B)	Exp(B)	Exp(B)	Exp(B)	Exp(B)	Exp(B)	Exp(B)	Exp(B)
Friends Local	0.54***	0.59***	1.10	1.07	0.62**	0.65*	1.65***	1.77***
Frequency of Communication	1.11**	1.10*	0.92*	0.94	0.65***	0.54***	1.07	1.06
Degree of Internet Usage	5.34***	4.21***	0.73***	0.71**	0.68*	0.70	0.80**	0.81
Control Variables								
Sex (Women =1, Men = 0)	--	1.53**	--	0.85	--	4.13***	--	0.81
Percent of Life Lived in Area	--	.98	--	1.01	--	0.97	--	0.96
Full-time Employment (Employed Full-time = 1, Other = 0)	--	1.89	--	0.74	--	0.56	--	1.12
Married (Married = 1, Other = 0)	--	1.22	--	0.98	--	0.58	--	0.98
Income	--	1.02	--	0.99	--	1.07	--	1.02
Educational Level	--	1.06	--	0.98	--	1.25	--	0.98
Age in years	--	1.02***	--	0.99	--	1.01	--	0.99
Log Likelihood	-805.47	-644.63	-1245.55	-913.19	-189.52	-130.95	-1133.89	-827.19
McFadden R^2	0.15	0.13	0.10	0.01	0.15	0.24	0.04	0.05
N	912	673	917	677	917	677	917	677

***<.001; **<.01; *<.05

TABLE 4.11. Ordered Logistic Regressions Models for the Proportion of Relatives with Whom a Particular Mode of Communication is Used Most Often by Number of Friends Local, Frequency of Communication, Degree of Internet Usage and Control Variables.

	Proportion of Relatives with Whom a Particular Mode of Communication is Used Most Often							
	Email		Telephone		Postal Mail		Face-to-Face	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
	Exp(B)	Exp(B)	Exp(B)	Exp(B)	Exp(B)	Exp(B)	Exp(B)	Exp(B)
Relatives Local	0.49***	0.47***	1.07	1.17*	0.53***	0.32***	2.06***	2.08***
Frequency of Communication	1.01	0.97	0.97	0.98	0.84*	0.80*	1.09*	1.08
Degree of Internet Usage	5.09***	4.53***	0.69***	0.58***	0.52***	0.90	0.63***	0.63***
Control Variables								
Sex (Women =1, Men = 0)	--	1.37	--	1.09	--	1.53	--	0.65*
Percent of Life Lived in Area	--	1.02	--	0.98	--	1.23**	--	0.97
Full-time Employment (Employed Full-time = 1, Other = 0)	--	1.06	--	1.03	--	0.65	--	0.97
Married (Married = 1, Other = 0)	--	1.02	--	0.99	--	0.72	--	0.84
Income	--	0.99	--	1.08	--	0.78*	--	.099
Educational Level	--	0.90	--	1.10	--	0.89	--	0.95
Age in years	--	1.01*	--	.099	--	0.99	--	0.98**
Log Likelihood	-815.74	-674.61	-1232.08	-907.66	-212.49	-134.41	-750.03	-524.96
McFadden R^2	0.16	.013	0.01	0.02	0.07	0.15	0.10	0.11
N	919	681	919	681	919	681	919	681

***<.001; **<.01; *<.05

CONCLUSIONS

Several important findings surface from this analysis. First, email has clearly emerged as one of the primary means for communicating with people's closest ties. Nearly 40% percent of respondents use email more often than any other mode of communication (telephone, postal or face-to-face) when communicating with one or more of their three closest friends. Yet, the telephone is used even more frequently, and in sharp contrast postal mail is used hardly at all. Second, use of email differs sharply depending upon whether one's ties are predominately local or non-local. For example, over 80% of people that had none of their three closest relatives living locally used email as the predominant mode of communication with these ties compared to only 2% using it most often when these relatives were local. This was also true for friends where close to 40% of those with all three of their closest friends living outside the local area used email most often to communicate with them whereas when all three friends were local only about 14% of respondents used email as the predominant mode of communication. In contrast, the telephone is used both locally and non-locally among both friends and relatives. Furthermore, even when controlling for demographics we see that as the proportion of friends and relatives local increases use of email as the predominant mode of communication decreases whereas the number of these ties living locally has little effect on whether the telephone is used most often.

In addition, a second set of findings emerges from these data that may help us understand how Internet usage is related to the way we communicate. The more people use the Internet the more likely they are to use email as a predominant mode of communication for their three closest friends and relatives regardless of whether these

ties are local or non-local. Furthermore, as the degree that respondents use the Internet increases use of the telephone as the predominant mode of communication decreases by almost 30% among friends and close to 40% for relatives. While Internet usage does seem to be related to decreases in the other modes of communication the telephone is where the effects are most widely seen.

The fact that the local area remains central to people's social networks is no longer true and technology has evolved along with this changing social milieu (Boase and Wellman, 2006). The findings from this study show clearly that people use email primarily, yet not exclusively, as mode of communication with those social ties outside the local area. The telephone is used both locally and non-locally. This finding supports the work of Wellman (2001) and Hampton and Wellman (2003) concerning "glocalization" (i.e., the propensity for communication technologies to allow people to operate locally and non-locally). Through the media multiplicity afforded in the information age a person may use the telephone to communicate with a neighbor and then use email to communicate with a distant relative.

Indeed, this finding forces further consideration of the replacement hypothesis. Boase and Wellman (2006) have shown that as Internet usage increases so too does the use of other modes of communication. The data from this study suggest a somewhat different relationship. As Internet usage increased the use of the other modes of communication besides email decreased; in particular, this was true of the telephone. As Boase and Wellman (2006) suggest email is by and large an asynchronous form of contact and thus is suited particularly well to long distance communication because regardless of time zones and availability of the recipient a message can be sent quickly.

Further, whereas there are fees for long distance on the telephone there is no additional costs for long distance emails. Thus, there may be niches that email fills without necessarily replacing other forms of communication.

This perspective is further supported in the data from this study when examining the frequency of communication. People use of face-to-face communication with those that they communicate with most frequently, which would suggest that these are friends and family in the local area. Thus, when the ties are local, people see and communicate more and as described above email is used primarily outside the local area whereas the telephone is used locally and non-locally and as such does not show much of a relationship to frequency. Therefore, while some have suggested (e.g., Nie and Erbring, 2000) that Internet usage reduces the importance of local ties that does not seem to be the case here. Instead, email is used in the maintenance of non-local ties and not at the expense of those that are local. This finding is consistent with what other studies have shown (Hampton and Wellman, 2003).

In sum, these data show that people communicate with their closest ties in a variety of ways and these modes of communication are contingent on the availability of the technology as well as whether these ties local or not. However, much remains to be learned about the relationship between mode of communication and the maintenance of core social ties in the information age. For example, the data here cannot address whether the content of messages matters as the early studies of synchronous versus asynchronous communication have suggested. Furthermore, the data cannot speak to how other forms of computer-mediated communication are used in the maintenance of core social ties. Further, no data were collected on the use of the many instant

messengers that allow people to conduct synchronous communication while on-line. Finally, there was no specific attention given to the age of respondents in this study and no data were collected for people under the age of 18 years; a demographic that certainly is more adept at computer mediated communication. These are issues that must be addressed to fully understand how information technologies are used to maintain relationships. However, this paper attempted to contribute one more piece to the puzzle of how people interact in the information age.

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APPENDIX

TABLE 4.12 Descriptive Statistics

	N	Mean	SD
Dependent Variables			
Use Face-to-Face Communication	957	1.039	1.118
No Friends	45.0%		
One Friend	21.4%		
Two Friends	18.1%		
Three Friends	15.5%		
	957	0.509	0.889
No Relatives	69.7%		
One Relative	16.0%		
Two Relatives	7.9%		
Three Relatives	6.4%		
Use Email Communication	952	0.616	0.900
No Friends	61.1%		
One Friend	22.0%		
Two Friends	11.0%		
Three Friends	5.9%		
	957	0.730	1.060
No Relatives	61.7%		
One Relative	15.3%		
Two Relatives	11.5%		
Three Relatives	11.6%		
Use Postal Mail Communication	957	0.072	0.329
No Friends	94.5%		
One Friend	4.3%		
Two Friends	.8%		
Three Friends	.4%		
	957	0.084	0.398
No Relatives	94.9%		
One Relative	2.5%		
Two Relatives	1.9%		
Three Relatives	.7%		
Use Telephone Communication	957	1.979	1.043
No Friends	32.8%		
One Friend	22.4%		
Two Friends	21.1%		
Three Friends	23.7%		

	957	1.675	1.116
No Relatives	24.9%		
One Relative	18.0%		
Two Relatives	21.9%		
Three Relatives	35.2%		
Key Independent Variables			
Number of Three Closest Friends that Live Locally	969	1.979	1.043
No Friends	12.2%		
One Friend	18.9%		
Two Friends	27.8%		
Three Friends	41.2%		
Number of Three Closest Relatives that Live Locally	969	1.088	1.116
No Relatives	41.5%		
One Relative	24.9%		
Two Relatives	16.9%		
Three Relatives	16.7%		
Frequency of Communication Friends (Values range from 3 to 12)	944	8.141	1.962
Frequency of Communication Relatives (Values range from 3 to 12)	947	8.396	1.948
Degree of Internet Use No Use = 0 Use the Internet a Few Times a Week or Less = 1 Use the Internet Nearly Every Day or More = 2	945	1.407	.774
Other Factors			
Sex	819	--	--
Female = 1	57.3%		
Male = 0	42.7%		
Employment	938	--	--
Full time = 1	51.2%		
Other = 0	48.8%		
Marital Status	962	--	--
Married = 1	67.5%		
Unmarried = 0	32.5%		

Household Income Less than $10,000 $10,000 to under $20,000 = 1 $20,000 to under $30,000 = 2 $30,000 to under $40,000 = 3 $40,000 to under $50,000 = 4 $50,000 to under $75,000 = 5 $75,000 to under $100,000 = 6 $100,000 or more = 7	899	4.940	1.979
Educational Level None, or grades 1-8 = 1 Some high school (grades 9-11) = 2 High school graduate (grade 12 or GED) = 3 Business, Technical, or vocational school AFTER high school = 4 Some college, no 4-year degree = 4 College graduate (B.S., B.A., other 4-year degree) = 5 Post-graduate training = 6	966	4.711	1.423

CHAPTER 5

VISUAL DESIGN, ORDER EFFECTS AND RESPONDENT CHARACTERISTICS IN A SELF-ADMINISTERED SURVEY

INTRODUCTION

One of the most common ways that social scientists collect data is through the use of self-administered surveys. Like all other forms of data collection there are many issues that one must consider when designing a survey including how to present the questions and what type of response option formats to provide (e.g., ordinal scales, answer spaces, or mark all that apply). The research of Smith (1995) among others has shown that small differences in the visual display of questions and response categories can dramatically affect the way respondents answer survey questions. Recently, survey researchers have drawn on Gestalt psychology in articulating a theory concerning how respondents perceive visual elements in surveys and have isolated several visual principles believed to be used by respondents in the survey process (e.g., Jenkins and Dillman 1997). These studies have served a catalyst for an emerging body of theory and research concerned with how differences in the visual display of questions and answer categories can affect the way a respondent processes and answers the question. Despite this research, we know little about whether individuals with different demographic characteristics (e.g., age, educational level and sex) are affected similarly by the elements of visual design in self-administered surveys.

Emerging visual design theory centers on how the visual cues in questions and response options affect respondents (Redline and Dillman, 2002) and how respondents follow a set of heuristics in interpreting the visual layout of survey questions and subsequently providing an answer to the query (Tourangeau, Couper, and Conrad, 2004). Experimental research including that of Smyth, Dillman, Christian and Stern (2006a; 2006b), Israel (2006) and Christian and Dillman (2004) has built an empirical foundation

for these theories. This research has addressed issues such as how the order of response options affects the respondent's answer selection (Tourangeau, Couper, and Conrad, 2004), how check all that apply questions differ from forced choice formats (Smyth, Dillman, Christian and Stern, 2006a), as well as how the size of the answer space affects how much information respondents provide (Christian and Dillman, 2004).

While the body of research pertaining to the design of self-administered surveys continues to grow, to date little research has addressed how visual design may differentially affect respondents based on their demographic characteristics. The research that has addressed such issues suggests that older individuals (Knäuper, 1999; Knäuper et al., 1998) and those of lower educational attainment (Krosnick, Narayan, and Smith, 1996) have greater difficulty in comprehending questions and may be more susceptible to the effects of a question's visual design. In addition, Rapoport (1982) suggests that women may be less likely than men to offer concrete opinions in surveys and thus may be more influenced by the placement of a "don't know" option when one is available. However, these findings when compared across studies remain equivocal (Ayidiya and McClendon, 1990; Schuman and Presser, 1981).

The purpose of this paper is to build on the work above by examining how the effects of visual design may differ based on age, education, and sex of respondents. To do so, the paper reports the results of six experiments embedded in a self-administered mail survey. Four of the experiments examine response order effects. These include two experiments concerning response category order effects in behavior based scalar questions, an experiment on response category order effects in an opinion question, which includes a "don't know" response, and response category order effects in a ranking

question. The remaining two experiments deal with graphical manipulations including a check-all-that-apply format versus a forced choice format in a mark all that apply question and the use of different sized answer spaces in an open-ended question. The data for these experiments come from a 2005 random sample mail survey of 1,315 residents of a rural geographic region in the Western United States. The experiments were embedded in two versions of a self-administered mail questionnaire concerning community satisfaction, technology use and civic participation.

THEORETICAL BACKGROUND

Tourangeau (1984) has generally outlined four cognitive steps that respondents engage in while answering survey questions. These steps include comprehending the question, recalling the relevant information, making a judgment, and providing a response. While this model was originally outlined for interview situations, Jenkins and Dillman (1997) have shown its utility in understanding how respondents cognitively process questions in self-administered surveys. Specifically, how the construction and visual design of the survey items affects the answering process. Recent research has supported the fact that at each stage of the answering process the visual elements of the survey design can affect the way respondents answer questions (e.g., Dillman, 2000; Israel, 2006; Torangeau, Couper, and Conrad, 2005). For example, in recalling information, the question stem as well as the response options offered and the order that the response option are displayed can affect how respondents reach their answers (Schuman and Presser, 1981).

In order to further explicate the cognitive processes that respondents undergo while completing a self-administered survey, Schwarz (1996) has suggested that

respondents become *cooperative communicators* when engaging in the act of completing a survey. That is, conversational norms govern the way that respondents interact with the survey instrument. Schwarz (1996) states that there are four underlying maxims involved in the conversational norm including that the information be clearly expressed and understandable to the intended audience, contributions to the conversation be relevant, contributions to the conversation be informative, and contributions be truthful. The survey instrument serves as the researchers side of the conversation and should conform to the maxims. Because the researcher is not present during the conversation the respondent uses all of the verbal (words in the queries and answer categories) and graphical (arrows, check boxes, answer spaces, etc) cues to guide them in the conversation (Christian and Dillman, 2004). Thus, the visual design of the survey questions become paramount to the conversation in that it serves as a guide to how respondents interact with the researcher.

Results From Visual Layout Research

Research has only recently begun to develop a theoretical understanding of how visual cues (including words, symbols and numbers) used in the design of self-administered questionnaires affect respondents. The emerging work on visual design theory draws on research concerning cognition and visual perception and integrates them into a working model of how respondents answer questions in self-administered surveys (Redline and Dillman, 2002; Jenkins and Dillman, 1997). Thus, building on the conversational perspective by adding an element of how the visual design of a survey question effects the fluency of the conversation and, in cases where the visual design is poor, violating the maxims as delineated by Schwarz (1996). Recent empirical tests have

shown that visual cues such as the size of the answer space (Christian and Dillman, 2004), visual grouping in the questions formats (Smyth, Dillman, Christian and Stern, 2006b), order of the response options (Torangeau, Couper, and Conrad, 2005), and use of directional arrows (Redline and Dillman, 2002) all affect the ways respondents answer questions.

In related work, Torangeau, Couper, and Conrad (2005) argue that there are five specifically visual interpretive heuristics respondents follow when evaluating the visual elements of survey questions and the violation of these heuristics can affect the answering process. The five heuristics include: 1) middle means typical; 2) left and top means first; 3) near means related; 4) up means good; and 5) like means close. As the authors explain "each heuristic assigns a meaning to a spatial or visual cue" (Tourangeau, Couper, and Conrad, 2005: 370). As with the research noted above concerning visual design theory, for each of the heuristics the underlying principle is that when the visual presentation of the question does not conform to the expectation of the respondent, proper interpretation of the meaning of the question can be lost leading to measurement error.

One of the lessons the research cited above has taught us is that respondents often answer questions in ways that were unanticipated by the researcher for reasons having to do with questionnaire design rather than their position on a particular question or issue (Dillman, 2000). One of the most well documented theories concerning these response errors is that of "satisficing" (Krosnick and Alwin, 1986). Satisficing occurs when respondents fail to expend to the necessary energy needed to answer a question and thus fail to provide an optimal response. While there are reasons why a respondent may satisfice that are outside of the researchers control, one area that can be controlled by the

researcher is the visual design of the question. The more respondents are cognitively taxed by the visual design of questions—including the violation of the interpretive heuristics—the more likely respondents are to satisfice, thus increasing measurement error (Israel, 2006).

Research has shown that satisficing occurs when a question format does not conform to the respondent's expectation (Tourangeau, Couper, and Conrad, 2005). For example, it has been widely documented that the order in which response options are presented has an effect on the answers that respondents choose. In keeping with Torangeau, Couper, and Conrad's (2005) heuristic of "top means first" respondents tend to look at a scale in scalar questions and assume that first option presented represents one of two endpoints (e.g., strongly agree). Respondents then expect that the other end of the scale will represent the opposing position (e.g. strongly disagree). When this is not the case a respondent can become confused and provide inaccurate answers (Sudman and Bradburn, 1982). Additionally, work by Krosnick (1991, 1999) has shown that respondents tend to choose earlier items in a list because they find the first position that they can agree with and consider it a satisfactory answer rather than reading and considering each response option separately. When this occurs a pattern of primacy is found; that is, selecting response options that appear at the top of a list. These effects are not only seen in scalar questions, but also, for example, in mark all that apply questions where the respondent is asked to select each option that pertains to them from a list (Smyth, Dillman, Christian and Stern, 2006a). In addition, research has shown that the combination of verbal and graphical elements can affect a respondent's propensity to satisfice (Smyth, Dillman, Christian and Stern, 2006a).

However, the research on satisficing and primacy as universal phenomena remains equivocal. For example, Dillman et al. (1995) found that across multiple studies, questions, and survey modes that satisficing behavior occurred in only about a fourth of the experiments (22 out of 82 experiments showed results consistent with satisficing). The authors suggest that question content and response category options can have an effect on way respondents answer questions. A similar perspective has been suggested by Sudman, Bradburn, and Schwarz (1996) where they state that primacy effects are more likely when the first two response categories are agreeable and recency effects when the first two response categories are disagreeable (See also Dillman et al., 1996)

The Influence of Respondent Characteristics

Theory concerning visual layout and design in self-administered surveys is virtually devoid of any reference to respondent characteristics. As a result, the empirical tests to date have not taken into account how various question formats may affect respondents differently based on their demographic characteristics (e.g., age, education, and sex). Furthermore, the research that has examined demographic differences in respondent behavior was developed independent of theories of visual design. Below, the previous research on respondent characteristics is summarized.

The most common respondent characteristics examined have been age and educational attainment. These respondent characteristics have been analyzed largely because they serve as proxies for decreasing cognition and opinionation with increases in age (Glenn, 1969) and greater cognition with increases in the degree of educational attainment (Knäuper, 1999).

Research has attempted to test question order effects by educational attainment with somewhat mixed results (Schuman and Presser, 1981). Ayidiya and McClendon (1990: 244) found that in self-administered mail surveys there were response order effects among the samples as a whole; however, there was no "reliable evidence" for systematic effects among individuals of lower education. In contrast, other research has found significant response order effects with respect to education; Knäuper (1999), Knäuper et al. (1998) and Narayan and Krosnick (1996) have all reported response order effects are more prevalent among people with lower levels of education. The reasoning provided for the effects among individuals of lower education has been their level of cognitive sophistication. According to Krosnick (1992) respondents with lower levels of education are less likely to do the necessary cognitive work needed in evaluating response categories or fully comprehending the question stem; thus, they are likely to satisfice as evidenced by primacy.

Knäuper (1999) and Knäuper et al. (1998) argue that the same issues are present among individuals of older age (60 and older). Using cognitive psychology as the basis of their argument, they suggest that as individuals age their diminished ability to comprehend questions (which could be largely affected by visual design) and recall memories (perhaps not as affected by visual design) makes them more susceptible to response order effects and other question problems. Knäuper (1999) suggests that age is a more powerful predictor of response order effects and that the impact of age is not explained by educational attainment. However, Knäuper (1999) concedes that future theoretical work is needed to better explain response effects in older respondents.

Fewer studies have examined response effects by the sex of the respondent. However, research does suggest that there could be reasons for their examination. For example, research on the use of a "don't know" category has consistently shown that women are more likely to provide this response than their male counterparts in both adult and adolescent samples (See Rapoport, 1982 for a review). Rapoport (1982) suggests that this effect could be the enduring affects of differential socialization in that the effect is still persistent after controlling for issues such as question subject knowledge. That is, women are socialized to have lower levels of opinionation than men. This perspective has been supported in research that examines the number of affirmative answers provided in forced choice questions (Glenn, 1969).[9] The implications for response effects could be very important. If women and men differ in their level of engagement in survey items, then theories of visual design must address this issue. Notably, this research precedes the development of the conversational model of Schwarz (1996) and is in need of further explication.

Summarizing, research on visual design has shown that visual cues (both verbal and graphical) embedded in the construction of self-administered surveys convey messages to respondents. However, this research has yet to explicitly address how respondents that differ by age, education and sex may be differentially affected by visual design. Further, research concerning respondent characteristics has not been guided by any unifying theory that seeks to explain the effects reported (Knäuper, 1999). The experiments described in the following sections seek to unify these literatures by testing for the effects of visual design in a self-administered mail survey and analyzing whether the effects vary by respondent age, education and sex.

[9] Glenn (1969) does not explicitly discuss this point in his paper, but his data do show this trend.

PROCEDURES

The experimental comparisons were embedded in self-administered mail survey with two experimental versions designed to ask residents about their community satisfaction, technology use and civic participation. The procedures included randomly assigning half of the respondents one version of the survey and the other half the second version. The overall design of the surveys was very similar with a slight color difference (white and off-white). The 39-item survey was conducted in the winter of 2005. A random sample of 2,000 households was drawn with 1,315 of the households completing and returning the survey culminating in, after the exclusion of undeliverable surveys, a response rate of 69.1%.

The implementation design used three mail contacts. The first contact contained a personally signed cover letter explaining the survey's goals and content, a self-addressed stamped envelope, a two dollar token incentive and the questionnaire. Two weeks later follow up post card was sent to all respondents that thanked those who had responded and encouraged those that had not to please do so. Finally, about two weeks after the post card a replacement questionnaire was sent to individuals who had not yet responded along with a personally signed letter encouraging them to fill out the questionnaire.

Based on previous work concerning respondent characteristics and survey response effects (e.g., Knäuper 1999; Narayan and Krosnick, 1996; Rapoport, 1982), individuals were partitioned in the following way (Table 5.1 shows the distributions). To examine age, respondents were put into one of two groups, either the age of 60 years and older or under the age of 60. For education, respondents were originally asked to report their level of educational attainment (None, or grades 1-8, Some High School [grades 1-

9], High School graduate [grade 12 or GED equivalent], Business, Technical, or Vocational Schooling after High School, Some college, no 4-year degree, College Graduate, and Post graduate training). In keeping with previous studies (e.g., Krosnick, Narayan, and Smith, 1996), individuals were then divided into two groups: less than a college degree or college degree or more. Sex was partitioned as women or men.

TABLE 5.1. Percentage of Respondents by Demographic Category and Version of the Questionnaire.

	Version 1	Version 2	Total
Demographic Characteristic	%	%	n
Age 60 and Older	49.8	50.2	325
Under the Age of 60	50.3	49.7	721
College Degree or More	49.6	50.4	707
Less than a College Degree	51.7	48.3	563
Men	50.4	49.6	468
Women	50.4	49.6	587

EXPERIMENTS AND RESULTS

Verbal Language Manipulations—Response Order Effects

The order in which the response options are displayed has consistently been shown to affect the response distributions (Israel, 2006). Response options that appear first in the list tend to be chosen more than those appearing later in the list, a pattern in the data known as primacy (Krosnick and Alwin, 1987). Furthermore, Torangeau,

Couper, and Conrad (2005) have shown that respondents follow the heuristic of "top means first"; that is, the first response option shown serves as the endpoint for a polar scale. Thus, respondents assume that the other end of the scale is the opposite value of the first response. In addition, scales tend to start with positive values and end with negative values. When a question does not conform to this format response order effects are often found (Torangeau, Couper, and Conrad, 2005; Sudman and Bradburn, 1981).

Response order manipulations in scalar questions

The first two verbal manipulation experiments deal with response order effects in behavior based scalar questions. The questions ask respondents to recall a behavior ("About how often do you travel more than 100 miles outside the area?" and "How often do you use an Internet to access the web or for email?") (Figure 5.1). The first question had five possible responses that included "once or more a week," "once a more or a month," "once or more a year," "about once a year" and "less than once a year." The second question concerning Internet usage was based on a subset of individuals that answered a question that asked whether or not they used the Internet reducing the sample size from 1,315 to 1,269. There were four response options including "everyday," nearly everyday," a few times per week," and "once a week or less." The response options in the first version of both questions started with the high end of the behavior (e.g., everyday) and the second version the response options were reversed starting with the lowest level of behavior (e.g., once a week or less) to test whether satisficing or primacy occurred in these questions and then whether these effects were more robust among individuals with certain demographic characteristics. It is hypothesized that based on Krosnick's (1999) satisficing theory and primacy that there would be a propensity for

respondents to choose early options in the list. Furthermore, based on the work of Knäuper (1999) and Narayan and Krosnick (1996) individuals age 60 and older will be more affected than those under sixty and respondents with less than a college degree will be more subject to response order effects than people with a college degree or more. There is no expectation that men and women will differ in their response patterns.

Manipulations of response options in behavior based questions

FIGURE 5.1.

High to Low Behavior	Reverse Order
7. About how often do you travel more than 100 miles outside the area? ❑ Once or more a week ❑ Once or more a month ❑ Once or more a year ❑ About once a year ❑ Less than once a year	**7. About how often do you travel more than 100 miles outside the area?** ❑ Less than once a year ❑ About once a year ❑ Once or more a year ❑ Once or more a month ❑ Once or more a week
High to Low Behavior	**Reverse Order**
26. How often do you use an Internet connection to access the web or for email? ❑ Every day ❑ Nearly every day ❑ A few times per week ❑ Once a week or less	26. How often do you use an Internet connection to access the web or for email? ❑ Once a week or less ❑ A few times per week ❑ Nearly every day ❑ Everyday

Regarding how often respondents traveled outside the local area, the reversal of the response categories did not lead to differences in the response distributions (Table 5.2). In analyses not shown here, there were no significant differences found for any of

the demographic groups as result of reversing the response options. It may be that people were easily able to recall this information and thus not as susceptible to the direction of the response options.

In the second experiment concerning the order of response options the question concerned the amount that respondents used the Internet. The reversal of response options led to significant differences in the response distributions (Table 5.2). When "ever day" was first in the list it was selected at much higher rates than when it appeared last (56.3% and 37.5%, respectively). The reason for this appears be the similarity in the response options "every day" and "nearly every day." In version 1, where "nearly every day" appeared below "every day," 15.6% of respondents chose it; whereas, in version 2 where it appeared before "every day," 28.8% of respondent chose the response option. This appears to be a classic example of satisficing where respondents found the first response option they reasonably justify and chose it. Due to the similarity in "every day" and "nearly every day" the item that appeared first was chosen. In addition, there is some evidence of primacy. In version 1, "once a week or less" was listed fourth and in version 2 the option appeared first. When "once a week or less" was listed first 15.3 % of the respondents receiving that version selected it compared to the 12.8 % of respondents that chose it when it appeared last.

Perhaps the most striking finding is that for one question there are obvious primacy effects as predicted by Krosnick and Alwin's (1986) model. For the other question, there is obviously no effect, which is consistent with the research reported by Dillman et al. (1995). These differences suggest that there may be some underlying aspect of how these questions differ that makes a difference. One possibility is that the

first two categories of the Internet use question “every day” or “nearly every day” are likely to be interpreted by respondents as acceptable categories. Thus, when the first category is read, it is judged acceptable and perhaps the respondent does not process the other one. Whether this is the case, these findings suggest something more complex than a simple response category order effect that is consistent regardless of question or category content. Examining the influence of personal characteristics may provide further insight into possible reasons.

TABLE 5.2. Response Distributions for Manipulations of Response Options in Behavior Based Questions: Percentages of Respondents choosing Each Response When Given Categories in Order from High to Low Levels of Behaviors and the Reverse Order.

Question 7			**Question 26**		
Responses	High to Low Behavior (n=654)	Reverse Order (n=653)	Responses	High to Low Behavior (n= 638)	Reverse Order (n=631)
(1) Once or more a week	4.1	5.8	(1) Every day	**56.3**	**37.5**
(2) Once or more a month	38.1	37.9	(2) Nearly every day	**15.6**	**28.8**
(3) Once or more a year	45.5	43.0	(3) A few times per week	15.4	18.5
(4) About once a year	6.6	6.3	(4) Once a week or less	12.8	15.3
(5) Less than once a year	5.7	7.0			
Total	100	100		100	100
Means	2.71	2.72		1.85	2.12
Difference in Means	t=-0.14, p=.885			t=-3.93, p=.000	
Overall Chi-Square	3.33, p=.504			41.57, p<.000	

We now turn to the demographic differences (Table 5.3). Highlighted in the table are the two response categories for which the response distributions showed significant differences by version (every day and nearly everyday). Across all the demographic groups the same relationship as seen in the overall distributions is found. Thus, regardless of age, educational attainment, or sex, the every day category was chosen more when it appeared first than when it appeared last and the nearly every day response was chosen at higher levels when it appeared before that of every day leading to significant differences in the response distributions (Chi-Square tests show $p<.01$ for each group). However, the effect seems to be greatest among those under the age of 60, with a college degree or more, and men. In terms of primacy, the question subject itself seems to have some influence as suggested by Dillman et al. (1996). While one could interpret some findings as evidence of primacy in the overall response distributions, e.g., the greater propensity to choose "once a week or less" when it appeared first rather than last in the list of options, this pattern did not occur across demographic groups. What we see is an internal order effect that did not cut across demographic groups. For example, more respondents over the age of 60 actually chose "once a week or less" more when it appeared last than when it was listed first. There was no primacy effect found among people with less than a college education and women; whereas there is evidence for primacy among men and people with a college degree or more. The differences found by age and education may be explained by the fact that people over 60 and those with less than a college degree may know concretely that they rarely use the Internet; previous research on Internet usage has shown this to be true (Katz et al., 2000).

TABLE 5.3. Response Distributions for Manipulation of Behavior Based Question for Each Demographic Group: Percentages of Respondents choosing Each Response When Given Categories in Order from High to Low Levels of Behaviors and the Reverse Order.

	Respondent Characteristic											
	60 years of age and older		Less than 60 years		College education or more		Less than College education		Women		Men	
	Version 1 HLB[a]	Version 2 Reverse Order	Version 1 HLB	Version 2 Reverse Order	Version 1 HLB	Version 2 Reverse Order	Version 1 HLB	Version 2 Reverse Order	Version 1 HLB	Version 2 Reverse Order	Version 1 HLB	Version 2 Reverse Order
	n=102 (%)	n=100 (%)	n=334 (%)	n=331 (%)	n=316 (%)	n=307 (%)	n=176 (%)	n=190 (%)	n=244 (%)	n=239 (%)	n=193 (%)	n=196 (%)
(1) Every day[c]	**54.9**	**38.0**	**59.6**	**39.3**	**62.0**	**42.7**	**46.6**	**29.5**	**57.4**	**38.9**	**59.6**	**37.2**
(2) Nearly every day	**14.7**	**32.0**	**14.1**	**28.4**	**14.9**	**26.4**	**17.0**	**33.2**	**14.8**	**29.7**	**14.0**	**29.6**
(3) A few times per week	12.7	18.0	15.0	17.2	14.6	18.9	15.9	17.9	13.9	17.2	15.5	17.9
(4) Once a week or less	17.6	12.0	11.4	15.1	8.5	12.1	20.5	19.5	13.9	14.2	10.9	15.3
Total	100	100	100	100	100	100	100	100	100	100	100	100
Chi-Square	11.58, p=.009		32.22, p=.000		24.77, p=.000		16.69, p=.001		21.53, p=.000		22.64, p=.000	
Means	1.93	2.04	1.78	2.08	1.94	2.22	1.64	1.87	1.84	2.07	1.78	2.11
t-test[b]	t=-0.69, p=.486		t=-3.52, p=.000		t=-3.91, p=.001		t=-2.14, p=.033		t=-2.24, p=.025		t=-3.08, p=.002	

[a] "HLB" refers to "High to Low Behavior" where every day was the first option listed and once a week or less was the last option listed.

[b] Independent samples t-test. Means based on values ranging from 1 to 4.

[c] Bolded percentages represent two categories with biggest differences by version in both the total sample and by demographic group.

Category Effects in the Presence of a Don't Know Response Option

The third experiment examines response order effects in an opinion based scalar question, which includes a "don't know" response option (Figure 5.2). The question asked about the effect respondents thought the Internet was having on people that live in the local area. The response options included: "very beneficial," "mostly beneficial," "neutral," "mostly bad," "very bad," and "don't know." Though the response options were reversed, the "don't know" appeared at the bottom of both lists. This experiment is a partial reversal because the "don't know" response appears at the end of both lists; that is, only the opinion responses are reversed. In that research has shown that respondents tend to look for more positive answers in scales (Dillman, 2000) it is likely that the don't know response will be used at higher levels in the reversed order (where the options begin with very bad) because the respondents may not see the response in the version starting with very beneficial. As such, in cases where respondents seek to provide a non-opinion in the version starting with very beneficial they will most likely choose the neutral category. Further, based on the work of Rapoport (1982) and Knäuper (1999) one would expect that women would be more likely to provide the "don't know" or "neutral" response than men and that individuals over the age of 60 and with less than a college degree would be most affected by the reversal of response options thus meaning higher percentages of non-opinions than younger individuals.

Manipulations of response options in an opinion based question with a don't know response option

FIGURE 5.2.

Expected Order	Reverse Order
23. One of the recent changes that appears to be affecting some people in Lewiston/Clarkston is the Internet. What kind of an effect do you think the Internet is having on most people who live in the Lewiston/Clarkston area?	**23. One of the recent changes that appears to be affecting some people in Lewiston/Clarkston is the Internet. What kind of an effect do you think the Internet is having on most people who live in the Lewiston/Clarkston area?**
❑ Very beneficial ❑ Mostly beneficial ❑ Neutral ❑ Mostly bad ❑ Very bad ❑ Don't know	❑ Very bad ❑ Mostly bad ❑ Neutral ❑ Mostly beneficial ❑ Very beneficial ❑ Don't know

Table 5.4 reports the results for response distributions both with the "don't know" category and with it removed from the response distribution. It is clear that when the response options start with the negative categories respondents are more likely to choose the "don't know" category compared to when the response options begin with positive categories (23.4% and 14.5%, respectively) what also may be considered the expected order. When the response options appear in the expected order, respondents are more likely to choose the "neutral" response than in the alternate version (23.5% and 16.5%, respectively). The reason for this finding may be that when respondents were given the response options in the expected order they did not scan the entire set of response options and in cases where they had no opinion they marked neutral; however, when given a scale that did not conform to their expectations they scanned the entire set of responses and after seeing the "don't know" response at the bottom of the options they chose it.

TABLE 5.4. Response Distributions for Opinion Based Scalar Question When the Response Options appear in Expected and Reverse Order and with the Don't Know Option Included and Removed from the Distribution.

	With the Don't Know Option			**Without the Don't Know Option**		
	Version 1	**Version 2**		**Version 1**	**Version 2**	
	Expected [a] Order	**Reverse Order**	**Chi-Square**	**Expected [a] Order**	**Reverse Order**	**Chi-Square**
	n=638 (%)	n=631 (%)		n=554 (%)	n=497 (%)	
			$X^2 = 28.65$, p=.000			$X^2 = 11.91$, p=.018
Very beneficial	19.1	15.4		22.4	20.1	
Mostly beneficial	40.0	39.4		46.8	51.5	
Neutral	23.5	16.5		27.4	21.5	
Mostly bad	2.3	4.5		2.7	5.8	
Very bad	.6	.8		0.7	1.0	
Don't know[b]	14.5	23.4		--	--	
TOTAL	100	100		100	100	

[a] Expected order refers to response options that start with the most positive option (e.g., very beneficial) and end with the first option's opposite (e.g, very bad).
[b] The "don't know" response option appeared as the last option in both versions.

With the clear effects found in the response distributions for the use of the "don't know" and "neutral" response options, Table 5.5 reports the percentages for the use of the "don't know" and "neutral" response options by respondents' characteristics. In terms of the "don't know" category every demographic group except respondents with less than a college degree exhibited the same behavior as that seen in the overall response distributions; when the response options appeared in the expected order respondents were much less likely to choose the "don't know." While respondents over the age of 60 did report higher levels of non-opinionation than younger respondents each group appears to be similarly affected by the reversal of response options. This is also true for the difference between women and men. Women did report higher levels of non-opinionation overall but both sexes were more likely to choose the "don't know"

response when given the version that did began with “very bad.” Turning to the “neutral” category respondents over 60, those with more than a college degree, and women showed the greatest propensity to choose this option more in the expected order than in the reverse order. It is impossible to know whether this finding is the product of higher levels of non-opinionation as suggested by Rapoport (1982) or the effects of the up means good and middle means typical heuristics. In all likelihood it is combination of both. However, it is clear that the reversal of response options did not equally affect all demographic groups in terms of their propensity to choose the conceptual middle category (“neutral”).

TABLE 5.5 Percentage of Respondents that used the Don't Know and Neutral Categories for Each Demographic Group by Whether the Response Options Appeared in Expected of Reverse Order.

	Use of "Don't Know" Category					Use of "Neutral" Category				
	Expected Order		Reverse order			Expected Order		Reverse order		
	%	n	%	n	Chi-Square	%	n	%	n	Chi-Square
Overall	14.5	648	23.4	649	16.75***	23.5	649	16.5	648	9.86**
Over 60	21.5	160	34.4	158	6.16**	23.4	158	13.1	160	5.65*
Under 60	7.3	357	14.6	362	9.95**	24.1	357	18.5	362	3.34
Less than college degree	11.8	178	15.6	173	1.08	22.6	266	19.2	287	0.97
College degree or more	14.7	442	26.3	464	18.56***	24.0	354	13.7	350	12.8***
Men	9.3	227	18.3	235	7.92**	22.9	227	16.6	265	2.91
Women	13.8	283	22.1	294	6.75**	24.6	289	17.0	294	5.07*

***p ≤ .001, ** p≤ .01, * p≤ .05

While it was hypothesized that the overall response distributions for the three scalar questions would show satisficing and a pattern of primacy this was only true in two of the three experiments. As mentioned above it may be that people were able to easily recall how often they traveled 100 or more miles outside the area with relative ease and thus were not as susceptible to the order of the response options. Moreover, this experiment showed no effects across the demographic groups. In the second experiment dealing with degree of Internet usage there was satisficing and primacy. In addition, all the demographic groups showed satisficing behavior albeit to varying degrees. However, primacy occurred only among men and people with a college degree or more. In the third experiment we saw that the don't know option was chosen at higher percentages in the reversed order which was clearly due to the visual layout of the question. This pattern held true across the demographic groups. Thus, across these three experiments it seems that the visual layout of the questions was what affected the response distributions and this was the case regardless of respondent characteristics. However, because there was not evidence of response effects in all three experiments, question content, as suggested by Dillman et al. (1996), seems to be of equal importance. Indeed, this finding raises fundamental questions about the primacy literature.

Response Order Manipulations in a Ranking Question

Survey researchers often ask respondents to rank a series of items. In ranking questions, respondents are generally given a list of response options and asked to rank them based on a given criterion generally found in the query (e.g., What is the biggest problem?). These questions may be very difficult for respondents to answer for two reasons. First, respondents must carry the information from the query to the list of

response options. For example, is the query asking the respondent to rank the options from best to worst or vice versa and in what direction should the numbers be used (e.g., does 1 mean worst or best)? Second, respondents must evaluate each response option relative to the others in order to provide a ranking; thus the more options there are the more difficult the task.

Although response order effects, for example, satisficing and primacy, are widely documented in scalar questions (e.g., Dillman, 2000; Krosnick, 1999; Schuman and Presser, 1981) as well as in mark all that apply questions (e.g., Smyth, Dillman, Christian and Stern, 2006a, 2006b) very little research has addressed whether these response order effects are present in ranking questions. However, based on the fact that response order effects do occur across different question formats and were seen in the previous section satisficing and primacy can be predicted to exist in ranking questions.

In the only test of reversing response options in a ranking question that we could locate, Ali (2004) found that the reversal affected how respondents ranked the options on a scale from 1 to 10 where 1 represented the biggest problem in the community and 10 represented the smallest problem. Specifically, the data show that options at the top of the list and the bottom of the list showed significant differences where options listed first received a higher rank (i.e., were listed a "bigger problems"). Nonetheless, some researchers have suggested that ranking questions actually produce better data than the traditionally used rating questions in that respondents tend to answer rating questions very quickly and without expending much in terms of cognitive energy (see Krosinck, 1999 for review). However, Krosnick's (1996) work on satisficing and primacy in addition to Ali's (2004) findings would suggest that due to the cognitive work necessary

to answer a ranking question, one would expect to find response order effects. Furthermore, the need to carry the information from the query and evaluate each option may prove more cognitively taxing for older individuals as well those with lower levels of education (Knäuper, 1999).

The fourth experiment in the present study examines two versions of a ranking question (Figure 5.3). The question asked: "Which of these do you believe are the largest and smallest problems facing residents of the Lewiston & Clarkston area? Use "1" for the largest problem, "2" for second largest problem and so forth until you have completed all eight." The response options were "lack of community involvement," taxes are too high," lack of affordable health care," "lack of money for local schools," "lack of affordable housing," "lack of good jobs," "too much crime," and "too much drug use." In one version of the questionnaire the response appeared in the order above and in the second version they were reversed. Some respondents either provided the same ranking to different items (e.g. providing a "1" for more than one option) or did not provide a ranking for all eight items. These respondents were removed from the data reducing the sample size from 1,315 to 1,012; a difference of 303 cases.

I expect, due, in part, to the difficulty of ranking questions and the resulting satisficing that earlier options will be labeled larger problems (i.e., given lower numbers where 1 means the largest problem). Thus, the major difference will most likely appear in the first few and last few response options. Because the response options have been reversed it is possible to test this hypothesis. The middle categories should not exhibit the same kind of differences as seen in the first and last options. Similar to the previous hypotheses concerning the effects of reversing the response options, based on previous

research one should expect that those respondents older in age and with less than a college degree would be most affected by the reversal of the response options.

Manipulation of Response Options in a Ranking Question

FIGURE 5.3.

9. Which of these do you believe are the largest and smallest problems facing residents of the Lewiston & Clarkston area? Use "1" for the largest problem, "2" for second largest problem and so forth until you have completed all eight.		**9. Which of these do you believe are the largest and smallest problems facing residents of the Lewiston & Clarkston area? Use "1" for the largest problem, "2" for second largest problem and so forth until you have completed all eight.**	
Lack of community involvement ……..	☐	Too much drug use……	☐
Taxes are too high……..	☐	Too much crime overall……..	☐
Lack of affordable health care…….	☐	Lack of good jobs……..	☐
Lack of money for local schools……	☐	Lack of affordable housing……	☐
Lack of affordable housing……	☐	Lack of money for local schools……	☐
Lack of good jobs……..	☐	Lack of affordable health care…….	☐
Too much crime overall……..	☐	Taxes are too high……..	☐
Too much drug use……	☐	Lack of community involvement ……..	☐

Table 5.6 reports the results for each of the response options and compares the results across versions using t-tests to analyze the mean score differences and chi-square tests to examine the overall response distributions for each response option. As hypothesized, the response options that appeared in the first two and last positions ("lack of community involvement," "taxes too high," too much crimes," and "too much drug use") depending on questionnaire version showed the largest effects and the middle categories seem virtually unaffected by the reversal as evidenced by the t-scores. For example, when "too much drug use" appeared first in the list of options 22.8% of respondents labeled it as the biggest problem whereas when it appeared last only 16% of respondents reported that it was the largest community problem thus increasing the mean for the version where the option was listed eighth. These findings support those of Ali

(2004) and show that primacy occurs in ranking questions in the same way as rating questions.

Table 5.6. Percentage of Respondents Ranking Problems in the Community by Position the Option was Listed in the Response Categories.

	Response Item															
	Lack of community involvement		**Taxes too high**		**Lack of affordable health care**		**Lack of money for local schools**		**Lack of affordable housing**		**Lack of good jobs**		**Too much crime**		**Too much drug use**	
	Option 1st n=499	Option 8th n=513	Option 2nd n=499	Option 7th n=513	Option 3rd n=499	Option 6th n=513	Option 4th n=499	Option 5th n=513	Option 5th n=499	Option 4th n=513	Option 6th n=499	Option 3rd n=513	Option 7th n=499	Option 2nd n=513	Option 8th n=499	Option 1st n=513
Largest Problem																
1	3.0	3.5	15.0	11.5	5.8	6.6	4.8	6.6	3.4	1.2	49.9	46.0	2.2	4.1	16.0	22.8
2	5.6	5.5	17.4	13.8	14.0	14.6	12.8	13.1	9.6	12.6	13.8	16.6	8.6	11.7	22.4	17.5
3	8.4	7.4	10.4	11.9	16.0	16.4	15.6	12.9	8.2	12.5	16.6	13.8	12.8	10.1	13.6	15.2
4	13.0	9.4	12.2	10.5	16.8	15.0	15.0	14.0	14.6	12.3	7.0	10.9	13.4	15.6	8.8	11.7
5	11.4	9.2	10.0	11.3	17.2	13.6	14.4	14.8	18.2	15.0	5.6	6.4	11.8	16.4	10.4	12.5
6	12.2	11.9	10.2	9.9	11.8	12.3	16.2	13.6	17.8	18.7	2.8	3.5	17.4	18.3	8.4	9.6
7	13.4	13.3	13.6	15.8	11.2	14.0	9.4	14.4	14.4	17.0	2.4	1.8	19.6	13.6	13.2	8.4
8	32.9	40.0	11.0	15.2	7.0	7.4	11.6	10.5	13.6	11.3	0.9	0.5	14.0	10.1	7.0	2.3
Smallest Problem																
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Means	5.79	6.04	4.25	4.65	4.41	4.44	4.27	4.34	5.14	5.08	2.31	2.38	5.25	4.89	3.88	3.47
t-test	t=-1.85, p=.065		t=-2.69, p=.007		t=-.266, p=.790		t=-.205, p=.837		t=.460, p=.646		t=-.553, p=.581		t=2.92 p=.004		t=2.99 p=.003	
Chi-Square	X^2=8.36, p=.302		X^2=10.19, p=.178		X^2=4.60, p=.700		X^2=9.34, p=.204		X^2=16.27, p=.023		X^2=10.08, p=.184		X^2=20.96, p=.005		X^2=30.19, p=.000	

Having seen the effect of reversing the response options among the first two and last two categories in the overall distributions, we will now examine whether there are differences by demographic group in the mean values provided for these four response options. The first row in Table 5.7 shows the means and test for mean differences for the four response options for the total sample. The first option "lack of community involvement" approaches significance (p.=.065) while the other three options reach statistical significance. Regardless of significance level, it is important to notice that the t-scores are negative in the first two columns and positive in the second two columns. What this shows is that the mean scores in each case were lower (meaning respondents ranked the option as a larger problem) when the response option appeared earlier in the list; thus, the position of the response option clearly affects how it was ranked. The mean differences by group that are either significant or approaching significance (p.<.10) are highlighted in the table. No demographic group showed significant differences across all four response options. However, respondents with a college degree or more seemed to be the least affected by the reversal of the response options. Of the four response options individuals with a college degree or more only showed a primacy effect for "lack of community involvement" (listed first in one version and last in the other). Thus, in keeping with previous research (e.g., Naryan and Krosnick, 1994), it appears that respondents with less than a college degree were affected by the reversal at higher levels than those with a college degree or more. Respondents over the age of 60 do not appear more likely than those under the age of 60 to be affected by the reversal as evidenced by the fact that both groups showed mean differences in three out of the four response options albeit not the same options. Thus there is little support for the

hypotheses that age affected the propensity for primacy in this experiment. Furthermore, overall the reversal of the response options did affect all the demographic groups.

TABLE 5.7. Percentage for Each Demographic Group Ranking Problems in the Community by When the Option was Listed in the First Two or Last Positions in the List.

	Response Item																					
	Lack of Community Involvement						**Lack of affordable housing**						**Too Much Crime**						**Too Much Drug Use**					
	Option 1st		Option 8th				Option 2nd		Option 7th				Option 7th		Option 2nd				Option 8th		Option 1st			
	mean	n	mean	n	t	p	mean	n	mean	n	t	p	mean	n	mean	n	t	p	mean	n	mean	n	t	p
Overall	5.78	499	6.03	513	-1.84	**.065**	4.25	499	4.65	513	-2.69	**.007**	5.25	499	4.88	513	2.91	**.004**	3.88	499	3.47	513	2.99	**.003**
Respondent 60+	5.48	108	6.00	119	-1.82	**.069**	3.90	108	4.52	119	-1.93	**.054**	4.96	108	4.36	119	2.20	**.029**	3.70	108	3.31	109	1.34	.180
Respondent under 60	5.91	305	6.00	311	-.516	.606	4.42	305	4.80	311	-2.01	**.044**	5.46	305	5.13	311	2.12	**.034**	4.03	305	3.51	311	3.02	**.003**
Respondent < than college degree	6.04	335	6.11	338	-.477	.633	4.07	335	4.57	338	-2.72	**.007**	5.14	335	4.75	338	2.51	**.012**	3.83	335	3.39	338	2.60	**.010**
Respondent college degree or more	5.21	156	5.90	161	-2.84	**.005**	4.62	156	4.82	161	-.768	.443	5.49	156	5.24	161	1.20	.231	3.95	156	3.71	161	.999	.318
Men	5.52	185	5.83	196	-1.35	.178	4.11	185	4.53	196	-1.68	**.094**	5.24	185	4.80	196	2.20	**.028**	4.04	185	3.42	196	2.82	**.005**
Women	5.97	232	6.14	236	-.893	.372	4.38	232	4.86	236	-2.23	**.026**	5.39	232	5.01	236	2.05	**.041**	3.89	232	3.47	236	2.05	**.040**

Graphical Language Manipulations

In addition to the experiments above testing how verbal language manipulations affect respondents (e.g., response order effects), there are two experiments in this study concerning how graphical languages affect respondents. To date, little research has examined whether graphical languages affect respondents with different demographic characteristics equally. However, the same concerns noted above about how respondents satisfice (in some cases as evidenced by primacy) provide a reason to manipulate graphical languages in question formats to help respondents in providing optimal answers and reducing measurement error. Two types of questions that have been shown to exhibit large effects in response distributions based on graphical manipulations are mark all that apply questions and open-ended questions.

Forced Choice versus Check-All-That-Apply Formats

One way that survey researchers have sought to deal with satificing and primacy in mark all that apply questions is by using a manipulation of graphical language. Specifically, through the use of the forced choice format where respondents are given answer spaces (often check boxes) and asked to provide and affirmative (e.g., "Yes") or negative (e.g., "No") response instead of only checking the responses that apply to them as seen in the commonly used "check-all-that-apply" format (Sudman and Bradburn, 1982). Research has shown that respondents provide more affirmative responses and spend more time on questions when provided with the forced choice format leading some to argue that respondents may be engaging in deeper processing by considering each response option separately (Smyth, Dillman, Christian and Stern, 2006a; Stern et al., 2003; Sudman and Bradburn, 1982). This research includes one experimental

comparison of a forced choice format versus check-all-that-apply format (Figure 5.4). The question asked respondents "Have you ever engaged in any of the following activities in order to influence a decision concerning your community?" The response options were "voted in the 2004 general election," "attended public hearings," "attended a public meeting to discuss public issues/problems," "signed a petition," "participated in a strike," "donated money to a local group," and "none of the above." In the check-all-that-apply version respondents were asked in the query to check all that apply and were provided with check boxes to the right of the answer categories. In the forced choice version, respondents were given the same list of response options but were provided with a set of check boxes to the right of the response options with one box referring to "yes" and the other "no." If the respondent had participated in the action listed they were to check yes and if they had not they were to check no. Previous research comparing the two formats has shown consistently that when respondents are given the forced choice format they provide more affirmative responses compared to when respondents are given the check-all-that apply format (Smyth, Dillman, Christian and Stern, 2006a; Smyth, Dillman, Christian and Stern, 2005). Thus, it is hypothesized that consistent with these findings the overall response distributions will show that the forced format provides more affirmative responses than the check-all-that-apply format. In addition, due to the research concerning the influence of graphical language (See Christian and Dillman, 2004; Jenkins and Dillman, 1997), one would not expect see a difference in the affects of the format by demographic group. That is, all groups should be affected equally.

Graphical Manipulations

FIGURE 5.4.

Graphical Manipulation—Check-all-that-apply versus forced choice formats

10. Have you ever engaged in any of the following activities in order to influence a decision concerning your community? (Check all that apply)		**10. Have you ever engaged in any of the following activities in order to influence a decision concerning your community?**		
			Yes	**No**
Voted in the 2004 general election……..	❑	Voted in the 2004 general election……..	❑	❑
Attended public hearings…….	❑	Attended public hearings…….	❑	❑
Attended a public meeting to discuss public issues/problems…….	❑	Attended a public meeting to discuss public issues/problems…….	❑	❑
Signed a petition…….	❑	Signed a petition …….	❑	❑
Participated in a strike……..	❑	Participated in a strike……..	❑	❑
Donated money to community group……	❑	Donated money to community group……	❑	❑
None of the above……	❑	None of the above……	❑	❑

Graphical Manipulation—the use different size boxes for open-ended responses

Version 1—2.0'' by 6.5''

Version 2—1.0'' by 6.5''

Table 5.8 shows that response distributions for the overall sample. Each of the response options except for "none of the above" confirmed the hypothesis that the forced choice format produces a higher proportion of affirmative responses albeit not always at significant levels. Interestingly, the "none of the above" category is checked by a greater number of respondents in the check-all-that-apply format. This finding seems to further support previous research in that when people received the forced choice format they read each option and found at least one response they could mark affirmatively thus ruling out the "none of the above" category. Conversely, when respondents were provided with the check-all-that-apply format they may not have considered each option separately and instead quickly went through to the "none of the above" response, which appeared last. Indeed research has shown that respondents spend more time on forced choice formats than check-all-that-apply (Smyth, Dillman, Christian and Stern, 2006a).

TABLE 5.8. Comparison Between Forced Choice and Check-All-That-Apply Formats Shown in Figure 5.4 for Percentage of Responses Marked Affirmatively.

	Forced Choice		**Check-all**			
	n	%	n	%	X^2	*p*
Voted in the 2004 general election	656	84.1	656	83.5	0.09	.764
Attended public hearings	655	41.5	656	37.8	1.89	.168
Attended a public meeting	654	37.0	656	34.0	1.29	.255
Signed a petition	655	70.4	656	65.7	3.30	.069
Participated in a strike	654	3.7	656	2.7	0.905	.342
Donated money to community group	653	81.3	656	70.9	19.58	.000
None of the above	652	1.8	656	6.3	16.35	.000

Turning to the demographic characteristics, Table 5.9 shows the mean number of responses checked affirmatively for each group. The first row shows the overall mean test for the two versions of the question. Overall, the mean number of affirmative answers was significantly higher for the forced choice format (3.20) than for the check-all-that-apply format (3.01). These findings are consistent with Smyth, Dillman, Christian and Stern (2006a). In addition, for every demographic subgroup the forced-choice means were higher than those of the check-all-that-apply format. Further, all but one of the groups was similarly affected by the experimental manipulations at significant or approaching significant levels. Men did not show the same degree of relationship

found among the other groups. Though the mean number of affirmative answers was still higher for men in the forced choice format (3.36) as compared to the check-all-that-apply format (3.23) the difference in means test was neither significant nor even approaching significance (p.=.302). Nonetheless, with the exception of men it appears that the graphical manipulation affected the other groups equally and thus there is reasonable support for the hypotheses that the graphical manipulation affects groups in the same direction and thereby gives supports the findings of previous research (Smyth, Dillman, Christian and Stern, 2006a).

TABLE 5.9. Comparison Between Forced Choice and Check-All-That-Apply Formats Among Each of the Demographic Groups for Number of Options Marked Affirmatively.

	Forced Choice		Check-all		*Independent Samples t-test*	*p*
	Mean	n	Mean	n		
Overall	3.20	646	3.01	656	2.48	.013
Respondent over 60	3.35	159	3.13	161	1.45	.148
Respondent under 60	3.26	360	3.06	358	1.88	.060
Respondent < than college degree	3.08	461	2.91	448	1.83	.068
Respondent College degree or more	3.60	171	3.31	178	2.08	.039
Men	3.36	235	3.23	230	1.03	.302
Women	3.21	291	2.97	291	2.13	.035

Manipulating the Size of the Answer Space in Open-Ended Questions

In addition to recent research concerning the graphical manipulation of response options, some studies have shown that other forms of graphical language in surveys can have an effect on the visual cues respondents receive from the question format. For example, Israel (2006) and Christian and Dillman (2004) have shown that the size of boxes in open-ended questions affects the amount of information respondents provide. When respondents are given bigger answering spaces they consistently offer more words and themes in their responses; thus, the visual cue the box provides prompt the respondent to provide more or less information. In addition, recent research by Israel (2006) has shown that women provide longer responses than men and seem more affected by the size of the box. Based on this research it is hypothesized that the size of

the box will affect the overall sample in similar ways to previous research (i.e., a bigger box will equal longer responses). In terms of demographics, it is hypothesized, just as in the previous experiment, that the graphical language will affect all demographic groups. However, it should be noted that this does not mean that all demographic groups provide answers of the same length. Instead, each demographic group will be provide more words when a bigger space is provided.

For this experiment, two different sized boxes were used (Figure 5.4). The experiment was part of a two part question that asked respondents first whether or not there was any particular change that they believed would make the community a better place to live. If they responded "yes" they were asked to elaborate about what they would change. In one version of the questionnaire the box was 2 inches high and 6.5 inches wide. In the alternate version the box was 1 inch high and 6.5 inches wide. Table 5.10 shows the mean number of words provided by the size of the box. Consistent with previous research and the hypothesis, the larger box gained longer responses. For the overall sample, respondents provided almost three more words in the bigger box than in the smaller box (17.17 words as compared to 14.95 words, respectively). Turning to the respondent characteristics, there were differences in the way respondents by demographic group responded to the graphical manipulation. For example, the graphical language most dramatically affected respondents with less than a college degree and men; whereas, age mattered little. While, the data show a similar pattern to those seen by Israel (2006) with women providing more words than men, they were not affected by the graphical manipulation.

TABLE 5.10. Mean Differences in the Number of Words Provided for the Entire Sample and by Demographic Group Based on the Size of the Answer Box.

	Big Box		Small Box		*Independent Samples t-test*	*p*
	Mean	n	Mean	n		
Overall	17.17	456	14.95	466	1.82	.069
Respondent over 60	18.40	97	16.38	102	0.74	.457
Respondent under 60	17.38	284	15.04	278	1.46	.144
Respondent < than college degree	18.74	179	13.35	171	2.69	.008
Respondent College degree or more	16.42	270	16.13	276	0.18	.856
Men	16.07	167	13.00	162	1.78	.077
Women	18.59	219	17.38	218	0.60	.546

CONCLUSIONS

Several important findings have emerged form this study. First, regarding response category order effects (verbal manipulations), one of the two questions concerning behaviors produced significant results. The question concerning the amount that respondents traveled a 100 miles or more outside the local areas showed neither results for the sample as a whole nor by any demographic. However, the question concerning the amount that individuals used the Internet or email produced significant results for the sample as a whole and among each demographic group. What appears to have happened was a clear case of satisficing where respondent found the first answer they could reasonably justify and selected it. Thus, when the response option nearly every day appeared before every day respondents chose it and moved on to the next question. What is interesting is that we find this across demographic groups; therefore, it does not appear that cognitive sophistication, as some have suggested would cause these types of mistakes (Krosnick, 1991), produced these results and instead it was the question design.

The third response order experiment concerning an opinion question with a "don't know" response option showed significant differences by version. When the response options appeared in an expected order with "very beneficial" listed first, respondents were much less likely to choose the "don't know" than when the options began in the reverse order. This effect supports previous research on visual design (Torangeau, Couper, and Conrad, 2005). When examining whether certain demographic groups were more likely to be affected by the design of this question it was found that the likelihood of choosing the "don't know" category in the reverse order cut across all but one

demographic group (respondents with less than a college degree); meaning that the visual layout seems to have affected most respondents in the same way regardless of demographic characteristic.

These scalar question findings contribute to research on satisficing and primacy. Due to the inconsistency in past findings on primacy, some have suggested that other aspects of questions, whether topic, structure or some other feature might contribute to the occurrence of such effects (Dillman et al., 1996). Two of three questions here may be examples of such effects. Either of the two adjacent categories in one question (using the Internet every day or using it nearly every day) are probably satisfactory for many respondents to check. Therefore, the one that appears first in the sequence is more likely to get chosen, while the remaining categories are unaffected. On the other question, with the “don't know” category, we see that this option is much more likely to get checked when the most used categories (very beneficial and mostly beneficial) appear at the end of the response options. In this situation the "don't know” response option is visually more accessible to respondents, while in the other version, the respondents may check the beneficial categories at the top of the list and never see the “don’t know” category; thus, rendering the “don't know” category visually inaccessible. Previous research has also shown than when an undecided category is placed in the middle of scalar responses it is used by respondents that are neutral as well as undecided (Willits and Jahota, 1996). In the current test, the neutral category was used more often when the beneficial categories were placed first. This use seems consistent with respondents reading down a list that starts with positive responses, but when noting that they were moving into bad responses (which few wanted to pick) they opted for what seemed a reasonable category,

i.e. neutral. These findings suggest that it is not only category order that may influence people's answers, but characteristics of those categories and their layout as well as the visibility of response options. This is an issue that clearly needs further research, which may help explain the highly inconsistent results observed in previous primacy experiments.

In terms of the graphical language experiments, visual design seems to again have cut across demographic differences. In comparing the check-all-that-apply and forced choice formats every demographic group marked more options affirmatively and conversely were less likely to use the "none of the above" option in the forced choice format. This means that the effects of the graphical language "spoke" to each demographic group. Of particular interest, the data lend support to recent empirical studies concerning how respondents answer mark all that apply questions. Smyth, Dillman, Christian and Stern (2006a) have shown that respondents spend more time answering forced choice questions than check-all-that-apply questions because in the forced choice format each response must be evaluated and answered. Thus, respondents engage in deeper processing with the forced choice format. The fact that 6.3% of respondents chose "none of the above" in the check-all-that-apply question compared to less than 2% in the forced choice format suggests that respondents clearly considered each option in the forced choice format and thus engaged in deeper processing. This finding was true across demographic groups. Regarding the size of the answer space, each demographic group wrote more in the larger space; thus, the graphical language again affected all respondents.

This paper has attempted to contribute to our understanding of how to reduce measurement error in self-administered surveys by unifying two literatures. On the one hand, the emerging literature concerning visual design theory has not addressed how respondents with different demographic characteristics may be differentially affected by the questionnaire design. On the other hand, the research concerning demographics has not addressed the recent contributions of visual design theory.

The results from the six experiments provide substantial evidence that the visual design of questions (graphical and verbal manipulations) in self-administered surveys affects respondents' behavior. Furthermore, it appears that this influence, to varying degrees, cuts across the influence of age, educational attainment and sex. Meaning that the visual design of a questionnaire may be more important to how respondents interact with the survey instrument than anything about the particular respondent. Thus, the results of this paper lend considerable support to previous work that has served to explicate and/or test visual design theory (e.g., Jenkins and Dillman, 1997; Smyth, Dillman, Christian and Stern, 2006).

In short these six experiments have shown that the effects of visual design affect people of different ages, educational attainment and sex in similar ways. However, what remains unresolved is why different demographic groups show effects to be of the same kind and yet different in degree. For example, while all demographic groups provided more answers in the larger space in the open ended experiment there was quite a bit of variation between the groups; particularly, in the number of words used regardless of box size. Thus, while this research bolster previous studies on the importance of visual design theory more studies are needed to test the varying effects on demographic groups.

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APPENDIX A

INTERVIEW QUESTIONS

Interview questions:

For these interviews I will used a semi-structured interview technique in which I started with the following general questions and then allowed the respondents to take the interview in the direction they liked.

1. How long have you lived in the Lewiston/Clarkston area?
2. If you had to describe this area to an outsider how would you do so? Is there anything you can think of that makes this community unique or different from others in the area?
3. Have you seen any changes here over the past 5 or so years? If so, what?
4. Are you involved in any local groups, clubs or organizations? If so, how active are you in your participation (e.g., a leader, committee member, member, volunteer, provide financial support etc.). Explain.
5. (If involved) When did you get involved in these local groups and how did you learn about them? Have seen any changes in these groups since you have been involved?
6. Do you belong to any national groups? If so, do they have a local chapter or local meetings? If so, do you attend these meetings? Do you recall how you learned about these groups? How do find out what's going on with these groups?
7. Do you use the Internet? If so, would you say you rely on the Internet for anything?
8. (If they have the Internet) Do you ever use it to find out about things happening locally? Explain.
9. (If they have the Internet) Do you ever use it to find out about things happening outside the local area? Explain
10. Overall, do you think the Internet has an effect on the Lewiston/Clarkston valley? If so, explain.

APPENDIX B

QUESTIONNAIRES

Version 1

Making Community Work in Lewiston and Clarkston

*StrengthinPerspective.com © 2002 by **Paul & Marilyn Peck***

Where the cities meet and rivers merge...

An effort to understand how Lewiston and Clarkston area residents communicate to get things done for their community.

We appreciate your help.

Michael J. Stern, Study Coordinator
The Social and Economic Sciences Research Center
Washington State University
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SESRC 2/05

1. About how many years have you lived in the Lewiston/Clarkston area?

_____Years

2. Overall, how satisfied are you with living in this area?

- ❑ Completely Satisfied
- ❑ Mostly Satisfied
- ❑ Somewhat Satisfied
- ❑ Not at all Satisfied

3. Please circle the number on this 1 to 5 scale that best describes how <u>attached</u> you feel to this area?

Very attached Not attached at all
1……2……3……4……5

4. Do you think that in the last five years, Lewiston/Clarkston has gotten better or worse as a place to live?

- ❑ Gotten much better
- ❑ Gotten somewhat better
- ❑ Not much change
- ❑ Gotten somewhat worse
- ❑ Gotten much worse

5. Is there any particular change that you think would make this area a better place for you to live?

- ❑ Yes
- ❑ No

6. If so, what is that change?

7. About how often do you travel more than 100 miles outside the area?

- ❑ Once or more a week
- ❑ Once or more a month
- ❑ Once or more a year
- ❑ About once a year
- ❑ Less than once a year

8. How much do you feel a part of each of these communities?

Lewiston	Clarkston
❑ Very much	❑ Very much
❑ Somewhat	❑ Somewhat
❑ A little	❑ A little
❑ Not at all	❑ Not at all

9. Which of these do you believe are the largest and smallest problems facing residents of the Lewiston & Clarkston area? Use "1" for the largest problem, "2" for second largest problem and so forth until you have completed all eight.

Too much drug use……	
Too much crime overall……..	
Lack of good jobs……..	
Lack of affordable housing……	
Lack of money for local schools……	
Lack of affordable health care…….	
Taxes are too high……..	
Lack of community involvement ……..	

10. Have you ever engaged in any of the following activities in order to influence a decision concerning your community? (Check all that apply)

Voted in the 2004 general election……..	❑
Attended public hearings…….	❑
Attended a public meeting to discuss public issues/problems…….	❑
Signed a petition …….	❑
Participated in a strike…….	❑
Donated money to community group……	❑
None of the above……	❑

11. Here are a few community events that take place in this area each year. During <u>2004</u>, did you attend or participate in any activities associated with them? If yes, where did you obtain your information about these events?

Event	Did you attend or participate in this event in 2004?	If yes, please check all the sources where you obtained information about this event
A. Nez Perce or Asotin County Fairs	❑ Yes ⟶ ❑ No	❑ Word of mouth ❑ Newspaper, radio or TV ❑ Email or the Internet ❑ Postal mail
B. Lewiston Roundup Rodeo & Parade	❑ Yes ⟶ ❑ No	❑ Word of mouth ❑ Newspaper, radio or TV ❑ Email or the Internet ❑ Postal mail
C. Great Snake Lake Steelhead Roundup	❑ Yes ⟶ ❑ No	❑ Word of mouth ❑ Newspaper, radio or TV ❑ Email or the Internet ❑ Postal mail
D. Clarkston Lighted Christmas Parade	❑ Yes ⟶ ❑ No	❑ Word of mouth ❑ Newspaper, radio or TV ❑ Email or the Internet ❑ Postal mail
E. Dogwood Festival	❑ Yes ⟶ ❑ No	❑ Word of mouth ❑ Newspaper, radio or TV ❑ Email or the Internet ❑ Postal mail
F. Other events (such as sporting events, performances, gun shows)	❑ Yes ⟶ ❑ No	❑ Word of mouth ❑ Newspaper, radio or TV ❑ Email or the Internet ❑ Postal mail

12. On average about how much time in 2004, if any, did you spend attending or participating in <u>all local community events</u> in Lewiston/Clarkston? (If none write in "0")

____Days per month in 2004 -OR- ____Hours per month in 2004

13. Is this more or less time than you spent participating in local events 5 years ago?

- ❑ More
- ❑ Less
- ❑ About the same

14. Thinking about these community events how many events did you help organize or carryout by being on a committee or volunteering your time? (If none write in "0")

_____ Number of community events helped with

15. Here is a list of some types of organizations, clubs, or other groups in the Lewiston/Clarkston area. Please indicate whether you belong to or participate in any of these types of local organizations and how you receive information about them.

Type of organization, club, or local group ▼	Do you belong or participate in this type of organization, club, or local group? ▼	If yes, please check the sources where you have obtained information about or from them. ▼	In general, how much a part of these groups do you feel? ▼
A. Religious organizations Such as churches, youth or adult religious groups	❑ Yes → ❑ No	❑ Word of mouth ❑ Newspaper, radio or TV ❑ Email or the Internet ❑ Postal mail	❑ A lot ❑ Somewhat ❑ A little ❑ Not at all
B. Unions, Business & Professional Such as a union local, Association of Realtors, or Chamber of Commerce	❑ Yes → ❑ No	❑ Word of mouth ❑ Newspaper, radio or TV ❑ Email or the Internet ❑ Postal mail	❑ A lot ❑ Somewhat ❑ A little ❑ Not at all
C. Civic & Community Such as a Festival Committee, or League of Women Voters	❑ Yes → ❑ No	❑ Word of mouth ❑ Newspaper, radio or TV ❑ Email or the Internet ❑ Postal mail	❑ A lot ❑ Somewhat ❑ A little ❑ Not at all
D. Family & Child Related Such as Scouts, Boys and Girls Club, or 4-H Club	❑ Yes → ❑ No	❑ Word of mouth ❑ Newspaper, radio or TV ❑ Email or the Internet ❑ Postal mail	❑ A lot ❑ Somewhat ❑ A little ❑ Not at all
E. Hobby & Sport Such as Saddle Club, ATV Club, Bowling League, or Gun club	❑ Yes → ❑ No	❑ Word of mouth ❑ Newspaper, radio or TV ❑ Email or the Internet ❑ Postal mail	❑ A lot ❑ Somewhat ❑ A little ❑ Not at all
F. Service Such as Rotary, Lions, or Kiwanis clubs	❑ Yes → ❑ No	❑ Word of mouth ❑ Newspaper, radio or TV ❑ Email or the Internet ❑ Postal mail	❑ A lot ❑ Somewhat ❑ A little ❑ Not at all
G. Social & Fraternal Such as Masons, Elks, or Women of the Moose	❑ Yes → ❑ No	❑ Word of mouth ❑ Newspaper, radio or TV ❑ Email or the Internet ❑ Postal mail	❑ A lot ❑ Somewhat ❑ A little ❑ Not at all
H. Arts & Education Such as PTA, Community Band, or Civic Theatre	❑ Yes → ❑ No	❑ Word of mouth ❑ Newspaper, radio or TV ❑ Email or the Internet ❑ Postal mail	❑ A lot ❑ Somewhat ❑ A little ❑ Not at all
I. Other groups (Please List) _____ _____ _____	❑ Yes → ❑ No	❑ Word of mouth ❑ Newspaper, radio or TV ❑ Email or the Internet ❑ Postal mail	❑ A lot ❑ Somewhat ❑ A little ❑ Not at all

16. How many different local organizations, clubs or groups in the Lewiston/Clarkston area do you belong to or participate in? (If none, write in "0")

_____ Number of organizations, clubs or groups

17. On average about how much time in 2004 did you spend participating in these organizations, clubs or local groups? (If none write in "0")

____Days per month in 2004 -OR- ____Hours per month in 2004

18. Is this more or less time than you spent participating 5 years ago?

- ❑ More
- ❑ Less
- ❑ About the same

19. Thinking about these organizations, clubs or local groups, in how many did you serve in a leadership position (committee or officer) over the last three years? (If none write in "0")

_____ Community organizations, clubs or local groups over the last three years

20. On a scale from 1 to 5, how much do you think the organizations, clubs, or local groups that exist in the Lewiston/Clarkston area contribute to the quality of life of local residents?

- ❑ 1 A lot
- ❑ 2
- ❑ 3
- ❑ 4
- ❑ 5 Not at all

- ❑ Don't know

21. Do you belong to any non-local groups or associations located only outside the Lewiston/Clarkston area?

- ❑ No
- ❑ Yes

If Yes—On average about how much time in 2004 did you spend participating in these non-local groups? (If none write in "0")

____Days per month in 2004 -OR- ____Hours per month in 2004

22. Is this more or less time than you spent participating in non-local groups 5 years ago?

- ❑ More
- ❑ Less
- ❑ About the same

23. One of the recent changes that appears to be affecting some people in Lewiston/Clarkston is the Internet. What kind of an effect do you think the Internet is having on most people who live in the Lewiston/Clarkston area?

- ❑ Very beneficial
- ❑ Mostly beneficial
- ❑ Neutral
- ❑ Mostly bad
- ❑ Very bad
- ❑ Don't know

24. Do you have Internet access at any of these locations? (Check all that apply)

- ❑ No→ If no, please skip to Question 30 on Page 8
- ❑ Home
- ❑ Work
- ❑ School
- ❑ Somewhere else (Please list below)

25. Thinking about how you use the Internet, about how many hours a week do you use it for work and how many hours do you use it for other things? (If you don't use it in one of these ways write in "0")

Work _____ hours a week
Other things _____hours a week

26. How often do you use an Internet connection to access the web or for email?

- ❑ Every day
- ❑ Nearly every day
- ❑ A few times per week
- ❑ Once a week or less

27. How many people in your household including yourself have access to an Internet connection?

_____Number of people in your household with access to an Internet connection

28. Thinking about how your Internet connection(s) get(s) used, please indicate the extent to which you personally use an Internet connection for each of these purposes.

How your Internet connection gets used ▼	Daily ▼	2-3 times a week ▼	Weekly ▼	Less often ▼	Not at all ▼
A. To send or receive email from relatives who live in the Lewiston/Clarkston area who do not live with you ……	☐	☐	☐	☐	☐
B. To send or receive email from relatives who live outside the Lewiston/Clarkston area. ……	☐	☐	☐	☐	☐
C. To send or receive email from other people who live in the Lewiston/Clarkston area…..……	☐	☐	☐	☐	☐
D. To send or receive email from other people who live outside the Lewiston/Clarkston area……..	☐	☐	☐	☐	☐
E. To access web sites where you can buy things from businesses in Lewiston and Clarkston……..	☐	☐	☐	☐	☐
F. To access web sites where you can buy things from businesses outside Lewiston and Clarkston ……	☐	☐	☐	☐	☐
G. To get information about events happening in the Lewiston/Clarkston area……	☐	☐	☐	☐	☐
H. To get information about events happening outside the Lewiston/Clarkston area……	☐	☐	☐	☐	☐

29. In general, do you use email more to communicate with:

- ❑ People living in the Lewiston/Clarkston area
- ❑ People living away from the Lewiston/Clarkston area
- ❑ About the same amount for both

30. Please think for a minute about three relatives who <u>do not</u> live with you but with whom you communicate most frequently, and answer these questions. It may help to list their first name or initials in the line provided.

	Relative 1 ▼	**Relative 2** ▼	**Relative 3** ▼
First name/Initials (optional)	_____ (name)	_____ (name)	_____ (name)
Does this relative live in Lewiston/ Clarkston?……	❑ Yes ❑ No	❑ Yes ❑ No	❑ Yes ❑ No
<u>If no:</u> About how far away from Lewiston/Clarkston do they live?……..	_____Miles	_____Miles	_____Miles
About how old is this relative?……	_____years	_____years	_____years
Approximately, how often do you communicate with this relative?……	❑ Everyday ❑ Every week ❑ Once a month ❑ Less than once a month	❑ Everyday ❑ Every week ❑ Once a month ❑ Less than once a month	❑ Everyday ❑ Every week ❑ Once a month ❑ Less than once a month
When you want to communicate with this relative, which of the following do you use <u>most</u> often?……...	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell phone ❑ Other telephone	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell phone ❑ Other telephone	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell phone ❑ Other telephone
Is this relative in any of the same organizations, clubs or groups as you?	❑ Yes ❑ No ❑ Don't know	❑ Yes ❑ No ❑ Don't know	❑ Yes ❑ No ❑ Don't know

31. To the best of your knowledge, do these relatives talk with one another and, if so, which of the following are they <u>most likely</u> to use to communicate with one another?

Relative 1 and Relative 3 ▼	**Relative 1 and Relative 2** ▼	**Relative 2 and Relative 3** ▼
❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell Phone ❑ Telephone ❑ None of these ❑ Don't know ❑ They don't communicate	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell Phone ❑ Telephone ❑ None of these ❑ Don't know ❑ They don't communicate	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell Phone ❑ Telephone ❑ None of these ❑ Don't know ❑ They don't communicate

32. Thinking about your three closest friends who do not live with you please answer these questions.

	Friend 1 ▼	**Friend 2** ▼	**Friend 3** ▼
First name/Initials (optional)	_____ (name)	_____ (name)	_____ (name)
Does this friend live in the Lewiston/ Clarkston area?……...	❑ Yes ❑ No	❑ Yes ❑ No	❑ Yes ❑ No
<u>If no:</u> About how far away from Lewiston/Clarkston do they live? ……..	_____Miles	_____Miles	_____Miles
About how old is this friend?……...	_____years	_____years	_____years
Approximately, how often do you communicate with this friend?……...	❑ Everyday ❑ Every week ❑ Once a month ❑ Less than once a month	❑ Everyday ❑ Every week ❑ Once a month ❑ Less than once a month	❑ Everyday ❑ Every week ❑ Once a month ❑ Less than once a month
When you want to communicate with this friend, which of the following do you use <u>most</u> often?……...	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell phone ❑ Other telephone	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell phone ❑ Other telephone	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell phone ❑ Other telephone
Is this friend in any of the same organizations, clubs or groups as you?	❑ Yes ❑ No ❑ Don't know	❑ Yes ❑ No ❑ Don't know	❑ Yes ❑ No ❑ Don't know

33. To the best of your knowledge, do these friends talk with one another and, if so, which of the following are they <u>most likely</u> to use to communicate with one another?

Friend 1 and Friend 3 ▼	**Friend 1 and Friend 2** ▼	**Friend 2 and Friend 3** ▼
❑ Personal visit	❑ Personal visit	❑ Personal visit
❑ Postal mail	❑ Postal mail	❑ Postal mail
❑ Email	❑ Email	❑ Email
❑ Cell Phone	❑ Cell Phone	❑ Cell Phone
❑ Telephone	❑ Telephone	❑ Telephone
❑ Don't know	❑ Don't know	❑ Don't know
❑ They don't communicate	❑ They don't communicate	❑ They don't communicate

Finally, we have a few questions to help us understand how different people feel about these issues.

34. Including yourself, please list everyone who lives in your household, their relationship to you, age, and gender. (If you live alone, please leave this section blank.)

Household member	Relationship to you (for example, write in spouse, mother, roommate)	Approximate age	Gender
1	**Yourself**	____Years	❑ Male ❑ Female
2	_____	____Years	❑ Male ❑ Female
3	_____	____Years	❑ Male ❑ Female
4	_____	____Years	❑ Male ❑ Female
5	_____	____Years	❑ Male ❑ Female

35. What is the last grade or class you completed in school?

- ❑ None, or grades 1-8
- ❑ Some high school (grades 9-11)
- ❑ High school graduate (grade 12 or GED certificate)
- ❑ Business, Technical, or vocational school AFTER high school
- ❑ Some college, no 4-year degree
- ❑ College graduate (B.S., B.A., or other 4-year degree)
- ❑ Post-graduate training

36. Which one of the following <u>best describes</u> your marital status?

- ❑ Married
- ❑ Living together, unmarried
- ❑ Divorced
- ❑ Separated
- ❑ Widowed
- ❑ Never been married

37. Which of the following <u>best describes</u> your employment situation?

- ❑ Employed full-time
- ❑ Employed part-time
- ❑ Not employed
- ❑ Retired
- ❑ Not in the workforce

38. In 2004, what was your total family income from all sources, before taxes.

- ❑ Less than $10,000
- ❑ $10,000 to under $20,000
- ❑ $20,000 to under $30,000
- ❑ $30,000 to under $40,000
- ❑ $40,000 to under $50,000
- ❑ $50,000 to under $75,000
- ❑ $75,000 to under $100,000
- ❑ $100,000 or more

39. If you have any additional comments about how you communicate or stay connected with friends and family, learn about local events, or participate in local and non-local groups, please write them in the space below.

Thank you for your help!

Please mail your completed questionnaire in the enclosed envelope to:

Michael J. Stern, Study Coordinator
The Social and Economic Resource Center
Washington State University
Pullman, WA 99164-4014

Version 2

Making Community Work in Lewiston and Clarkston

*StrengthinPerspective.com © 2002 by **Paul & Marilyn Peck***

Where the cities meet and rivers merge...

An effort to understand how Lewiston and Clarkston area residents communicate to get things done for their community.

We appreciate your help.

Michael J. Stern, Study Coordinator
The Social and Economic Sciences Research Center
Washington State University
Pullman, WA 99164-4014
(509) 335-1511
mstern@wsu.edu

SESRC 1/05

1. **About how many years have you lived in the Lewiston/Clarkston area?**

   _____Years

2. **Overall, how satisfied are you with living in this area?**

   - ❑ Not at all Satisfied
   - ❑ Somewhat Satisfied
   - ❑ Mostly Satisfied
   - ❑ Completely Satisfied

3. **On a 1 to 5 scale, where 1 means very attached and 5 means not attached at all, please write in the box how attached you feel to this area? You may use any number between 1 and 5.**

   ☐

4. **Do you think that in the last five years, Lewiston/Clarkston has gotten better or worse as a place to live?**

   - ❑ Gotten much worse
   - ❑ Gotten somewhat worse
   - ❑ Not much change
   - ❑ Gotten somewhat better
   - ❑ Gotten much better

5. **Is there any particular change that you think would make this area a better place for you to live?**

   - ❑ Yes
   - ❑ No

6. **If so, what is that change?**

7. About how often do you travel more than 100 miles outside the area?

- ❑ Less than once a year
- ❑ About once a year
- ❑ Once or more a year
- ❑ Once or more a month
- ❑ Once or more a week

8. How much do you feel a part of each of these communities?

Lewiston	Clarkston
❑ Not at all	❑ Not at all
❑ A little	❑ A little
❑ Somewhat	❑ Somewhat
❑ Very much	❑ Very much

9. Which of these do you believe are the largest and smallest problems facing residents of the Lewiston & Clarkston area? Use "1" for the largest problem, "2" for second largest problem and so forth until you have completed all eight.

Lack of community involvement ……..	
Taxes are too high……..	
Lack of affordable health care…….	
Lack of money for local schools……	
Lack of affordable housing……	
Lack of good jobs……..	
Too much crime overall……..	
Too much drug use……	

10. Have you ever engaged in any of the following activities in order to influence a decision concerning your community?

	Yes	No
Voted in the 2004 general election……..	❑	❑
Attended public hearings…….	❑	❑
Attended a public meeting to discuss public issues/problems…….	❑	❑
Signed a petition …….	❑	❑
Participated in a strike……..	❑	❑
Donated money to community group……	❑	❑
None of the above……	❑	❑

11. Here are a few community events that take place in this area each year. During <u>2004</u>, did you attend or participate in any activities associated with them? If yes, where did you obtain your information about these events?

Event	Did you attend or participate in this event in 2004?	If yes, please check all the sources where you obtained information about this event
A. Nez Perce or Asotin County Fairs	❑ Yes → ❑ No	❑ Postal mail ❑ Email or the Internet ❑ Newspaper, radio or TV ❑ Word of mouth
B. Lewiston Roundup Rodeo & Parade	❑ Yes → ❑ No	❑ Postal mail ❑ Email or the Internet ❑ Newspaper, radio or TV ❑ Word of mouth
C. Great Snake Lake Steelhead Roundup	❑ Yes → ❑ No	❑ Postal mail ❑ Email or the Internet ❑ Newspaper, radio or TV ❑ Word of mouth
D. Clarkston Lighted Christmas Parade	❑ Yes → ❑ No	❑ Postal mail ❑ Email or the Internet ❑ Newspaper, radio or TV ❑ Word of mouth
E. Dogwood Festival	❑ Yes → ❑ No	❑ Postal mail ❑ Email or the Internet ❑ Newspaper, radio or TV ❑ Word of mouth
F. Other events (such as sporting events, performances, gun shows)	❑ Yes → ❑ No	❑ Postal mail ❑ Email or the Internet ❑ Newspaper, radio or TV ❑ Word of mouth

12. On average, about how much time in 2004, if any, did you spend attending or participating in <u>all local community events</u> in Lewiston/Clarkston? (If none write in "0")

____Days per month in 2004 -OR- ____Hours per month in 2004

13. Is this more or less time than you spent participating in local events 5 years ago?

- ❑ More
- ❑ About the same
- ❑ Less

14. Thinking about these community events how many events did you help organize or carryout by being on a committee or volunteering your time? (If none write in "0")

_____ Number of community events helped with

15. Here is a list of some types of organizations, clubs, or other groups in the Lewiston/Clarkston area. Please indicate whether you belong to or participate in any of these types of local organizations and how you receive information about them.

Type of organization, club, or local group ▼	Do you belong or participate in this type of organization, club, or local group? ▼	If yes, please check the sources where you have obtained information about or from them. ▼	In general, how much a part of these groups do you feel? ▼
A. Arts & Education Such as PTA, Community Band or Civic Theatre	❑ Yes → ❑ No	❑ Postal mail ❑ Email or the Internet ❑ Newspaper, radio or TV ❑ Word of mouth	❑ Not at all ❑ A little ❑ Somewhat ❑ A lot
B. Unions, Business & Professional Such as a union local, Association of Realtors or Chamber of Commerce	❑ Yes → ❑ No	❑ Postal mail ❑ Email or the Internet ❑ Newspaper, radio or TV ❑ Word of mouth	❑ Not at all ❑ A little ❑ Somewhat ❑ A lot
C. Civic & Community Such as a Festival Committee or League of Women Voters	❑ Yes → ❑ No	❑ Postal mail ❑ Email or the Internet ❑ Newspaper, radio or TV ❑ Word of mouth	❑ Not at all ❑ A little ❑ Somewhat ❑ A lot
D. Family & Child Related Such as Scouts, Boys and Girls Club, or 4-H club	❑ Yes → ❑ No	❑ Postal mail ❑ Email or the Internet ❑ Newspaper, radio or TV ❑ Word of mouth	❑ Not at all ❑ A little ❑ Somewhat ❑ A lot
E. Hobby & Sport Such as Saddle Club, ATV Club, Bowling League or Gun Club	❑ Yes → ❑ No	❑ Postal mail ❑ Email or the Internet ❑ Newspaper, radio or TV ❑ Word of mouth	❑ Not at all ❑ A little ❑ Somewhat ❑ A lot
F. Service Such as Rotary, Lions or Kiwanis clubs	❑ Yes → ❑ No	❑ Postal mail ❑ Email or the Internet ❑ Newspaper, radio or TV ❑ Word of mouth	❑ Not at all ❑ A little ❑ Somewhat ❑ A lot
G. Social & Fraternal Such as Masons, Elks or Women of the Moose	❑ Yes → ❑ No	❑ Postal mail ❑ Email or the Internet ❑ Newspaper, radio or TV ❑ Word of mouth	❑ Not at all ❑ A little ❑ Somewhat ❑ A lot
H. Religious organizations Such as churches, youth or adult religious groups	❑ Yes → ❑ No	❑ Postal mail ❑ Email or the Internet ❑ Newspaper, radio or TV ❑ Word of mouth	❑ Not at all ❑ A little ❑ Somewhat ❑ A lot
I. Other groups (Please List) _____ _____ _____	❑ Yes → ❑ No	❑ Postal mail ❑ Email or the Internet ❑ Newspaper, radio or TV ❑ Word of mouth	❑ Not at all ❑ A little ❑ Somewhat ❑ A lot

16. How many different local organizations, clubs or groups in the Lewiston/Clarkston area do you belong to or participate in? (If none, write in "0")

_____ Number organizations, clubs or groups

17. On average, about how much time in 2004 did you spend participating in these organizations, clubs or local groups? (If none write in "0")

____Days per month in 2004 -OR- ____Hours per month in 2004

18. Is this more or less time than you spent participating 5 years ago?

- ❑ More
- ❑ About the same
- ❑ Less

19. Thinking about these organizations, clubs or local groups, in how many did you serve in a leadership position (committee or officer) over the last three years? (If none write in "0")

_____ Community organizations, clubs or local groups over the last three years

20. On a 1 to 5 scale where 1 means a lot and 5 not at all, how much do you think the organizations, clubs, or local groups that exist in the Lewiston/Clarkston area contribute to the quality of life of local residents? You may use any number between 1 and 5.

☐

- ❑ Don't know

21. Do you belong to any non-local groups or associations located only outside the Lewiston/Clarkston area?

- ❑ No
- ❑ Yes

If Yes—On average, about how much time in 2004 did you spend participating in these non-local groups? (If none write in "0")

____Days per month in 2004 -OR- ____Hours per month in 2004

22. Is this more or less time than you spent participating in non-local groups 5 years ago?

- ❑ More
- ❑ About the same
- ❑ Less

23. One of the recent changes that appears to be affecting some people in Lewiston/Clarkston is the Internet. What kind of an effect do you think the Internet is having on most people who live in the Lewiston/Clarkston area?

- ❑ Very bad
- ❑ Mostly bad
- ❑ Neutral
- ❑ Mostly beneficial
- ❑ Very beneficial
- ❑ Don't know

24. Do you have Internet access at any of these locations? (Check all that apply)

- ❑ No→ If no, please skip to Question 30 on Page 8
- ❑ Home
- ❑ Work
- ❑ School
- ❑ Somewhere else (Please list below)

25. Thinking about how you use the Internet, about how many hours a week do you use it for work and how many hours do you use it for other things?

Work ▼		**Other Things** ▼
0 to 1 hours	❑	0 to 1 hours
1 to 3 hours	❑	1 to 3 hours
3 to 6 hours	❑	3 to 6 hours
6 to 9 hours	❑	6 to 9 hours
9 to 12 hours	❑	9 to 12 hours
12 or more hours	❑	12 or more hours

26. How often do you use an Internet connection to access the web or for email?

- ❑ Once a week or less
- ❑ A few times per week
- ❑ Nearly every day
- ❑ Everyday

27. How many people in your household including yourself have access to an Internet connection?

_____Number of people in your household with access to an Internet connection

28. Thinking about how your Internet connection(s) get(s) used, please indicate the extent to which you personally use an Internet connection for each of these purposes.

How your Internet connection gets used	Daily	2-3 times a week	Weekly	Less often	Not at all
A. To send or receive email from <u>relatives who live in</u> the Lewiston/Clarkston area who do not live with you ….…….……	☐	☐	☐	☐	☐
B. To send or receive email from <u>relatives who live outside</u> the Lewiston/Clarkston area. …….	☐	☐	☐	☐	☐
C. To send or receive email from <u>other people who live in</u> the Lewiston/Clarkston area….……	☐	☐	☐	☐	☐
D. To send or receive email from <u>other people who live outside</u> the Lewiston/Clarkston area……..	☐	☐	☐	☐	☐
E. To access web sites where you can buy things from businesses <u>in</u> Lewiston and Clarkston……..	☐	☐	☐	☐	☐
F. To access web sites where you can buy things from businesses <u>outside</u> Lewiston and Clarkston ……	☐	☐	☐	☐	☐
G. To get information about events happening <u>in</u> the Lewiston/Clarkston area……	☐	☐	☐	☐	☐
H. To get information about events happening <u>outside</u> the Lewiston/Clarkston area……	☐	☐	☐	☐	☐

29. In general, do you use email more to communicate with:

- ❑ People living away from the Lewiston/Clarkston area
- ❑ People living in the Lewiston/Clarkston area
- ❑ About the same amount for both

30. Please think for a minute about three relatives who <u>do not</u> live with you but with whom you communicate most frequently, and answer these questions. It may help to list their first name or initials in the line provided.

	Relative 1 ▼	**Relative 2** ▼	**Relative 3** ▼
First name/Initials (optional)	_____ (name)	_____ (name)	_____ (name)
Does this relative live in Lewiston/ Clarkston?……	❑ Yes ❑ No	❑ Yes ❑ No	❑ Yes ❑ No
<u>If no:</u> About how far away from Lewiston/Clarkston do they live?……..	_____Miles	_____Miles	_____Miles
About how old is this relative?……	_____years	_____years	_____years
Approximately, how often do you communicate with this relative?……	❑ Less than once a month ❑ Once a month ❑ Every week ❑ Everyday	❑ Less than once a month ❑ Once a month ❑ Every week ❑ Everyday	❑ Less than once a month ❑ Once a month ❑ Every week ❑ Everyday
When you want to communicate with this relative, which of the following do you use <u>most</u> often?……...	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell phone ❑ Other telephone	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell phone ❑ Other telephone	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell phone ❑ Other telephone
Is this relative in any of the same organizations, clubs or groups as you?	❑ Yes ❑ No ❑ Don't know	❑ Yes ❑ No ❑ Don't know	❑ Yes ❑ No ❑ Don't know

31. To the best of your knowledge, do these relatives talk with one another and, if so, which of the following are they <u>most likely</u> to use to communicate with one another?

Relative 1 and Relative 3 ▼	**Relative 1 and Relative 2** ▼	**Relative 2 and Relative 3** ▼
❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell Phone ❑ Telephone ❑ None of these ❑ Don't know ❑ They don't communicate	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell Phone ❑ Telephone ❑ None of these ❑ Don't know ❑ They don't communicate	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell Phone ❑ Telephone ❑ None of these ❑ Don't know ❑ They don't communicate

32. Thinking about your three closest friends who do not live with you please answer these questions.

	Friend 1 ▼	**Friend 2** ▼	**Friend 3** ▼
First name/Initials (optional)	_____ (name)	_____ (name)	_____ (name)
Does this friend live in the Lewiston/ Clarkston area?……...	❑ Yes ❑ No	❑ Yes ❑ No	❑ Yes ❑ No
<u>If no:</u> About how far away from Lewiston/Clarkston do they live? ……..	_____Miles	_____Miles	_____Miles
About how old is this friend?……...	_____years	_____years	_____years
Approximately, how often do you communicate with this friend?……...	❑ Less than once a month ❑ Once a month ❑ Every week ❑ Everyday	❑ Less than once a month ❑ Once a month ❑ Every week ❑ Everyday	❑ Less than once a month ❑ Once a month ❑ Every week ❑ Everyday
When you want to communicate with this friend, which of the following do you use <u>most</u> often?……...	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell phone ❑ Other telephone	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell phone ❑ Other telephone	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell phone ❑ Other telephone
Is this friend in any of the same organizations, clubs or groups as you?	❑ Yes ❑ No ❑ Don't know	❑ Yes ❑ No ❑ Don't know	❑ Yes ❑ No ❑ Don't know

33. To the best of your knowledge, do these friends talk with one another and, if so, which of the following are they <u>most likely</u> to use to communicate with one another?

Friend 1 and Friend 3 ▼	**Friend 1 and Friend 2** ▼	**Friend 2 and Friend 3** ▼
❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell Phone ❑ Telephone ❑ Don't know ❑ They don't communicate	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell Phone ❑ Telephone ❑ Don't know ❑ They don't communicate	❑ Personal visit ❑ Postal mail ❑ Email ❑ Cell Phone ❑ Telephone ❑ Don't know ❑ They don't communicate

Finally, we have a few questions to help us understand how different people feel about these issues.

34. Including yourself, please list everyone who lives in your household, their relationship to you, age, and gender. (If you live alone, please leave this section blank.)

Household member	Relationship to you (for example, write in spouse, mother, roommate)	Approximate age	Gender
1	**Yourself**	____Years	❑ Male ❑ Female
2	_____	____Years	❑ Male ❑ Female
3	_____	____Years	❑ Male ❑ Female
4	_____	____Years	❑ Male ❑ Female
5	_____	____Years	❑ Male ❑ Female

35. What is the last grade or class you completed in school?

- ❑ None, or grades 1-8
- ❑ Some high school (grades 9-11)
- ❑ High school graduate (grade 12 or GED certificate)
- ❑ Business, Technical, or vocational school AFTER high school
- ❑ Some college, no 4-year degree
- ❑ College graduate (B.S., B.A., or other 4-year degree)
- ❑ Post-graduate training

36. Which one of the following <u>best describes</u> your marital status?

- ❑ Married
- ❑ Cohabiting
- ❑ Divorced
- ❑ Separated
- ❑ Widowed
- ❑ Never been married

37. Which of the following <u>best describes</u> your employment situation?

- ❑ Employed full-time
- ❑ Employed part-time
- ❑ Not employed
- ❑ Retired
- ❑ Not in the workforce

38. In 2004, what was your total family income from all sources, before taxes.

- ❑ Less than $10,000
- ❑ $10,000 to under $20,000
- ❑ $20,000 to under $30,000
- ❑ $30,000 to under $40,000
- ❑ $40,000 to under $50,000
- ❑ $50,000 to under $75,000
- ❑ $75,000 to under $100,000
- ❑ $100,000 or more

39. If you have any additional comments about how you communicate or stay connected with friends and family, learn about local events, or participate in local and non-local groups, please write them in the space below.

Thank you for your help!

Please mail your completed questionnaire in the enclosed envelope to:

Michael J. Stern, Study Coordinator
The Social and Economic Resource Center
Washington State University
Pullman, WA 99164-4014

APPENDIX C

CONTACTS

Cover Letter, Postcard Reminder, and Follow-up Letter

Cover Letter

January 31, 2005

«name»
«ADDR»
«CITY», «STATE» «ZIP»

We are writing to ask your help in understanding how people feel about living in the Lewiston and Clarkston area and how they communicate to get things done for the benefit of local residents.

The success of dozens of local events from the annual dogwood festival to school and college sporting events depends upon the support of local people. We hope to learn whether changes are happening in how people communicate to make local activities happen, which could serve as an important example for people here and elsewhere in the U.S. who wish to strengthen their communities.

We would greatly appreciate it if the adult (18 years and older) in your household with the most recent birthday would complete and return the enclosed questionnaire. The reason we ask for the person in your home who most recently had a birthday, is so that we obtain responses from about the same number of women and men to represent the Lewiston and Clarkston communities.

Answers to these questions are completely confidential and will be released only as summaries in which no individual's answers can be identified. When your completed questionnaire is returned your name will be deleted from the mailing list and never connected to your answers in any way. The survey is voluntary. However, you can help us very much by taking a few minutes to share your experiences and opinions with us. If for some reason you prefer not to respond, please let us know by returning the blank questionnaire in the enclosed stamped envelope.

We have enclosed a small token of appreciation as a way of saying thanks for helping us to understand how people communicate to make communities effective.

If you have any questions or comments about this study, we would be happy to talk with you. Our toll free number is 1-800-833-0867. Or, you can write us at the address on the letter head or by email to mstern@wsu.edu.

Thank you very much for helping with this important study.

Sincerely,

Michael J. Stern, Study Coordinator

P.S. This project has been reviewed and approved by the Washington State University Institutional Review Board. If you have any questions concerning your rights about participating in this project, please contact 509-335-9661 and ask for the IRB coordinator.

Follow-Up Postcard

WASHINGTON STATE UNIVERSITY
Social & Economic Sciences Research Center
PO Box 641801
Pullman, WA 99164-1801

«name»
«ADDR»
«CITY», «STATE» «ZIP»

Last week you should have received a request from me to answer a brief questionnaire about your participation in local events and activities called "*Making Community work in Lewiston and Clarkston*".

If you have already returned the questionnaire please accept my sincere thanks for being so prompt. I really appreciate it. If not, I hope that you will send it back as soon as possible. Your views are important to the success of this survey and helping us understand how people feel about living in the Lewiston and Clarkston area and how they communicate to get things done for the benefit of local residents.

If by some chance you did not receive it or it has been misplaced, please call us toll free at 800-833-0867, or email me at mstern@wsu.edu and we will send you a replacement.

Thank you for your help with this survey.

Michael J. Stern, Study Coordinator
Washington State University Pullman, WA 99164-1801

Follow-Up Letter

February 22, 2005

«name»
«ADDR»
«CITY», «STATE» «ZIP»

About three weeks ago we sent a questionnaire to you that asked for opinions on living in the Lewiston/Clarkston area and how residents communicate to get things done. To the best of our knowledge, we have not yet heard from you.

As of last Friday over half of the questionnaires we mailed have been completed and returned. We are grateful for the efforts of so many people to respond. We are writing to you again because of our concern that people who have already responded may hold different opinions than those who have not. We are hoping to hear from nearly everyone in the random sample of residents who received our request.

We are also sending a replacement questionnaire in case the first one has been lost or thrown away. As mentioned in the letter sent on January 31st, we ask that the adult (18 years and older) in your home with the most recent birthday be the one who completes the questionnaire. We do that so that we can obtain responses from about the same number of women and men throughout the community.

A few people have written to say they do not feel they should complete the questionnaire because of their age, having lived there for only a year or two, or lack of involvement in Lewiston or Clarkston activities. However, for the study to be accurate it is important to hear from all households regardless of how little or how much they might feel they are involved in community activities.

We hope that you will take a few minutes to share your experiences and opinions with us. As mentioned in the previous letter your answers are confidential; all names and mailing addresses are deleted when the questionnaires are returned, and no one's name will ever be connected to their answers. If you prefer not to answer a specific question just leave it blank.

I would be happy to talk with you if you have any questions. You can call me at 1-800-833-0867 or reach me by email, mstern@wsu.edu.

Many thanks for considering this request and best wishes for a pleasant springtime.

Respectfully,

Michael J. Stern, Study Coordinator

APPENDIX D

CODING MANUALS

VERSION 1

Changes made to coding manual after coding began are in italic. The symbols listed below indicate the date of the change, and surround the changes made.

- **GENERAL CODING INSTRUCTIONS:** Any question not answered, or with more than one answer, is coded as "M". Answers such as "Don't Know", "Not Sure", and "?" are coded as "D". (Unless "don't know" is offered as a category: Q23, Q30G, Q31, Q32G, Q33). Missing values, such as "M" and "D" will *not* follow skip patterns, they will continue to the next question. Answers of "None", "-", or "/" will be entered as "0".
- ***Range Coding:*** If the answer given is a range of values and the question accepts decimals, take the average (Q1, Q3, Q12a, Q12b, Q17a, Q17b, Q20, Q21a, Q21b, Q30c, Q32c) . If the question does not accept a decimal answer (Q14,Q16, Q19, Q27, Q30d, 32d), round based on the ID# -- round to the even number if the ID# is even, to the odd number if the ID# is odd.
- ***Multiple Answer Reminder:*** Please place a √ next to questions where the CATI will allow more than one answer to be entered. Noted by "**CODING: Use check reminder**" in the "coding instructions" column.
- ***Yes / No Coding:*** If there are only some "yes" answers given, but other items are unanswered, code the unanswered as "no". Similarly, if the number or letter to the left of the item is circled, code those circled as "yes" and those not as "no". However, if there are any "no" answers given, or if ONLY "no" answers are given, code those items unanswered as missing ("M"). This coding will be used on all questions with a notation **CODING: Yes / No coding**" in the "coding instructions" column. Answers such as "n/a" will be coded as missing ("M").

NOTE: Item letter is 1st in the Q# column, then the column letter.
Questions to check for coding issues: Skim entire questionnaire.

Q#	Type; Range	Entry	Skip To	Coding Instructions
ID#	N; 100-3000			SESRC ID#
MWAVE	C;1,2 M			Mailing Wave
CINI	C; 3 LAW,JEJ, MPS, M			Coder's Initials
COLOR	C; 1-2			**Questionnaire Color.** CODING: If the questionnaire is white, code as "1". If the questionnaire is beige, then code as "2".
VERS	C;2 0105 or 0205			Questionnaire Version
SKIP1	Computation			*CATI NOTE:* If color=1 and vers=105, continue. Otherwise, skip to B1(Version 2 portion)
Q1	D; 0.25-99.99			Years in Lewiston/Clarkston ***CODING: Range Coding***
Q2	C; 1-4			Satisfaction living in this area
Q3	D; 1.0-5.0			How attached you feel to this area. ***CODING: Range Coding***
Q4	C; 1-5			In the last five years, Lewiston/Clarkston has gotten better or worse.

Q5	C; 1-2	2	Q7	Is there any particular change that would make this area a better place.
Q6	T; 1-2			If so, what is that change? *CATI NOTE*: 1 opens an 18 line text box.
Q7	C; 1-5			How often do you travel more than 100 miles outside the area?
Q8a Q8b	C; 1-4			How much do you feel a part of Lewiston? How much do you feel a part of Clarkston?
Q9a-9h	N; 1-8			Which of these are the largest/smallest problems facing residents? **CODING: If R places an "x" or "□" in only 1 box, code that answer as 1. If more than one is marked code as "U." Duplicated #'s (i.e. all 1's and 2's) will be accepted.**
Q10a-Q10g	C; 1-2			Have you ever engaged in any of the following activities… **CODING: *Yes / No Coding.* If part g is not answered and there are yes answers, code part g as "no"**
Q11aa-Q11fa	C; 1-2,3	2	Next "A"	Did you attend or participate in this event in 2004? **CODING: If R checks "no" but continues to the next column, code as "3." Yes/no coding**
Q11ab-Q11fb	MA, 1-4, 5			If yes, please check all sources where you obtained information about this event. **CODING: Use check reminder, if something else is written code as 5.** *CATI NOTE: 5 opens a 2 line text box.*
Q12a Q12b	D;0.00-31.00 D;0.00-744.00			Days spent on local community events Hours spent on local community events. . **CODING: If either days or hours is left blank code as 0, if both are blank code as "m." If both days and hours are answered, enter both. *Range Coding***
Q13	C; 1-3			Is this more or less time than you spent 5 years ago?
Q14	N; 0-25			How many events did you help with? ***CODING: Range Coding***
Q15aa-Q15ia	C; 1-2,3	2 2	Next A Q16	Do you belong to this type of organization? **CODING: If R checks "no" but continues to the next column, code as "3."** *CATI NOTE:* If ia=1, open a 2 line text box, no 3 allowed.
Q15ab-Q15ib	MA; 1-4, 5			Sources where obtained information. **CODING: if something else is written code as 5, use check reminder** *CATI NOTE: 5 opens a 2 line text box.*
Q15ac-Q15ic	C; 1-4			How much a part of these groups do you feel? **CODING: Yes/No coding**
Q16	N; 0-25			How many local organizations, clubs/groups do you belong to? ***CODING: Range Coding***
Q17a Q17b	D; 0.00-31.00 D; 0.00-744.00			Days spent with local group **Hours spent with local group.** CODING: If either days or hours is left blank code as 0, if both are blank code as "m." If both days and hours are answered, enter both. *Range Coding*
Q18	C; 1-3			Is this more or less time than you spent 5 years ago?
Q19	N; 0-25			How many local groups did you serve in a leadership position? ***CODING: Range Codng***
Q20	D; 1.00-5.00			How much do you think the organizations contribute to the quality of life of local residents? **CODING: If the "don't know" is checked, code as "D," *Range Coding***
Q21	C; 1-2	1	Q22	Do you belong to any non-local groups or associations outside the area?

Q21a Q21b	D; 0.00-31.00 D;0.00-744.00			Days per month spent on non-local groups Hours per month spent on non-local groups . **CODING: If either days or hours is left blank code as 0, if both are blank code as "m." If both days and hours are answered, enter both. *Range Coding***
Q22	C; 1-3			Is this more or less time than you spent 5 years ago?
Q23	C; 1-6			What effect do you think the internet is having on most people? **CODING: If ?, or not sure, code as "6".** *CATI NOTE:* no D
Q24a	☐C; 1-2	2	Q30	Do you have Internet access? **CODING: If "no" is checked, but R continues to check others, code as 2 (not checked).**
Q24b-Q24e	☐C; 1-2			Do you have internet access at these locations?
Q25a Q25b	C; 1-6			Hours a week use the internet for work? Other things? **CODING: If more than one answer is checked, take the higher number.**
Q26	C; 1-4			How often do you use the internet to access the web/email?
Q27	N; 0-9			Number of people in your HH with access to an Internet connection. **CODING: Range Coding**
Q28a-Q28h	C; 1-5			How your internet connection gets used.
Q29	C; 1-3			Do you use email more to communicate with…
CK301	C; 4-5	5	CK321	Did R provide information about Relative 1? **CODING: if relative 1 information is blank, but 2 and/or three has information provided, enter that info in relative 1.**
Q30a1	T; 1-2			First name/initials *CATI NOTE*: 1 opens a 1 line text box.
Q30b1	C; 1-2	1	Q30d1	Does this relative live in Lewiston/Clarkston?
Q30c1	D; 1.00-9999.99			About how far away from Lewiston/Clarkston do they live? ***CODING: Range Coding***
Q30d1	N; 5-99			How old is this relative? ***CODING: Range Coding***
Q30e1	C; 1-4			How often do you communicate with this relative?
Q30f1	MA; 1-5			Use to communicate with this relative? **CODING: Use check reminder**
Q30g1	C; 1-2			Is this relative in any of the same organizations as you? **CODING: code "?" or DK or not sure as 3.** CATI NOTE: no "D" allowed.
CK302	C; 4-5			Did R provide information about Relative 2?
Q30a2	T; 1-2			First name/initials *CATI NOTE*: 1 opens a 1 line text box.
Q30b2	C; 1-2	1	Q30d2	Does this relative live in Lewiston/Clarkston?
Q30c2	D; 1.00-9999.99			About how far away from Lewiston/Clarkston do they live? ***CODING: Range Coding***
Q30d2	N; 5-99			How old is this relative? ***CODING: Range Coding***
Q30e2	C; 1-4			How often do you communicate with this relative?
Q30f2	MA; 1-5			Use to communicate with this relative? **CODING: Use check reminder**
Q30g2	C; 1-2			Is this relative in any of the same organizations as you? **CODING: code "?" or DK or not sure as 3.** CATI NOTE: no "D" allowed.
CK303	C; 4-5			Did R provide information about Relative 3?
Q30a3	T; 1-2			First name/initials *CATI NOTE*: 1 opens a 1 line text box.
Q30b3	C; 1-2	1	Q30d3	Does this relative live in Lewiston/Clarkston?
Q30c3	D; 1.00-9999.99			About how far away from Lewiston/Clarkston do they live? ***CODING: Range Coding***

Q30d3	N; 5-99			How old is this relative? ***CODING: Range Coding***
Q30e3	C; 1-4			How often do you communicate with this relative?
Q30f3	MA; 1-5			Use to communicate with this relative? **CODING: Use check reminder**
Q30g3	C; 1-2			Is this relative in any of the same organizations as you? **CODING: code "?" or DK or not sure as 3.** CATI NOTE: no "D" allowed.
Q31a-31c	MA; 1-8, 9			How relatives communicate. **CODING: code as "9" if R writes n/a or no relatives, use check reminder**
CK321	MA; 4-5	5	Q34aa	Did R provide information about Friend 1? **CODING: if Friend 1 information is blank, but 2 and/or three has information provided, enter that info in Friend 1.**
Q32a1	T; 1-2			Name/initials *CATI NOTE*: 1 opens a 1 line text box**.**
Q32b1	C; 1-2	1	Q32d1	Does this friend live in the Lewiston/Clarkston area?
Q32c1	D; 1.00-9999.99			About how far away from Lewiston/Clarkston do they live? ***CODING: Range Coding***
Q32d1	N; 5-99			How old is this friend? ***CODING: Range Coding***
Q32e1	C; 1-4			How often communicate with friend?
Q32f1	MA; 1-5			Use to communicate with this friend? **CODING: Use check reminder**
Q32g1	C; 1-3			Is this friend in any of the same organizations as you?
QCK322	C; 4-5			Did R provide any info about Friend 2?
Q32a2	T; 1-2			Name/initials *CATI NOTE*: 1 opens a 1 line text box.
Q32b2	C; 1-2	1	Q32d2	Does this friend live in the Lewiston/Clarkston area?
Q32c2	D; 1.00-9999.99			About how far away from Lewiston/Clarkston do they live? ***CODING: Range Coding***
Q32d2	N; 5-99			How old is this friend? ***CODING: Range Coding***
Q32e2	C; 1-4			How often communicate with friend?
Q32f2	MA; 1-5			Use to communicate with this friend? **CODING: Use check reminder**
Q32g2	C; 1-3			Is this friend in any of the same organizations as you?
CK323	C; 4-5			Did R provide any info about Friend 3?
Q32a3	T; 1-2			Name/initials CATI NOTE: 1 opens a 1 line text box.
Q32b3	C; 1-2	1	Q32d3	Does this friend live in the Lewiston/Clarkston area?
Q32c3	D; 1.00-9999.99			About how far away from Lewiston/Clarkston do they live? ***CODING: Range Coding***
Q32d3	N; 5-99			How old is this friend? ***CODING: Range Coding***
Q32e3	C; 1-4			How often communicate with friend?
Q32f3	MA; 1-5			Use to communicate with this relative? **CODING: Use check reminder**
Q32g3	C; 1-3			Is this friend in any of the same organizations as you?
Q33a-33c	C; 1-7, 9			Do these friends talk? **CODING: code as "9" if R writes n/a or no relatives.**
Q34aa-ea	C; 1-9,N	N	Q35	Relationship of HH members Enter "N" when table is complete (no more people to enter) **CODING: self=1, spouse=2, child=3, parent=4, sibling=5, grandchild=6, great-grandchild=7, roommate=8, other=9.** *CATI NOTE*: 9 opens a 1 line text box.
Q34ab-eb	N-1-99			Age of HH members
Q34ac-ec	C; 1-2			Gender of HH members

Q35	C; 1-7			Grade or class you completed in school? **<u>CODING</u>: If multiple answers are checked, take the highest**
Q36	C; 1-6			Marital status
Q37	C; 1-5			Employment situation
Q38	C; 1-8			Total family income
Q39a-c	T, 1-2			Additional comments. *CATI Note: Entries of "1" open a 18 line text box*

VERSION 2

Changes made to coding manual after coding began are in italic. The symbols listed below indicate the date of the change, and surround the changes made.

- **GENERAL CODING INSTRUCTIONS:** Any question not answered, or with more than one answer, is coded as "M". Answers such as "Don't Know", "Not Sure", and "?" are coded as "D". (Unless "don't know" is offered as a category: Q23, Q30G, Q31, Q32G, Q33). Missing values, such as "M" and "D" will *not* follow skip patterns, they will continue to the next question. Answers of "None", "-", or "/" will be entered as "0".
- ***Range Coding:*** If the answer given is a range of values and the question accepts decimals, take the average (Q1, Q3, Q12a, Q12b, Q17a, Q17b, Q20, Q21a, Q21b, Q25a, Q25b, Q30c, Q32c) . If the question does not accept a decimal answer (Q14,Q16, Q19, Q27, Q30d, 32d), round based on the ID# -- round to the even number if the ID# is even, to the odd number if the ID# is odd.
- ***Multiple Answer Reminder:*** Please place a √ next to questions where the CATI will allow more than one answer to be entered. Noted by "**CODING: Use check reminder**" in the "coding instructions" column.
- ***Yes / No Coding:*** If there are only some "yes" answers given, but other items are unanswered, code the unanswered as "no". Similarly, if the number or letter to the left of the item is circled, code those circled as "yes" and those not as "no". However, if there are any "no" answers given, or if ONLY "no" answers are given, code those items unanswered as missing ("M"). This coding will be used on all questions with a notation **CODING: Yes / No coding**" in the "coding instructions" column. Answers such as "n/a" will be coded as missing ("M").

NOTE: Item letter is 1st in the Q# column, then the column letter.
Questions to check for coding issues: Skim entire questionnaire.

Q#	Type; Range	Entry	Skip To	Coding Instructions
ID#	N; 100-3000			SESRC ID#
MWAVE	C;1,2 M			Mailing Wave
CINI	C; 3 LAW,JEJ, MPS, M			Coder's Initials
COLOR	C; 1-2			**Questionnaire Color.** CODING: If the questionnaire is white, code as "1". If the questionnaire is beige, then code as "2".
VERS	C;2 0105 or 0205			Questionnaire Version
SKIP1	Computation			*CATI NOTE:* If color=1 and vers=105, continue. Otherwise, skip to B1(Version 2 portion)
B1	D; 0.25-99.99			Years in Lewiston/Clarkston ***CODING: Range Coding***
B2	C; 1-4			Satisfaction living in this area
B3	D; 1.0-5.0			How attached you feel to this area. ***CODING:*** **if there is a □ between #'s code as the lowest # plus .5. If 2 #'s are circled, use range coding.**
B4	C; 1-5			In the last five years, Lewiston/Clarkston has gotten better or worse.
B5	C; 1-2	2	B7	Is there any particular change that would make this area a better place.
B6	T; 1-2			If so, what is that change? *CATI NOTE*: 1 opens an 18 line text box.
B7	C; 1-5			How often do you travel more than 100 miles outside the area?
B8a B8b	C; 1-4			How much do you feel a part of Lewiston? How much do you feel a part of Clarkston?

B9a-B9h	N; 1-8, U			Which of these are the largest/smallest problems facing residents? **CODING: If R places an "x" or "☐" in only 1 box, code that answer as 1. If more than one is marked code as "U." Duplicated #'s (i.e. all 1's and 2's) will be accepted.**
B10a-B10g	C; 1-2			Have you ever engaged in any of the following activities…
B11aa-B11fa	C; 1-2,3	2	Next "A"	Did you attend or participate in this event in 2004? **CODING: If R checks "no" but continues to the next column, code as "3."*Yes / No Coding***
B11ab-B11fb	MA, 1-4, 5			If yes, please check all sources where you obtained information about this event. **CODING: Use check reminder, if something else is written code as 5.** *CATI NOTE: 5 opens a 2 line text box.*
B12a B12b	D;0.00-31.00 D;0.00-744.00			Days spent on local community events Hours spent on local community events. **CODING: If either days or hours is left blank code as 0, if both are blank code as "m." If both days and hours are answered, enter both. *Range Coding***
B13	C; 1-3			Is this more or less time than you spent 5 years ago?
B14	N; 0-25			How many events did you help with? ***CODING: Range Coding***
B15aa-B15ia	C; 1-2,3	2 2	Next A B16	Do you belong to this type of organization? **CODING: If R checks "no" but continues to the next column, code as "3."** *CATI NOTE:* If ia=1, open a 2 line text box, no 3 allowed.
B15ab-B15ib	MA; 1-4, 5			Sources where obtained information. **CODING: if something else is written code as 5, use check reminder** *CATI NOTE: 5 opens a 2 line text box.*
B15ac-B15ic	C; 1-4			How much a part of these groups do you feel? **CODING: *Yes / No Coding***
B16	N; 0-25			How many local organizations, clubs/groups do you belong to? ***CODING: Range Coding***
B17a B17b	D; 0.00-31.00 D; 0.00-744.00			Days spent with local group Hours spent with local group. **CODING: If either days or hours is left blank code as 0, if both are blank code as "m," If both days and hours are answered, enter both. Range Coding**
B18	C; 1-3			Is this more or less time than you spent 5 years ago?
B19	N; 0-25			How many local groups did you serve in a leadership position? ***CODING: Range Coding***
B20	D; 1.0-5.0			How much do you think the organizations contribute to the quality of life of local residents? **CODING: If the "don't know" is checked, code as "D,"**
B21	C; 1-2	1	B22	Do you belong to any non-local groups or associations outside the area?

B21a B21b	D; 0.00-31.00 D;0.00-744.00			Days per month spent on non-local groups Hours per month spent on non-local groups **CODING: If either days or hours is left blank code as 0, if both are blank code as "m," If both days and hours are answered, enter both. *Range Coding***
B22	C; 1-3			Is this more or less time than you spent 5 years ago?
B23	C; 1-6			What effect do you think the internet is having on most people? **CODING: If ?, or not sure, code as "6".** *CATI NOTE:* no D
B24a	☐C; 1-2	2	B30	Do you have Internet access? **CODING: If "no" is checked, but R continues to check others, code as 2 (not checked).**
B24b- B24e	☐C; 1-2			Do you have internet access at these locations?
B25a B25b	D; 0.00-6.00			Hours a week use the internet for work? Other things? ***CODING:* Range Coding. If either work or other things is left blank code as 0, if both are blank code as "m."**
B26	C; 1-4			How often do you use the internet to access the web/email?
B27	N; 0-9			Number of people in your HH with access to an Internet connection.
B28a-B28h	C; 1-5			How your internet connection gets used.
B29	C; 1-3			Do you use email more to communicate with…
B30_1	C; 4-5	5	B32_1	Did R provide information about Relative 1? **CODING: if relative 1 information is blank, but 2 and/or three has information provided, enter that info in relative 1.**
B30a1	T; 1-2			First name/initials *CATI NOTE*: 1 opens a 1 line text box.
B30b1	C; 1-2	1	B30d1	Does this relative live in Lewiston/Clarkston?
B30c1	D; 1.00-9999.99			About how far away from Lewiston/Clarkston do they live? ***CODING: Range Coding***
B30d1	N; 5-99			How old is this relative? ***CODING: Range Coding***
B30e1	C; 1-4			How often do you communicate with this relative?
B30f1	MA; 1-5			Use to communicate with this relative? **CODING: Use check reminder**
B30g1	C; 1-2			Is this relative in any of the same organizations as you?
CB30_2	C; 4-5			Did R provide information about Relative 2?
B30a2	T; 1-2			First name/initials *CATI NOTE*: 1 opens a 1 line text box.
B30b2	C; 1-2	1	B30d2	Does this relative live in Lewiston/Clarkston?
B30c2	D; 1.00-9999.99			About how far away from Lewiston/Clarkston do they live? ***CODING: Range Coding***
B30d2	N; 5-99			How old is this relative? ***CODING: Range Coding***
B30e2	C; 1-4			How often do you communicate with this relative?
B30f2	MA; 1-5			Use to communicate with this relative? **CODING: Use check reminder**
B30g2	C; 1-2			Is this relative in any of the same organizations as you?

B30_3	C; 4-5			Did R provide information about Relative 3?
B30a3	T; 1-2			First name/initials *CATI NOTE*: 1 opens a 1 line text box.
B30b3	C; 1-2	1	B30d3	Does this relative live in Lewiston/Clarkston?
B30c3	D; 1.00-9999.99			About how far away from Lewiston/Clarkston do they live? ***CODING: Range Coding***
B30d3	N; 5-99			How old is this relative? ***CODING: Range Coding***
B30e3	C; 1-4			How often do you communicate with this relative?
B30f3	MA; 1-5			Use to communicate with this relative? **CODING: Use check reminder**
B30g3	C; 1-2			Is this relative in any of the same organizations as you?
B31a-B31c	MA; 1-8, 9			How relatives communicate. **CODING: code as "9" if R writes n/a or no relatives, use check reminder**
B32_1	MA; 4-5	5	B34aa	Did R provide information about Friend 1? **CODING: if Friend 1 information is blank, but 2 and/or three has information provided, enter that info in Friend 1.**
B32a1	T; 1-2			Name/initials *CATI NOTE*: 1 opens a 1 line text box.
B32b1	C; 1-2	1	B32d1	Does this friend live in the Lewiston/Clarkston area?
B32c1	D; 1.00-9999.99			About how far away from Lewiston/Clarkston do they live? ***CODING: Range Coding***
B32d1	N; 5-99			How old is this friend? ***CODING: Range Coding***
B32e1	C; 1-4			How often communicate with friend?
B32f1	MA; 1-5			Use to communicate with this friend? **CODING: Use check reminder**
B32g1	C; 1-3			Is this friend in any of the same organizations as you?
B32_2	C; 4-5			Did R provide any info about Friend 2?
B32a2	T; 1-2			Name/initials *CATI NOTE*: 1 opens a 1 line text box.
B32b2	C; 1-2	1	B32d2	Does this friend live in the Lewiston/Clarkston area?
B32c2	D; 1.00-9999.99			About how far away from Lewiston/Clarkston do they live? ***CODING: Range Coding***
B32d2	N; 5-99			How old is this friend? ***CODING: Range Coding***
B32e2	C; 1-4			How often communicate with friend?
B32f2	MA; 1-5			Use to communicate with this friend? **CODING: Use check reminder**
B32g2	C; 1-3			Is this friend in any of the same organizations as you?
B32_3	C; 4-5			Did R provide any info about Friend 3?
B32a3	T; 1-2			Name/initials *CATI NOTE*: 1 opens a 1 line text box.
B32b3	C; 1-2	1	B32d3	Does this friend live in the Lewiston/Clarkston area?
B32c3	D; 1.00-9999.99			About how far away from Lewiston/Clarkston do they live? ***CODING: Range Coding***
B32d3	N; 5-99			How old is this friend? ***CODING: Range Coding***
B32e3	C; 1-4			How often communicate with friend?
B32f3	MA; 1-5			Use to communicate with this relative? **CODING: Use check reminder**
B32g3	C; 1-3			Is this friend in any of the same organizations as you?
B33a-B33c	MA; 1-7, 9			Do these friends talk? **CODING: code as "9" if R writes n/a or no relatives, use check reminder.**
B34aa-ea	C; 1-9,N	N	B35	Relationship of HH members

				Enter "N" when table is complete (no more people to enter) **<u>CODING</u>: self=1, spouse=2, child=3, parent=4, sibling=5, grandchild=6, great-grandchild=7, roommate=8, other=9.** *CATI NOTE*: 9 opens a 1 line text box.
B34ab-eb	N-1-99			Age of HH members
B34ac-ec	C; 1-2			Gender of HH members
B35	C; 1-7			Grade or class you completed in school? **<u>CODING</u>: If multiple answers are checked, take the highest.**
B36	C; 1-6			Marital status
B37	C; 1-5			Employment situation
B38	C; 1-8			Total family income
B39a-c	T, 1-2			Additional comments. *CATI Note: Entries of "1" open a 18 line text box*