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The International Digital Media & Arts Association

JOURNAL



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SUBMISSION GUIDELINES: Articles on digital media and art related topics are welcome at any time. An abstract of not more than one page should be submitted to the editor via email (cgleber@mailier.fsu.edu).

Upon review, authors will be advised of acceptance for submission. The Journal will include a section for invited and refereed articles. While length will vary from issue to issue due to themes, articles will generally be 1500 to 4000 words. Any author preferring a peer review will automatically have the submission considered for the refereed section of the Journal.

While the Journal will appear in electronic form normally, at least an annual print version will be published.

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Editor's Note

Welcome to the first issue of the International Digital Media and Arts Association's Journal. The Journal is a response to the need of an emerging field involving multiple disciplines and new and emerging areas of study.

Across the academic scene in the United States and Europe to the Far East, digital media activities, articles, and new degree programs have been appearing in somewhat erratic fashion since the late '90s, at least.

Most of these programs have lacked a clear discipline base. The areas of study often included multiple technologies including television and film, art, theatre, communication studies, architecture, computer science, journalism, technology programs, music, gaming, and others.

Interest is high and growing, students are enrolling, and in many situations faculty are without collegial reference points or networks essential to developing their scholarly work.

A group of academic leaders from campuses across the country recognized the challenges being faced as this new field pushed awkwardly forward, and in September 2002, with the assistance of a grant to Ball State University from the Lilly Endowment, they began a set of meetings which led to 15 universities creating the International Digital Media and Arts Association in March of 2003, in Orlando, Florida.

The purpose of the association was to promote the development, application, and understanding of digital media. It was clear that as the field evolved, faculty and practitioners would benefit from a strong network of participating scholars and outlets such as conferences and a journal where credible research, scholarship and experiences could be shared.

Thus, the association and its first conference were established. This Journal evolved from those efforts in a partnership with Ball State University.

Almost three years ago, also with the generous support of the Lilly Endowment, Ball State University began a research project that resulted in the primary content for the first issue of this Journal. The research team, led by Robert Papper, Michael Holmes, and Mark Popovich, took a detailed look at media in Middletown America.

This study, inspired by the Middletown Studies conducted by Robert and Helen Lynd, sought to determine how digital and other media were used on a daily basis in typical American homes.

As the International Digital Media and Arts Association was forming it became clear to all parties involved that a partnership between the new association and the Ball State research project made imminent scholarly

and economic sense, and, thus, the IDMAA Journal was established with the first issue focusing on the Ball State study with responses to their work from scholars from across the country.

We believe the initial issue and its focus on this groundbreaking research effort will create the opportunity for much scholarly exchange over the year, and we invite our readers to respond, formally with articles or less formally with letters.

The Journal will provide an outlet for scholars to share their ideas and research in the digital media and art arena in either the refereed or the invited sections.

While it is only our first issue we anticipate 2-4 issues each year, and although most will be published electronically, at least once per year a paper version will be published.

We welcome your comments, ideas and participation. Peer reviewers are sought, as are new authors. Subscriptions are available and all IDMAA members receive the Journal as part of their membership benefits.

As with any new undertaking, we are evolving as we grow, and that means you are welcome to participate and to grow with us as the digital media and arts field bursts upon the campuses we call home.

Conrad Gleber
Editor

Middletown Media Studies

Media Multitasking ...
and how much people really use the media

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Mark N. Popovich, Ph.D.

Ball State University

Abstract

Three studies of use of a variety of traditional and digital media in “Middletown” are reported: a telephone survey, a diary study, and an observation study.

The studies reveal people spend more than double (129.7 percent) the time with the media than they think they do—11.7 hours a day in total—and while the discrepancies between perceived use and actual use are often huge, they’re also inconsistent across and even within media. Because of media multitasking, total time in media usage is less than the sum of its parts. Summing all media use by medium results in a staggering 15.4 hours per day.

The least media-active person we observed spent five and a quarter hours with the media; the most active person spent over 17 hours—essentially every waking moment—with the media.

Diary tabulations of media use documented more usage than did the telephone survey, but it was still 12.9 percent below observed use. Diary data collection reported an average 9.5 hours a day of media use—or 10.8 hours by summing individual media.

Observation revealed that during almost a quarter of the media day (23.7 percent), people use at least two media at the same time. At 12.4 percent, diaries failed to pick up almost half the simultaneous multiple media usage that observation recorded.

Introduction

Most of what researchers think they know about how people use the media comes from telephone survey research or self-report diaries. There are a host of potential problems with such research. The validity of telephone surveys relies on the premise that in an increasingly complex media world, people can still recall, reconstruct and report their media day with a reasonable degree of reliability. Even though a body of research suggests problems with self-reported media behavior—and even though that research was conducted when there were far fewer choices of media—we still rely largely on self-reported behavioral studies (i.e., telephone and diary research) to determine how people interact with the media and, ultimately, to determine public policy.

The media landscape has grown increasingly complex with many more choices for the consumer, but most media research continues to evaluate use one medium at a time, ignoring the potential complexity of the interplay of multiple media use in a person's day. Single-method, single-medium studies are necessarily limited in what they can tell us about media use today.

With the coming of the Internet to American society and its growth around the world, media practitioners and academics have struggled to find more effective ways to collect usable data from media audiences. The advent of the Internet and explosion of television programming choices have fragmented audiences, created more competition among media for advertising dollars and complicated the way that Americans choose media sources for their entertainment, information, and social needs. In the industry itself, media researchers are finding that dependence on specific measuring instruments (e.g., people meters) and traditional research methods (e.g., survey and diary techniques) has become restrictive and inflexible. This is a long-standing problem; it's been 20 years since advertising executive Jack Hill noted, "... meter methodology is expensive and therefore feasible only in top markets. And while the diary is efficient, it is increasingly inaccurate in today's more complex media environment" (Naples, 1984, p. 42).

A steady stream of technological innovations has challenged traditional media channels as sources for information and entertainment. As the audience has gained more confidence and knowledge about emerging media technologies, and as these technologies become more user-friendly and cheaper to own, media researchers (such as Bechtel, Achelpohl and Akers (1972); Krugman, Cameron and White (1995); and Morrison and Krugman (2001)) have discovered that media use has become a much more complex activity, both in terms of behavior and motivations.

Approaches to media use measurement

Since 1966, the search for more accurate means to measure media activity has led media researchers to test a variety of methods in diverse environments with a range of media. The approaches have been piecemeal as investigators have focused on one medium while considering some of the others in a “hit and miss” fashion. Advertising investigators, in particular, have made a concerted effort to sort out the effect of the new media convergence on how people view television commercials. The motivation for this research is that the more accurate the data that can be presented to advertisers about audience attention to their ads, the more the bottom line will be improved for both advertisers and the media industry.

One of the earliest researchers to study viewer behavior concerning television advertising was Gary Steiner (1966), who had 325 Chicago-area college students observe a member of their own family to document how they watched television commercials. Rather than use diary self-reports or a telephone survey, Steiner was interested in finding “the ultimate measure of the effect of advertising on sales and profits” (p. 272). His three research questions were: 1) What are people doing just before a commercial appears? 2) What overt reaction do they exhibit at its onset? 3) What do they do while it is on the air? Steiner’s observers were given nine days to observe their family watch prime-time commercials for a maximum of 25 hours. Only 183 observations survived various reliability and quality checks imposed by the research team. Steiner determined that his subjects paid direct attention to TV commercials 47 percent of the time.

Media researchers have known about the weaknesses of audience measuring instruments for quite some time. For example, Bechtel, Achelpohl and Akers (1972) compared results from media self-report questionnaires and observed family behavior during television program and commercial viewing. They had 52 subjects complete four questionnaires, a diary for TV viewing, and then they were taped in their homes with their families while watching television. The researchers found that subjects watched 55 percent of the available commercials while viewing television. They identified a clear trend of over-reporting of commercial viewing when they compared filmed observation and diary participation, about 25 percent. They concluded: “Television viewing does not occur in a vacuum; it is always to some degree background to a complex behavior pattern in the home” (p. 299).

By 1995 advertising researchers were still struggling with how best to measure audience exposure to commercials, although previous research had documented the usefulness of in-home observations of media usage. Krugman, Cameron, and White (1995) commented that even though the industry had developed people meters, the meters actually only measured room presence and not actual viewing or watching. They employed 16

Media researchers have known about the weaknesses of audience measuring instruments for quite some time.

Results from studies that focus on either visual orientation or competing activities indicate that viewing is a multifaceted experience that is not all or nothing.

observers to collect data on the attention of 64 subjects to television commercials. Each subject was observed for approximately one hour and most of the observations took place during prime-time television programming. The observers were trained to record actual eyes-on-screen time. They used stopwatches to record visual orientation during two advertising and two programming observation periods. Recall methods and observer field notes added to the study. Investigators found that subjects had their eyes on commercials 33 percent of the time compared to 62 percent of the time for programming. The authors point out in their conclusions that “both program and commercial viewing often take place among myriad other activities” (p. 9).

Concerned about the kinds of activities that take place when people watch television, Krugman and Johnson (1991) were interested in looking at changes in media behavior when new media services enter the home—in this case VCRs. They noted:

Results from studies that focus on either visual orientation or competing activities indicate that viewing is a multifaceted experience that is not all or nothing. In almost all cases, the studies have been limited to using either timed visual orientation or activities that can compete for visual attention. No one study combines timed visual orientation and activities taking place while the set is on. (p. 217).

Their research made use of five developmental focus groups, a mail survey, and in-home observations followed by focus groups. Mail questionnaires were sent to 655 subjects, and 400 were completed. In-home observations took place in 18 homes, and they lasted the length of one VCR movie or 1-2 hours of TV viewing time. The authors found that in-home preparation activities differed prior to watching television and viewing VCR movies. They discovered that 81.7 percent of viewers paid attention to VCR movies, but only 60.7 percent attended to traditional television. They also found support for their belief that television viewing was a multifaceted experience.

Other investigators have delved into comparisons of traditional media versus digital media, such as computers or Internet use. Underlying these comparisons is an attempt to test predictions that the use of traditional media decreases as computers and the Internet increase in use. We present a sampling of these studies because they have some bearing on the focus and purpose of our own research.

Stempel, Hargrove and Bernt (2000), updating a previous study by Stempel and Hargrove (1996), sought to identify the extent of regular use of the Internet and online media. They were concerned about how the traditional media were affected by the increasing use of the Internet, and they

wanted to know if the use of media was related to age, income, and education. They interviewed 805 adults by means of a national random sample of telephone numbers. They asked about the use of ten media including local TV news, network TV news, daily newspapers, radio news, radio talk shows, news magazines, political magazines, grocery store tabloids, the Internet, and online services. Results suggested that those who use the Internet were more likely to be regular newspaper readers and regular radio news listeners. The authors opined that Internet users were more likely to be information seekers than non-users. Older people were more likely than young people to watch both local and network TV news, read newspapers, and read news magazines. The heaviest users of the Internet and online services were people under 35. They found that people with higher incomes were more likely to be newspaper readers and users of the Internet and online media. Newspaper readers tended to be those with high education levels, and they depended more on news and political magazines. Although the authors speculated that information seekers might listen to the radio while they were using the Internet, no evidence was available to show that media users might use two or more media at the same time.

Coffey and Stipp (1997) reported that data on the use of computers and television were quite limited, but their research focused on finding an answer to whether TV viewing was declining. They made use of the PC Meter Service that began commercial operation in 1996, although they understood that the new service would not be able to measure away-from-home service. They gathered data from 10,076 homes and found that males are more likely than females to actually use the PC in PC-owning households. PC users averaged 2.3 hours per day over a month sample period, and they found only 6 percent of the PCs turned on during prime-time television. They determined that 15 percent of PC usage was devoted to games, 25 percent to entertainment and communications, and 16 percent to business productivity applications. The authors found that 32 percent of college educated adults watched prime-time television, but only 7 percent of PC users with the same demographics used the computer at the same time. Finally, noting it has been documented that over 40 percent of computer owners have a PC and TV in the same room, the authors suggested that interactions between PC uses and other media, such as newspapers and magazines, should be explored.

Perse and Dunn (1998) conducted a study to explore the home media environment of home computer users. They wanted to see how useful people believe computers were for fulfilling traditional media-related needs, whether perceptions about the utility of computers differed between users, computer owners, and non-owners, and whether time spent with traditional media differed among computer owners, users, and non-owners. By using a national random-digit-dialing telephone survey, the authors generated 1071

Although the authors speculated that information seekers might listen to the radio while they were using the Internet, no evidence was available to show that media users might use two or more media at the same time.

telephone surveys. Questions were asked about TV viewing hours, cable TV viewing hours, subscribers and premium subscribers, computer ownership, CD player ownership, and computer connectivity. Investigators found that computers were not a primary channel for fulfillment of media-related needs. Home computer adoption was more common in households with higher status occupations. Computer users watched TV and cable less than non-users, were more print-oriented than non-owners, and had higher levels of education and income. CD player owners were more likely to recommend computers for learning needs, and they watched more cable television. The authors noted that they found little evidence that computers were displacing traditional patterns of media use.

Lin (1998) found similar results in her metropolitan area telephone survey of 561 participants. She used Rogers' (1995) "diffusion of innovation" scheme to study computer adopters. She found that the PC adoption rate could be predicted by ownership of other communications technology devices. Adopters have a greater innate need for innovativeness, and they tend to be baby boomers with annual incomes above the national average. She found that gender was not related to PC adoption, nor was use of print media and radio.

Atkin and Jeffres (1998) tested the media substitution hypothesis that suggests that new media will restructure the way the audience views established media. They examined how the adoption of the Internet was related to the use of other media through a telephone survey which involved a regional sample of 377 respondents. They found that those who had Internet access tended to spend less time viewing TV, and that magazine readership, movie viewership, and video were positively related to Internet use. Those without Internet access had a greater local media orientation. The authors did not find support for the media substitution hypothesis.

Morrison and Krugman (2001) qualitatively analyzed how in-home media technologies influenced the social environment in the home considering social facilitation, rule making, shifting/expanding media use, and attitudes toward the technologies. Phase 1 of their study utilized focus groups to determine whether questions generated were understandable and covered topics that could be used in family interviews. Phase II utilized long interviews with 20 families: 10 owned low/moderate media technologies, and 10 owned high level media technologies. A total of 66 people participated in the family interviews. The authors used a clustering approach to compare the roles of computers and televisions in the homes of the families. For low/moderate media technology families the TV cluster represented entertainment, and the computer represented work or a tool. For the high media technology families, the computer represented entertainment, information, and communication, while the television represented entertainment. "An overriding theme of this study is that a certain amount of valuing is associat-

ed with media technologies,” concluded the authors (p. 157). The implication is that as the computer becomes more prominent in high media technology homes, the television becomes devalued as a way to spend leisure time.

While the bulk of digital media use studies have been conducted in the home, either by means of telephone surveys, diaries, or observation, several investigators have gone outside the home environment to determine the effect of geography on the adoption and use of media technologies.

Krotz and Eastman (1999) examined how the public uses television in public places by comparing data from Indianapolis and Hamburg, Germany. The investigators used observational data, supplemented by on-site interviews and archival information. They found that the function of TV sets in public places fell into three categories: Diversion, Decoration, and Attraction (drawing in customers). Although not an audience measurement study, the research demonstrates the importance of attending to media use outside of the home.

Hindman (2000) tested the existence of a digital divide between a metropolitan and a non-metropolitan area. He felt that residents of a metropolitan area would make more use of information technologies than would residents of a non-metropolitan area. He conducted a secondary analysis of two national surveys which had been conducted in 1995 and 1998. He found evidence that the divide over information technologies was growing between metropolitan and non-metropolitan areas, although the differences in home computer ownership were decreasing. Income, education, and youth were related to the acquisition of information technologies.

At least three themes emerge from the review of literature which suggest further research is needed. First, investigators have argued that media usage occurs in a complex environment, but little, if any, research adequately tests that proposition. The Stempel, Hargrove and Bernt study measured the use of 10 different types of media but paid little attention to any interactions between those media. Advertising researchers reported that complexity appeared as supplementary activities, like sewing, reading, or writing, while their subjects attended to either television programming or commercials. However, Coffey and Stipp suggest another kind of complexity—as interactions that take place between computer use and other kinds of media use. The study reported here attempts to measure such interactions. How often does media multitasking happen in the everyday life of the media user, and are there any patterns to how the media user employs multiple media sources?

Second, non-home locales are often overlooked when media researchers have measured media use. Investigators for this study have collected diaries covering home and non-home activities, and completed observations of a group of local citizens for their entire waking day. This will shed some light

Investigators argued that media usage occurs in a complex environment, but little, if any, research adequately tests that proposition.

on how media users utilize media in their workplace, cars and other locations as well as in their homes.

Third, the literature review suggests that media use estimates are sensitive to the research method applied. We compare results from three different research techniques to explore their strengths and weaknesses.

Comparisons between telephone surveys (self-reported perceptions of use), media diary research (self-reported use), and field study (observed use) in the same study have seldom been carried out, and when they have been performed, they occurred before the explosion in media growth and diversifying of audience activity.

Research Questions

Starting in the 1920s, with the work of Robert and Helen Lynd, no community in the United States has been examined more thoroughly than what came to be known as Middletown (Muncie, Indiana and surrounding Delaware County). The Lynds' first book, *Middletown: A Study in Modern American Culture* (1929) was considered the first effort to document the total culture of one American city. The Lynds used survey instruments and personal interviews to collect their data. Their second effort, *Middletown in Transition: a Study in Cultural Conflicts* (1937), documented changes that came to the city in the ten years after their first study, including the city's first radio station.

In 1982, University of Virginia professor Theodore Caplow and his four assistants dusted off the Lynds' original surveys and gathered data again in Middletown. His book, *Middletown Families: Fifty Years of Change and Continuity* (1982), was the first of a series of studies that updated the pioneering work of the Lynds. Caplow followed up on the Lynds' communication information and found, for example, that median television viewing in Middletown was 28 hours a week. This was considered a staggering amount in 1976 for any city.

Drawing on that history, we conducted three studies focusing on the people of Middletown—as a microcosm of the national population—to determine how people use the media; how they engage in multiple and overlapping media use; and how people's perceptions and self-report of media use differ from their observed media use. This study is designed to overcome common weaknesses of audience measurement and media use studies: Most studies apply a single method and are subject to that method's limitations and biases, and most focus on one medium, not a full range of digital and analog media. The study is also designed to provide a snapshot of media use in a single community. Is Muncie, the archetypal “middle American” town of the famous Middletown sociological studies, a representative American community in its media use?

In brief, the descriptive, multi-method study reported here is an initial attempt to address the following questions:

1. To what extent do people recognize, recall and identify their own media behavior?
2. Can we identify a more accurate picture of how, when and where people use what media?
3. Can we identify the extent of simultaneous multiple media usage?
4. Can we identify the relative merits of differing techniques in measuring media usage?

Methodologies

The telephone survey

There were two purposes for the telephone survey: First, to determine to what extent Middletown reflects the nation as a whole in perceptions of media use and media technology inventory; second, to serve as a comparison against which to measure the results received through other research techniques.

The telephone study was completed in July and August of 2003. Questions were adopted from recent media use surveys by the Pew Research Center for the People and the Press (<http://people-press.org>).¹ Questions were added to address simultaneous usage of multiple media. A professional telephone survey firm conducted the survey. A random-digit dialing sample of 401 persons (18-years-old and older) in Delaware County provided a confidence interval of 5 percent.

We asked 74 questions about media use and technology, and nine demographic questions. Survey days were spread out evenly across the week, including the weekend. Of the 74 questions, 59 were identical in wording to questions asked in various Pew Research Center studies, and nine were identical to multiple-media usage questions that Papper asked in a national study (unpublished) conducted in January and February of the same year. That study involved a random national sample of 1,003 adults, 18-years-old and older. For the Middletown telephone survey, a total of 4,915 calls were made to yield the 401 completed and valid surveys.

The complete telephone survey—questions and answers—is provided in Appendix A.

The diary study

Participants in the diary study maintained a comprehensive daily log of media usage (at home, at work, and elsewhere) for one day or one week during the study period. They were asked to note each media use episode's start and stop time, media source, and location. Participants (18-years-old and older) were recruited by calling randomly selected published telephone numbers in Delaware County. A \$20 honorarium was offered for completed one-day diaries; a \$50 honorarium was offered for completed one-week diaries. Overall, 1630 one-day and 114 one-week diaries were mailed. Participants were called with reminders before their scheduled diary dates and again afterward to urge return of the completed diary (with up to 3 follow-up calls). They returned 359 diaries, of which 83 were weekly diaries (an overall response rate of 21 percent; one-day response rate 17 percent, one-week response rate 73 percent). Days were spread out evenly across the week, including the weekend. The first day of each weekly diary is included

in the one-day diary analysis. Analysis of the remaining weekly diary days is not reported in this study. The diary instrument is provided in Appendix B. The diary study data collection occurred in July, August and early September of 2003.

The observation study

Full-day “shadowing” observation provided a media use measure not dependent on self-report. Observers were trained in the use of a media use log and in entry of descriptive and clarifying notes. Callers made random calls in Delaware County asking for people (18-years-old and older) to participate in the observation study. People who did not wish to participate in the full day observation were then asked if they would participate in either a one day or one week diary study. A total of 14,321 calls were made to recruit the observation and diary respondents. It proved impossible to recruit the desired number of observation study participants through random calling, so we turned instead to targeted non-random sampling in an attempt to match key national census demographics (i.e., age, gender, ethnicity, income, and education). Participants were offered a \$100 honorarium for participation in the study. Observers gathered data on 101 participants for a full day. Observation days were distributed throughout the study period, including the weekend.

Two observers were used for each shadowing observation (2 shifts of approximately 8 hours each). Observers accompanied participants to work and other venues. They were instructed to minimize casual conversation with participants. Participants were called after observation to complete the observational record for portions of the waking day before observer arrival or after observer departure.

The observer’s media use log is provided in Appendix C.

Results

Telephone survey

Overall, the Middletown results appear remarkably consistent with national figures.² Telephone survey questions 7, 8, 10, 11, 17, 20, 22 and 25 (Appendix A) demonstrate the similarity between the Middletown telephone data and the national Pew numbers.

When asked whether they had watched “the news or a news program on

television yesterday” (Q8), 56.4 percent of the Middletown sample said yes, compared to 55 percent of the national Pew sample from April-May 2002. Likewise, when asked whether they watched “anything else on television yesterday” (Q10), 61.8 percent of the Middletown sample said yes, compared to 59 percent of the Pew national sample from April-May 2002.

Table 1 reports perceptions of time spent reading newspapers, and Table 2 displays perceptions of time spent watching television (excluding news). They display remarkable consistency, time interval by time interval, between Middletown and national results. The same can be said about Tables 3 and 4, comparing time spent reading magazines and time spent reading books.

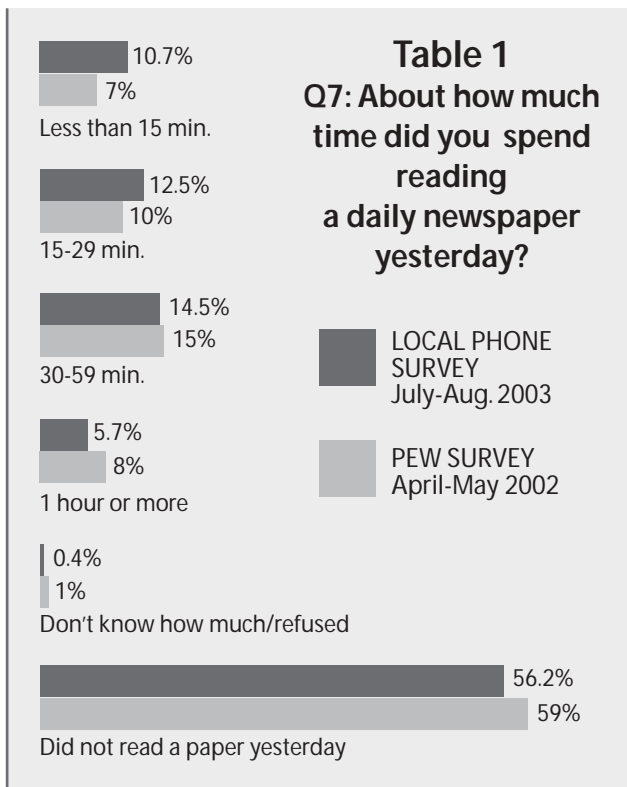
When we asked whether people had a computer in their home (Q22), 66.3 percent of Middletown respondents said yes, compared to 65 percent of the Pew national sample from April-May 2002. And when asked whether

they ever go online (Q25), 61.3 percent of the Middletown sample said yes, compared to 65 percent nationally.

In November 2002, Pew reported that 61 percent of respondents said they were Internet users. In April 2002, Pew reported that 62 percent of respondents were Internet users, with 71 percent of computer users identifying themselves as Internet users.

Middletown results for virtually all of these and the other questions fall within +/-3 percent of national survey results.

In media technology ownership, Middletown was comparable to the



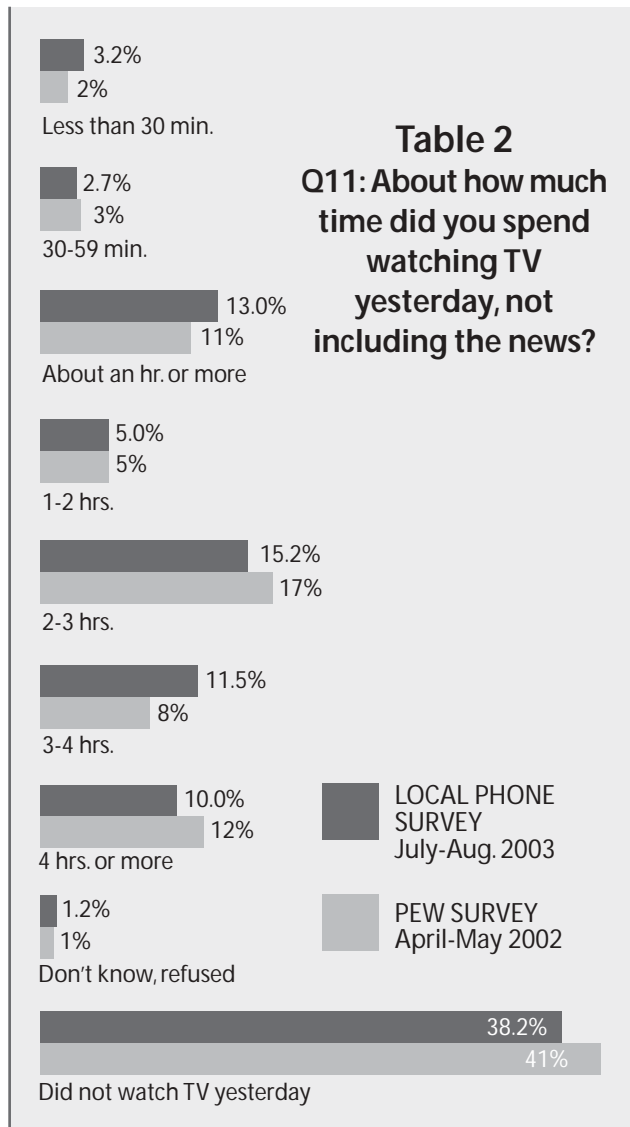
Note: Times were not read in the telephone surveys.

nation in cable TV availability (91 percent Middletown v. 92 percent national), in ownership of PDAs (9.5 percent Middletown v. 11 percent national) and TiVo/Replay (DVR) devices (2.5 percent Middletown v. 3 percent national). Middletown cable subscription was exactly at the national average of 69.3 percent. On the other hand, Middletown's ownership of cell phones was a bit below average (55.9 percent Middletown v. 64 percent national), and it was well below in pagers (8.2 percent Middletown v. 16 percent national). Middletown was higher in subscription to satellite programming (22.2 percent Middletown v. 14 percent national) and ownership of DVD players (62.3 percent Middletown v. 44 percent national). Broadband adoption by Internet users is almost identical between Middletown (30 percent) and the country as a whole (31 percent).

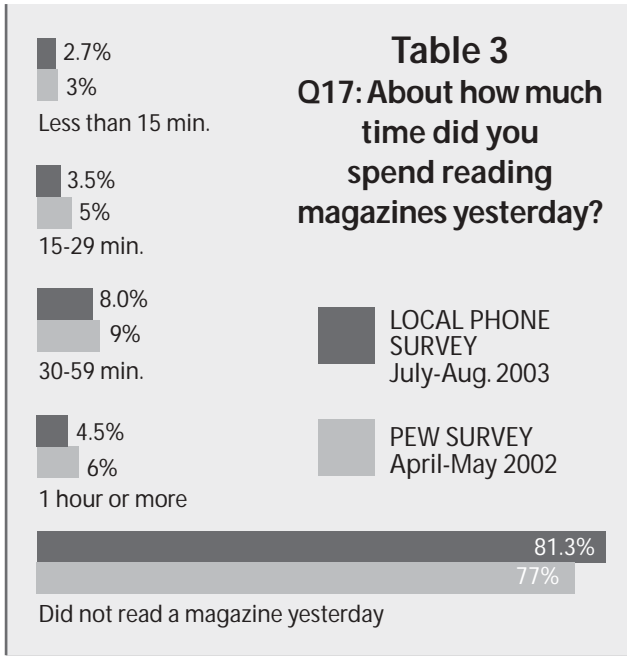
The telephone survey results give investigators confidence that, despite some socioeconomic differences from national demographics, Muncie and Delaware County, Indiana, are still "Middletown" where perceptions of media use are concerned. Results from the telephone survey will be discussed in more detail as they are compared with results from the diary and observation studies.

Comparison of Telephone Survey, Diary Study and Observation Study results

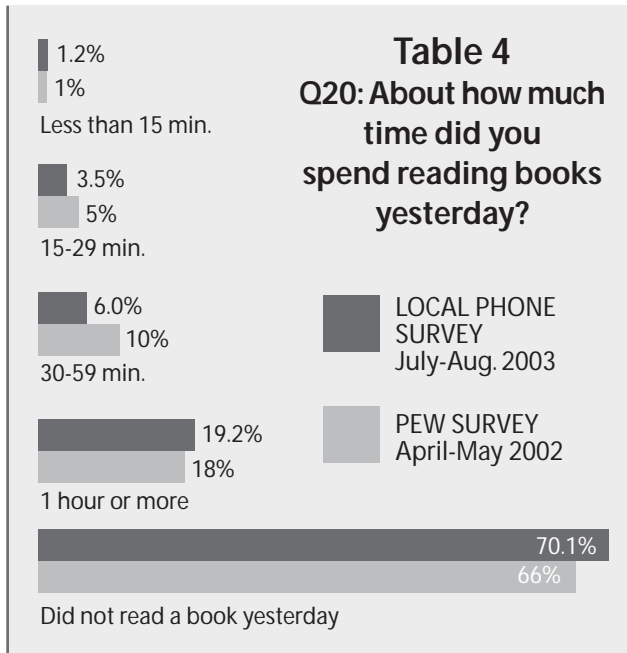
Media use appears to be a lot more extensive than people think (Table 5). In every case except one (books), actual measured media use (both reported in diaries and observed) exceeded perceived media use—sometimes by huge margins. And observed use always exceeded perceived use. Diaries picked up more usage than survey self-report, but results were still generally well below what was observed. Perception of time with media was also inconsis-



Note: Times were not read in the telephone surveys.



Note: Times were not read in the telephone surveys.



Note: Times were not read in the telephone surveys.

tent across and even within media, making conclusions about multiple media platforms based solely on phone research that much more problematic.

People spend more than double (129.7 percent) the time with the media than they recall—an average 11.7 hours a day of media use in total. Because of media multitasking, total time in media use is less than the sum of its parts. Simply summing all use across media results in a staggering average 15.4 hours per day.

Diary tabulations of media use picked up more usage than did telephone survey, but it is still 12.9 percent below observed use. Diary data collection produced an average 9.5 hours a day of media use—or 10.8 hours by summing individual media use.

Even though Table 5 includes media multitasking, the total media usage falls below the sum of the provided figures because it only includes media for which a direct comparison across all three studies is available. The least media-active person we observed spent five and a quarter hours with the media; the most spent over 17 hours—essentially every waking moment—with the media. Among the diaries, the least media-active person listed only 12 minutes with the media over the entire day. The median media use time recorded by the observations (12 hours) was 30.5 percent higher than the diaries (9.25 hours).

Media use appears to be far more complex than people think. Table 6 shows the consistent difference in

Table 5
Time Spent Per Person Per Media (in minutes) by
Telephone Survey, Diary and Observation Methods for
Selected Media³

MEDIA	LOCAL PHONE SURVEY ³	LOCAL DIARY STUDY	LOCAL OBSERVATION STUDY
Newspapers	15	26	17
Magazines	8	10	14
Books	18	17	36
Total Reading (books, magazines and newspapers)	41	53	67
All Radio Listening	74	132	129
All TV Viewing	121	278	319
Computer¹	21	52	64
Online	29	57	78
Total (Above) Media²	286 (4.8 hrs./day)	572 (9.5 hrs./day)	657 (11 hrs./day)

¹ Home use only

² In all cases, the numbers include simultaneous media usage

³ See end note 3 for calculation

reported single and multitask media use between diaries and observation. Single use is defined as the use of only one medium. Multitask use refers to exposure to two or more media at the same time. The telephone survey results on media multitasking (Tables 14 - 17) generally bore little similarity to observed results. While the data from the diary study are much closer to that observed, they pale in depth and texture compared to observation. For example, the total media multitasking in the diary study (12.4 percent) was half as much as the observation study (23.7 percent). The disparity in granularity in the two forms of measurement also appears in the average number of log entries for each participant. At 36 log entries, observers produced, on average, three times more entries than did diary participants (12 entries). The median number of entries also had a 3:1 relationship (30:10). Entries for diaries ranged from one to 90; for observations, the range was seven to 154. Some media activity virtually disappears with diaries, and even where diary totals are similar to observation results, the on-and-off, in-and-out nature of some media use is largely missing in the less-detailed data diaries provide.

As far as media multitasking is concerned, diary research appears to have produced results most similar to observation results for music, computer programs and magazines; it is farthest off on TV, Internet, game boxes and books.

Telephone survey research appears fully capable of determining whether people possess various media technologies, but their accuracy in even the simple task of determining whether they used a particular medium appears suspect.

Table 6
Single Use and Multitasking Use of Media by Diary and Observation Methods

MEDIA	% SINGLE-USE DIARY	% SINGLE-USE OBSERVED	% MULTITASK USE DIARY	% MULTITASK USE OBSERVED
TV	87.3%	71.9%	12.7%	28.1%
VCR	90.5	86.8	9.5	13.2
DVD	98.0	90.6	2.0	9.4
Radio	83.7	72.9	16.3	27.1
CD	59.7	50.3	40.3	49.7
Cassette	24.2	71.0	75.8	29.0
Computer	42.0	36.0	58.0	64.0
Web surfing	78.1	34.3	21.9	65.7
Email	58.3	65.6	41.7	34.4
Inst. Msg.	33.6	42.2	66.4	57.8
Games	64.1	83.9	35.9	16.1
Telephone	47.0	21.3	53.0	78.7
Cell phone	65.7	38.0	34.3	62.0
Newspaper	61.6	49.6	38.4	50.4
Magazine	49.5	42.8	50.5	57.2
Book	67.2	38.1	32.8	61.9
PDA	16.4	67.6	83.6	32.4
MP3	64.2	73.6	35.8	26.4
Postal mail	65.7	47.2	34.3	52.8
Other media	72.4	44.6	27.6	55.4
All Video	93.5	88.2	6.5	11.8
All Music	56.6	52.9	43.4	47.1
All Phone	51.2	23.4	48.8	76.6
All Reading	61.1	42.0	38.9	58.0
All Computer	57.9	42.2	42.1	57.8
All Internet	65.6	47.4	34.4	52.6
All Media	87.6	76.3	12.4	23.7

Note that even when the issue is simply, “Did you use” the medium, incidence tends to increase as we move from survey research to diary research to observation research (Table 7). The only exceptions are TV, where reported and observed use are essentially the same, and reading, where the results are less consistent. In reading, all three methodologies are close on incidence (percent of total sample who read a newspaper, book or magazine). But diary records lower usage than surveys or observation for books and observation studies picked up much more magazine reading than the other two research techniques.

Note in Table 7 that common and widespread use of telephone and mail failed to register with many diary keepers, despite explicit instructions to record them, as apparently did at least some other short-duration activities

(radio and email).

The same general pattern of media use continues when comparing amount of media use by diary and observation research (Table 8). Only radio and newspaper aren't higher when we compare overall observed use to overall reported use. When we look at average time by users only, as opposed to averages across all participants, the numbers become more variable. Observed usage per user is higher for TV, computer, all reading, books, music, games and all media. Observed use per user is lower for radio, newspaper, magazine, phone, email and postal mail. The figures are the same for

Table 7
Incidence of Media Use by Research Method (Telephone Survey, Diary, Observation)

MEDIA	% OF SAMPLE THAT USED THE MEDIA YESTERDAY PHONE SURVEY	% OF SAMPLE THAT USED THE MEDIA YESTERDAY DIARY	% OF SAMPLE THAT USED THE MEDIA YESTERDAY OBSERVED
All TV (excludes VCR and DVD)	75.3%	91.4%	91.1%
Radio	57.8	72.7	83.2
All reading (includes books, newspapers, magazines)	66.6	68.0	78.2
All computer (includes, software, online, email, chat) ¹	38.7	45.1 ²	54.5 ³
Any online (includes Internet, email, chat— included in "all computer")	33.4	47.1	63.4
Email (included in "all computer")	30.2	39.3	54.5
Newspaper	43.9	53.8	53.5
Books	29.9	19.8	37.6
Magazines	19.0	18.9	33.7
Any phone	NA ⁴	53.8	100.0
Telephone (included in "any phone")	NA	45.7	93.1
Internet (included in "all computer")	NA	22.8	55.4
Postal mail	NA	12.3	53.5
All Music	NA	30.1	46.5
Cell phones	NA	24.0	42.6
CD	NA	28.1	41.6
All video	NA	19.8	27.7
DVD	NA	9.2	11.9
Games	NA	7.8	7.9
Mp3	NA	2.2	5.9

¹ Home only

² All computer for diary is 52.4

³ All computer for observation is 72.3

⁴ Missing variables mean that the equivalent question was not asked in the telephone survey.

Table 8
Time Spent (in minutes) with Media Per Person, For All and For Specific Media Users by Diary and Observation

MEDIA	MEAN TIME PER DAY OVERALL DIARY	MEAN TIME PER DAY OVERALL OBSERVED	MEAN TIME PER DAY PER USER DIARY	MEAN TIME PER DAY PER USER OBSERVED
All TV (antenna, cable and satellite, but not VCR or DVD)	278	319	304	350
All computer (software, Internet, email, etc.)	85	144	163	199
Internet only	57	78	122	123
Radio	132	129	182	155
All reading (books, magazines, newspaper)	53	67	78	86
Books	17	36	87	96
Newspaper	26	17	48	32
Magazines	10	14	54	41
Music	30	57	101	124
All phone	29	53	55	53
Email (included above in "all computer")	27	32	68	58
Postal mail	2	7	16	13
Games	5	12	63	154

Internet use. The inconsistencies per user may reflect a far greater variance of record-keeping for diaries than that by the trained observers. Table 7 appears to support that possibility, as the incidence of use for all media is the same or up from diary results to observation results; all but two are up from survey to diary (and those two, TV and newspaper, are essentially the same); and all are up from survey to observation results.

While Table 5 makes clear how poorly people recognize how much use they make of a given medium, Table 9 shows both the incidence of use and amount of use for all media for which we have direct comparisons. Other than the inconsistencies within reading, all media usage by incidence shows an increase from survey results to diary results to observation study results. In amount of use, there's more variability, but with few exceptions (part of newspaper, books and radio), time spent also increases from survey to diary to observation results.

People do a far better job identifying their use of printed media than their use of broadcast media and computers. Tables 10 to 13 compare amount of media use by research methodology. Table 10 includes reading—newspaper, magazines and books. Note that the telephone survey results for Middletown and Pew are all within +/-4 percent except one. While print media totals are closest among the methodologies, arriving at that similarity takes a more torturous route. Between survey and diary results the differ-

Table 9
Daily Incidence of Use (in percent) and Amount of Use (in minutes) of Media by Research Method

MEDIA	INCIDENCE OF USE – PHONE SURVEY ¹	INCIDENCE OF USE – DIARY	INCIDENCE OF USE – OBSERVED	AMT. OF USE – PHONE SURVEY ¹	AMT. OF USE – DIARY	AMT. OF USE – OBSERVED
Newspaper	43.9%	53.8%	53.5%	15	26	17
Magazine	19.0	18.9	33.7	8	10	14
Books	29.9	19.8	37.6	18	17	36
Total reading	66.6	68.0	78.2	41	53	67
Total radio	57.8	72.7	83.2	74	132	129
Total TV	75.3	91.4	91.1	121	278	319
Computer ²	38.7	45.1	54.5	21	52	64
Internet ³	33.4	47.1	55.3	29	57	78
Email ³	30.2	39.3	54.5	NA	27	32

¹ Survey questions asked whether the respondent happened to use the particular medium “yesterday.”

² Computer incidence and usage is home only.

³ Internet and Email are for all locations.

Table 10
Amount of Time Spent Reading by Telephone Survey, Diary and Observation Research Methods

AMT. OF USE	PEW PHONE SURVEY April-May 2002 ¹	LOCAL PHONE SURVEY Jul-Aug. 2003 ¹	LOCAL DIARY RESULTS Jul-Aug. 2003	LOCAL OBSERVATION RESULTS Jul-Aug. 2003
NEWSPAPER				
Less than 15 min.	7%	10.7%	3.3%	13.1%
15-29 min.	10	12.5	12.8	15.3
30-59 min.	15	14.5	19.4	16.3
1 hour or more	8	5.7	18.4	8.7
Don't know/refused	1	0.4		
Did not read	59	56.2	46.1	46.6
MAGAZINES				
Less than 15 min.	3	2.7	2.0	4.7
15-29 min.	5	3.5	4.0	10.5
30-59 min.	9	8.0	5.5	10.8
1 hour or more	6	4.5	7.4	7.5
Did not read	77	81.3	81.1	66.5
BOOKS				
Less than 15 min.	1	1.2	0.6	5.1
15-29 min.	5	3.5	1.5	3.6
30-59 min.	10	6.0	4.9	3.0
1 hour or more	18	19.2	12.8	26.0
Did not read	77	70.1	80.3	62.2

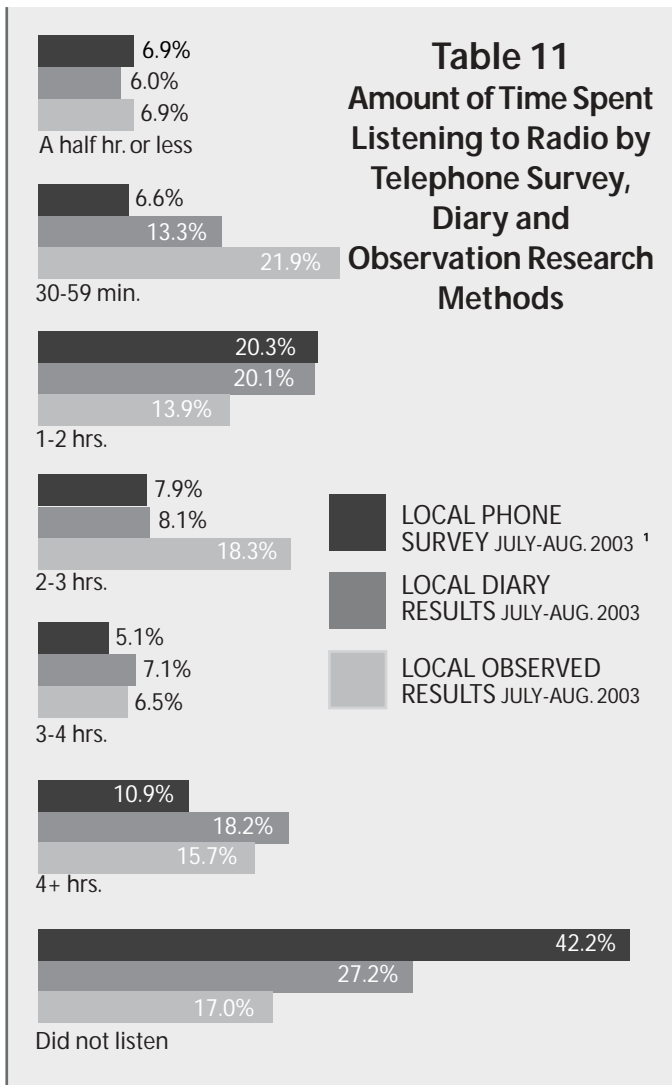
¹ Telephone survey questions asked whether the respondent happened to use the particular medium “yesterday.”

ence is +/-12.7 percent; survey to observed results vary as much as +/-18.1 percent. Note that, overall, telephone survey comes closest to diary and observation research results in the reading categories, although observation picked up more magazine and book reading than either the survey or diary study.

For both radio and television (Tables 11 and 12), note the very high “did not listen” and “did not watch” for the telephone survey—in comparison to use as recorded in the diary and observation studies. The Pew numbers also reflect this phenomenon, reporting 39 – 45 percent saying they didn’t watch

or listen. In radio, most time categories were well off the mark, and it suggests an inability of participants to determine either “whether” or “how much” when an activity involves many venues in many short increments. Note that the perception of time spent with radio appears farthest off at the shorter listening time. In time spent with television, however, the very high number of “did not watch” responses might simply reflect a reluctance to acknowledge TV viewing. The “did not watch” results run counter not only to our diary and observation study results, but also to industry figures by Nielsen Media Research, released in July 2003, which also show television reaching 90 percent of the American public. Note also that more people responded in the survey that they watched less than two hours of TV daily than either diaries or observation revealed, and strikingly fewer people reported in the telephone survey that they spent four or more hours per day viewing TV than recorded in the diary study or observation study.

Table 11
Amount of Time Spent
Listening to Radio by
Telephone Survey,
Diary and
Observation Research
Methods



¹ Telephone survey questions asked whether the respondent happened to use the particular medium “yesterday.”

Time spent on the Internet (Table 13) is more difficult to com-

pare because the Middletown telephone survey gathered the data differently (grouping together everything over one hour). On the other hand, the telephone survey data was in line to that point. Here, the biggest discrepancy involves a general trend toward longer use found in the observation study. Note that observation produced a more even distribution of use across time increments.

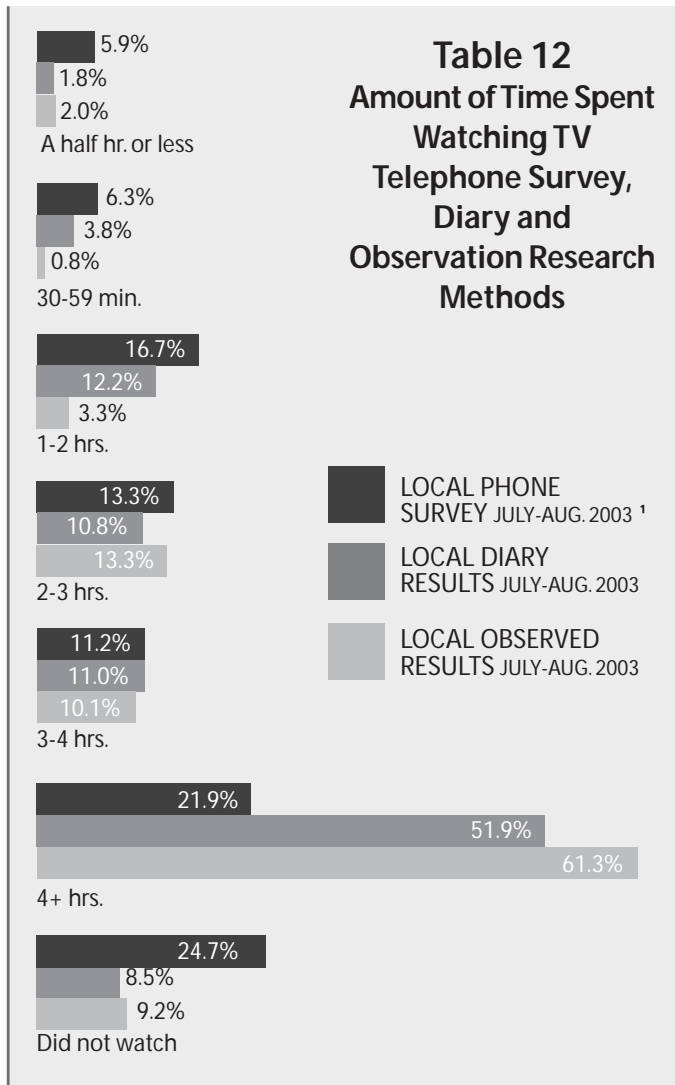
Simultaneous Multiple Media Use

There appears to be a great deal of simultaneous multiple media use. Diary keepers noted simultaneous multiple-media usage 12.4 percent of their total media use time, but observation puts the figure at nearly a quarter of the media day (23.7 percent). Although the telephone survey involves a different and non-parallel question, it is clear that there is more simultaneous multiple media use than previously documented, and it is clear that actual simultaneous multiple media use frequently isn't what media users perceive it to be.

Tables 14 - 17 all deal with simultaneous multiple-media usage. The Middletown phone survey included a series of questions asking to what extent people used certain combinations of media at the same time. Those were the same questions that Papper asked in a national study (unpublished) in January and February of 2003. That study involved a random national sample of 1,003 adults, 18-years-old and older.

In the case of reading and other media activity (Table 14), there appears to be much more reading coupled with other media use than previously realized. Based on observation, overall, in "all reading" (books, magazines

Table 12
Amount of Time Spent Watching TV
Telephone Survey,
Diary and
Observation Research
Methods



¹ Telephone survey questions asked whether the respondent happened to use the particular medium "yesterday."

Table 13
Amount of Time Spent On the Internet by Telephone Survey, Diary and Observation Research Methods (based on percent of people who go online)

	PEW SURVEY Sept. 2000	LOCAL PHONE SURVEY July-Aug. 2003	LOCAL DIARY RESULTS July-Aug. 2003	LOCAL OBSERVED RESULTS July-Aug. 2003
A half hr. or less	25%	25.3%	18.8%	19.8%
30-59 min.	18	20.9	21.9	14.9
1-2 hrs.	29	53.0 ¹	24.6	20.3
2-3 hrs.	11	NA	13.4	15.4
3-4 hrs.	6	NA	6.5	15.3
4+ hrs.	10	NA	14.9	14.4
Don't know/refused		0.7		

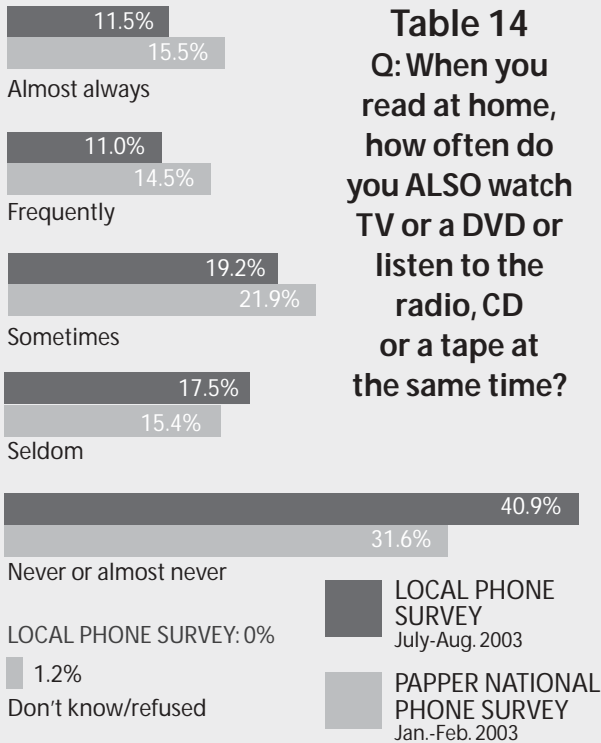
¹ Data collected as "1 hour or more"

and newspaper), almost three-quarters (73.4 percent) of observed readers also engaged in another media activity at least some of the time; 57.5 percent of the time spent reading also involved watching TV or a DVD or listening to the radio, CD or a tape. While 40.9 percent of the local telephone survey respondents and 31.6 percent

of the national sample said they never or almost never read and also watch TV or listen to something, only 26.6 percent of those observed didn't multitask while reading. Based solely on number of people (and not how much they do it), the most common media multitasked with reading were TV (well ahead of all others), then radio and music.

Among diary keepers, 42.6 percent of those who read did so with another medium in use at the same time; and at 36.3 percent of the time, total multitasking with reading was well below that found in the observation study. While 40.9 percent of the local phone sample and 31.6 percent of the national sample said they never or almost never read and also watch TV or listen to something, 57.4

Table 14
Q: When you read at home, how often do you ALSO watch TV or a DVD or listen to the radio, CD or a tape at the same time?

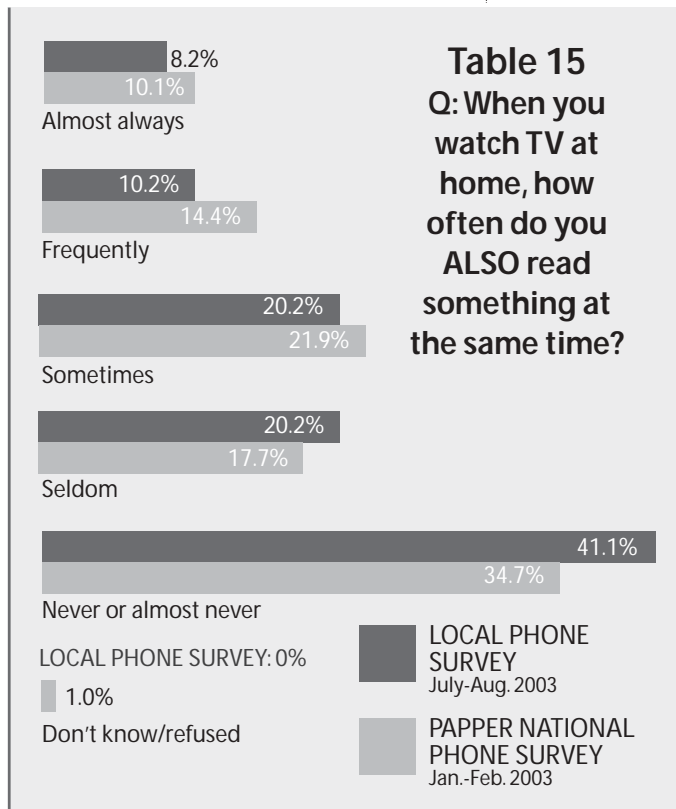


percent of those keeping diaries did not report multitasking while reading. Given those numbers, it would appear that diaries were not picking up reading multitasking. Based solely on number of people (and not how much they do it), diary keepers reported the most common media multitasked with reading as TV (well ahead of all others), then radio, telephone, music and computer use.

In the case of watching TV and reading (Table 15), there is actually less multitasking than people appear to think. Although 44.6 percent of TV viewers read something at least some of the time while watching TV, the two activities multitask only 7.8 percent of the time. While 41.1 percent of the local telephone survey sample and 34.7 percent of the national sample said they never or almost never watch TV and also read something, 55.4 percent of those observed didn't multitask watching TV and reading. Based solely on number of people (and not how much they do it), the most common media multitasked with TV were telephone (well ahead of all others), then book and mail, then newspaper and Internet, then computer, cell phone, email, and then magazine and other media.

Diary keepers noted even less simultaneous TV and reading media usage, with just 22.6 percent of diary keepers multitasking TV and reading for a mere 4.2 percent of the time. While 41.1 percent of the local phone sample and 34.7 percent of the national sample said they never or almost never watch TV and also read something, more than three-quarters (77.4 percent) of those keeping diaries did not record multitasking of TV and reading. Based solely on number of people (and not how much they do it), diary keepers listed the most common media multitasked with TV as telephone and then newspaper (well ahead of all others), then email, radio, computer and magazine, then cell phone and book.

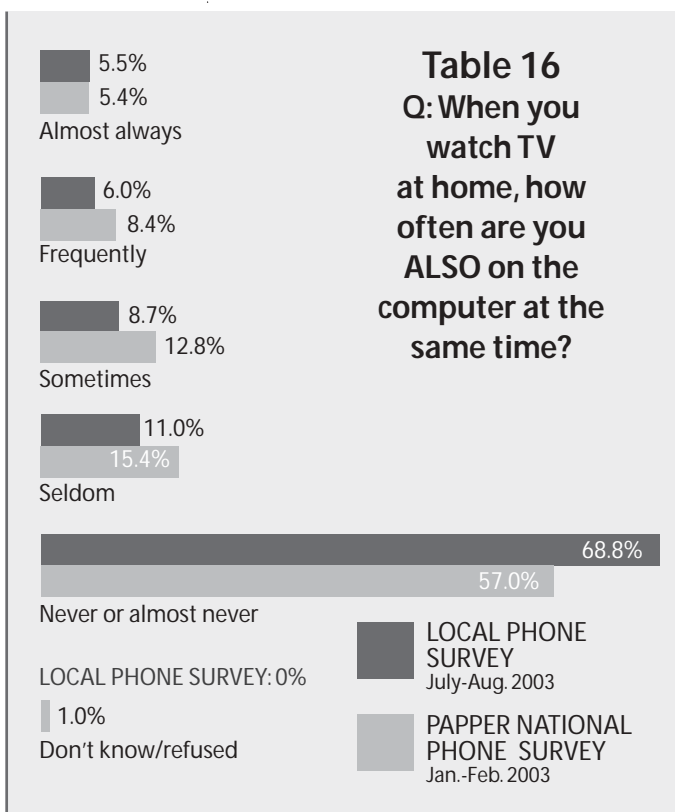
For the observation study, observers were instructed to judge, whenever multiple media were in use, which medium had the greatest attention of the



participant. This was designated the “primary” medium. Other media in use at the same time were designated as “secondary” media. This distinction is not available in the diary data, but is worth considering here as there may be differences in how “active” media (requiring considerable cognitive engagement: book reading, writing email, etc.) and “passive” media (music, television, or other media which can be used as background) are multitasked. In the observation studies, when we observed TV as the primary medium, reading virtually disappears (4.3 percent of viewers reading for 0.3 percent of the time). In other words, participants focusing on TV tended not to read at

the same time—but participants focused on reading could have the TV on.

Watching TV along with using the computer (Table 16 and Table 17) is perhaps the most interesting combination. Based on observation, 39.1 percent of TV viewers multitask with the computer—although they do so only 11.6 percent of the time. Here, the survey results were consistent with observed use. In the telephone surveys, 68.8 percent of the local sample and 57.0 percent of the national sample said they never or almost never watch TV and also spend time on the computer, with observation putting the number at 60.9 percent who didn’t multitask TV and computer. Based solely on number of people (and not how much they do it), the most common media multitasked with TV were telephone (well ahead of all



others), then book and mail, then newspaper and Internet, then computer, cell phone, email, and then magazine and other media.

Diary reports, on the other hand, paint a different picture. In the diaries, only 8.7 percent of TV viewers reported also being on the computer for just 2.1 percent of the time. While 68.8 percent of the local phone sample and 57.0 percent of the national sample said they never or almost never watch TV and also spend time on the computer, 91.3 percent of those keeping diaries did not record multitasking of TV and computer use. Based solely on number of people (and not how much they do it), diary keepers listed the

most common media multitasked with TV as telephone and then newspaper (well ahead of all others), then email, radio, computer and magazine, then cell phone and book.

It becomes easier to reconcile the discrepancy when we look at TV as the primary medium in the observation studies. In that case, we find that only 16.5 percent of TV viewers also use the computer at the same time, and they do so only 4.2 percent of the time.

Tables 16 and 17 strongly suggest that the multitasking of TV and computer and computer and other media are one-way streets. TV is not only the 800 pound primary gorilla, it's also the 800 pound secondary gorilla, and so it's commonly on when other media are in use. But, based on observation, when people are watching television (primary use), that's what they're doing. Overwhelmingly, they're not reading, and they're not on the computer.

While few people who watch TV are also on the computer, the few who do average just over an hour a day in the observation studies and over an hour and twenty minutes in the diary studies. Based on Table 17, any online survey of TV/computer behavior could result in skewed numbers because people who are on the computer are commonly doing other media activity (including TV), but the behavior doesn't happen at the same rate the other way around.

In the case of using the computer in combination with video or audio media (Table 17), based on observation, over two-thirds (67.1 percent) of computer users also watch video or listen to audio at least some of the time; 43.4 percent of the time that the computer is in use, respondents also used a video or audio medium. Interestingly, this result is different than the telephone survey results. While 61.1 percent of the local telephone survey sample and 50.4 percent of the national sample said they never or almost never spend time on the computer and also watch TV or listen to something, 32.9 percent of those observed didn't multitask the computer with video or audio. Based solely on number of people (and not how much they do it), the most common media multitasked with computer were telephone, TV, then other media, radio and music.

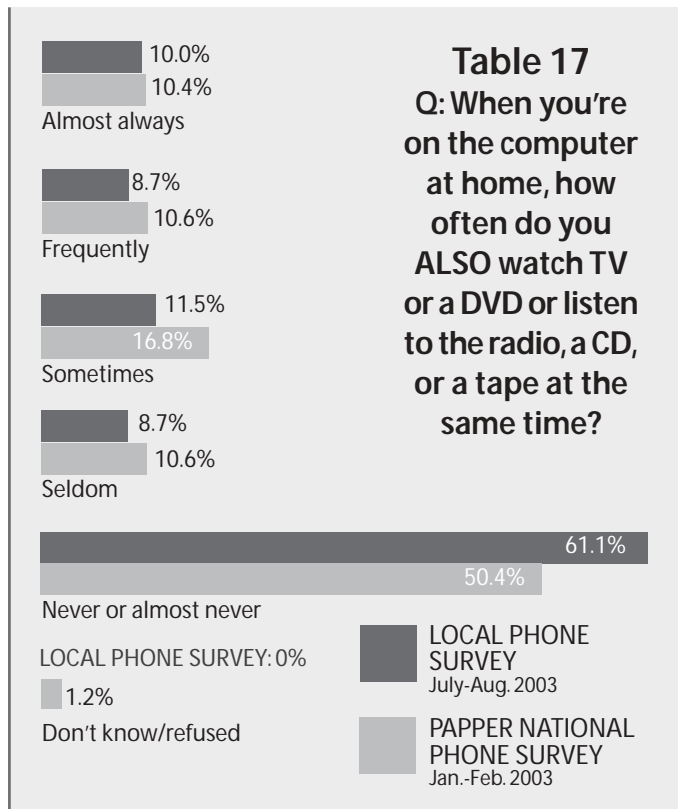
Computer and video/audio multitasking is another area of large difference between diary and observation results. For diary keepers, 41.5 percent of computer users also used a video or audio medium at the same time, and they report doing it less than a third (31.5 percent) of their computer time. This is more consistent with perception. While 61.1 percent of the local telephone survey sample and 50.4 percent of the national sample said they never or almost never spend time on the computer and also watch TV or listen to something, 58.5 percent of those keeping diaries say they didn't multitask while on the computer. Based solely on number of people (and not how much they do it), the most common media multitasked with computer were TV (well ahead of all others), then telephone, radio and music.

TV is not only the 800 pound primary gorilla, it is also the 800 pound secondary gorilla, and so it is commonly on when other media are in use. But, based on observation, when people are watching television (primary use), that is what they are doing.

Media Use Outside of the Home

Simultaneous use of multiple media is only one of the complications of measuring media use in a society where media choices have expanded and media use pervades a huge portion of the day. Another complication is the ubiquity of media; while many studies focus on home use, our results display considerable media use at work, in the car, and in other locations.

In the case of watching TV while at work (Table 18), overall, 11.9 percent of



the observed participants watched at least some TV while at work—that's viewing by 17.9 percent of those who work outside the home. Of all TV viewing, 3.1 percent took place at work. The average total viewing time for those who watched TV at work was one hour and 21 minutes.

TV at work for diary keepers comes in around half what it does in the observation study. Overall, 5.2 percent of diary respondents reported watching TV at work. Just 1.1 percent of all TV viewing took place at work, although the average work viewer watched for 2.2 hours per day.

There is extensive listening to the radio and music at work (Table 19). One-quarter (24.3 percent) of all radio, CD, cassette and MP3 use took place at work—22.7 percent of all radio use and 27.9 percent of all music

use. But that tended to be extensive use by a smaller group. Just 16.7 percent of all radio listeners listened at work. On the other hand, 31.9 percent of all music listeners listened at work (note that listening to music on the radio falls under radio use and is not included in the music category). All told, 25.7 percent of the total sample either listened to the radio or music or both while at work.

In the diary study, 13.8 percent of those who listened to the radio did so at work—producing 27.6 percent of the total radio listening time. A much more modest 10.2 percent of music listeners listened to music at work—accounting for 15.9 percent of all music listening. Overall, 12 percent of the diary keepers either listened to the radio or music or both while at work.

Almost three-quarters (74.3 percent) of the observation study participants

Table 18**Q: When You're at Work, How Often Do You ALSO Watch TV?**

	LOCAL PHONE SURVEY July-Aug. 2003 Total all surveyed	LOCAL PHONE SURVEY July-Aug. 2003 Of those who work outside home	PAPPER NATIONAL PHONE SURVEY Jan.-Feb. 2003 Total all surveyed	PAPPER NATIONAL PHONE SURVEY Jan.-Feb. 2003 Of those who work outside home
Almost always	0.7%	1.3%	1.9%	3.1%
Frequently	1.2	2.2	1.2	2.0
Sometimes	3.2	5.8	5.3	8.8
Seldom	4.7	8.5	5.9	9.9
Never or almost never	45.6	82.1	45.5	76.0
Don't know/refused			0.2	0.2
Don't work outside home	44.4	NA	40.0	NA

listened to the radio in a car (Table 20). That was 89.3 percent of those who listened to radio anywhere. Overall, 32.2 percent of all radio listening took place in the car. Music also scored high, with 53.2 percent of the people who listened to music doing so at some point in a car. Overall, 23.4 percent of music listening took place in the car, including 69.8 percent of all cassette use. A total of 82.2 percent of the participants either listened to the radio or music or both while in a car. Non-listeners in the phone survey are consistent with the observed group. While 8.2 percent of the local telephone survey sample and 8.4 percent of the national phone sample say they never or almost never listen to radio or music in the car, 10.7 percent of those observed didn't listen to radio or music while in a car.

Interestingly, fewer people in the diaries reported that they listened to the radio in their car, although the total listening was about the same. Overall,

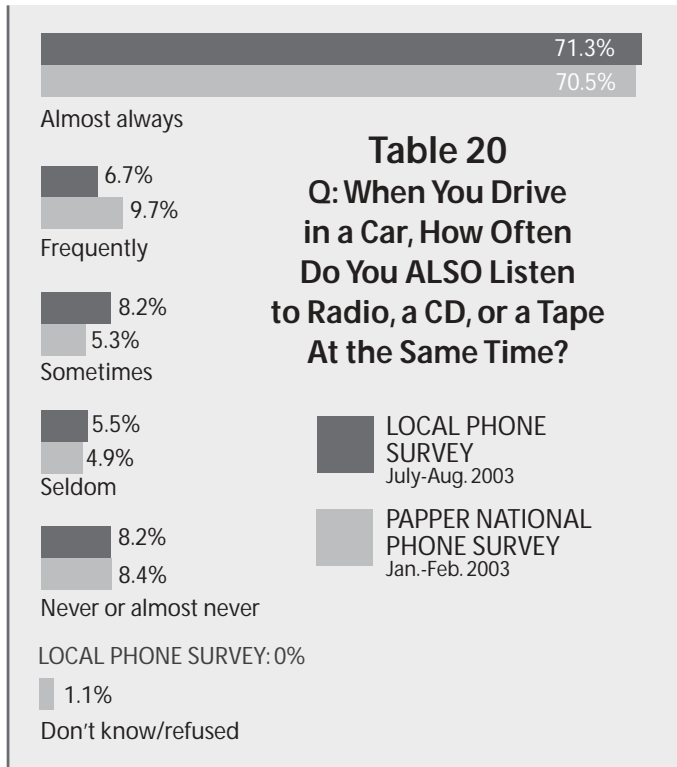
Table 19**Q: When at Work, How Often Do You ALSO Listen to the Radio or a CD or a Tape?**

	LOCAL PHONE SURVEY July-Aug. 2003 Total all surveyed	LOCAL PHONE SURVEY July-Aug. 2003 Of those who work outside home	PAPPER NATIONAL PHONE SURVEY Jan.-Feb. 2003 Total all surveyed	PAPPER NATIONAL PHONE SURVEY Jan.-Feb. 2003 Of those who work outside home
Almost always	19.5%	35.0%	14.9%	24.8%
Frequently	4.5	8.1	4.8	8.0
Sometimes	7.0	12.6	10.2	17.1
Seldom	5.0	9.0	6.6	11.1
Never or almost never	19.7	35.4	23.3	39.0
Don't know			0.2	0.1
Don't work outside home	44.4	NA	40.0	NA

56.8 percent of all diary keepers and 78.2 percent of the diary keepers who listened to the radio reported listening in the car, and car radio listening came to one-third (33.3 percent) of all radio use. More than half (53.7 percent) of those who listened to music did so in a car, adding up to 30.1 percent of all music listening. Overall, two-thirds of the respondents (66.3 percent) used

media in the car, accounting for 9.4 percent of all media use. Even though the amount of use paralleled the observation study, the significantly lower incidence suggests the potential practical problem of noting radio listening in a diary while driving. All told, 64.3 percent of the diary study participants either listened to the radio or music or both while in a car. While 8.2 percent of the local telephone survey sample and 8.4 percent of the national phone sample said they never or almost never listened to radio or music in the car, 21.8 percent of those keeping diaries reported they didn't listen to radio or music while in a car.

Table 21 deals with media use "at a friend's house or out at night." This is not an exact parallel with the "other" location (not home, car or work) in the diary



and observation studies. Overall, 8.6 percent of all media use occurred in the "other" location – anything outside of home, car and work. That included 19.7 percent of all music listening, 17.6 percent of all "other media" use, 14.9 percent of all radio listening, 10.9 percent of all reading, 5.7 percent of all Internet use, 5.2 percent of all computer use, 3.3 percent of all DVD and VCR use, 3 percent of all TV and 3 percent of all phone use. While 48.6 percent of the local phone sample and 32.7 percent of the national phone sample say they never or almost never use media at a friend's house or out at night, only 9.9 percent of those observed didn't use media in a location other than home, work or car.

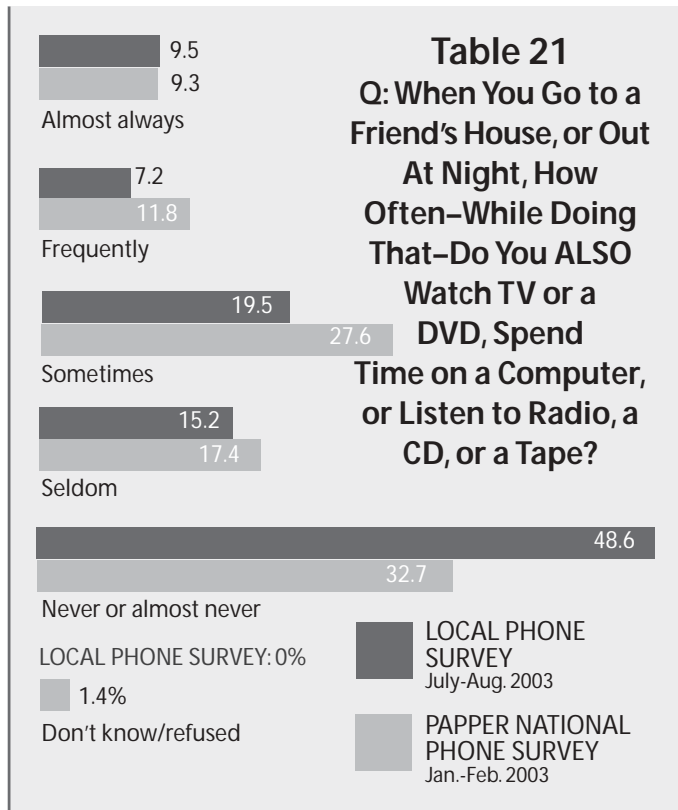
Diaries, again, picked up about half the "other" usage that observation recorded. Overall, 20.3 percent of diary keepers recorded 4 percent of all media use in locations other than home, car or work. Top media: 27.1 percent of "all other media" use (theatrical film viewing, fax, etc.), 11.9 percent of all music listening, 8 percent of all video viewing, 4.3 percent of all radio listening,

3.2 percent of all reading, and 2.7 percent of all TV watching. Computer and Internet use was virtually non-existent in “other” locations in the diary study. While 48.6 percent of the local telephone survey sample and 32.7 percent of the national phone sample say they never or almost never use media out at night, 79.7 percent of those keeping diaries reported no use of media outside of home, work and car.

Table 22 suggests the possibility that measuring out-of-home media use may be particularly difficult. Telephone survey results (Table 21) bore little resemblance to either diary or observation. Although logic says that all the numbers in Out-of-Home Media Use (Table 22) should be at least generally consistent across the studies, that’s not the case. The percentage of media use at home for diary respondents is noticeably higher than for observation study participants, while all non-home locations except one (car) are higher for the latter. While we do not argue that this proves that diaries may be inadequate to capture full media use outside of home, the fact that nine of 10 measurements go in the direction of that hypothesis suggests that this may be a problem.

Since out-of-home TV use is not measured by Nielsen Media Research, we took a special look at that area. Based on diary keepers, 13.4 percent of people watch TV outside the home, although that television viewing is just 4.9 percent of all TV viewing. Observation found a bigger discrepancy. There, 26.1 percent of all those observed watched at least some TV outside the home. Among the observed group, viewing came to 6.0 percent of the total. When the one observed student who lived in a dorm (also unmeasured by Nielsen) is added, TV use that would be unmeasured by Nielsen came to 7.5 percent of TV total viewing—or 24 minutes per day.

Radio use was surprisingly evenly-distributed. Based on observation, listening in the car (32.2 percent) just edged out listening at home (30.2 percent). But listening at work (22.7 percent) and even listening in other locations (14.9 percent) were major contributors to total use. Diaries painted a slightly different picture. With diaries, home



listening (34.7 percent) edged out listening in the car (33.3 percent) and at work (27.6 percent). Diary keepers noted only 4.3 percent of radio listening in other locations. Perhaps radio's ubiquity may not register as strongly outside a more controlled media environment.

Table 22
Daily Incidence of Use and Amount Of Use (in percent) of Out-of-Home Media by Research Method – Diary and Observation

	N	PERCENT OF N	PERCENT OF TOTAL USE
DIARY			
Total	359	NA	NA
Home use	352	98.1%	72.9%
All non-home use	266	74.1	26.9
Car use	238	66.3	9.4
Work use	101	28.1	13.4
Other use	73	20.3	4.0
OBSERVATION			
Total	101	NA	NA
Home use	101	100.0	66.0
All non-home use	91	90.1	34.0
Car use	83	82.2	8.0
Work use	47	46.5	17.3
Other use	61	60.4	8.6

Car cell phone use was high both as reported in diaries and observed. Diaries were slightly higher, with 53.5 percent of diary keepers reporting car cell phone use for a total of 24.7 percent of all cell phone minutes. In observation, 44.2 percent of cell phone users used their phone in the car for a total of 23.7 percent of all cell phone use. We speculate that the lower amount of in-car cell phone use recorded in the observation study may be evidence of drivers being less willing to place or accept cell phone calls in the presence of an observer.

Media Use, Age and Gender

Recent claims about young men abandoning TV viewing in favor of game boxes, video and Internet use have heightened industry concerns about media use differences based on

the key demographic variables of age and gender.

Only two media show significant differences by gender in both diary and observation studies. Women spend more time on the telephone than men. The ratio of total time spent, by gender, was almost 2:1 in observation and more than 2:1 in diaries. Cell phone use by women was nearly three times that of men in the diary study. Conversely, men won the game box war. We observed no women spending time with a game box. Men had a 2.5:1 edge in time spent using game boxes in the diary study.

In the observation study, women, on average, spent more than three times as long with magazines as men and more than twice as long as men with postal mail.

In the diary study, men spent more than twice as long on the Internet as women and just over 50 percent more time with newspapers than did women. For newspapers, the observation study produced a conflicting result, with women actually spending slightly more time with the newspaper than did men.

There were no significant differences by gender in minutes spent with television, radio, computer use, video, music, or books.

We divided the sample into two age groups: 18 – 34 years old and 35 years old and older. Four media show significant difference by age in both diary and observation studies.

On the younger side: In both studies, the younger group listened to three times as much music as the older group. The younger group also spent almost three times as many minutes using cell phones.

On the older side: Time spent with newspapers skewed older in both studies: 2.5:1 in the observed group and more than 3:1 in the diaries. In both diary and observation studies, the older group watched about 38 percent more television than the younger group. Even so, television dominated media consumption for both groups. For the older group, TV viewing was three times as long as the second biggest media activity. For the younger group, the margin was still more than twice as much time. While young men watched TV a little less than young women, the difference was not statistically significant with any of the studies.

In the observation study, the older group spent more time with postal mail (5:1 over younger), the telephone (50 percent more use by the older group), and radio, (where the older group listened to about 20 minutes more radio per day). The younger group had a 2:1 edge in video use and produced all of the game box activity.

Table 23
Gender Differences in Media Use (minutes)¹

MEDIUM	DIARY STUDY		<i>t</i>
	MALE (<i>n</i> =108) MEAN MINUTES	FEMALE (<i>n</i> =250) MEAN MINUTES	
Internet	38.4	17.0	<i>t</i> (142) = 2.37, <i>p</i> = .021 ²
Newspaper	35.3	21.3	<i>t</i> (163) = 3.12, <i>p</i> = .002 ²
Telephone	12.3	27.2	<i>t</i> (341) = 3.12, <i>p</i> = .002 ²
Game box	8.8	3.3	<i>t</i> (145) = 1.95, <i>p</i> = .053 ²
Cell Phone	3.0	8.3	<i>t</i> (345) = 2.70, <i>p</i> = .007 ²
MEDIUM	OBSERVATION STUDY		<i>t</i>
	MALE (<i>n</i> =40) MEAN MINUTES	FEMALE (<i>n</i> =61) MEAN MINUTES	
Telephone	33.8	54.0	<i>t</i> (99) = 2.25, <i>p</i> = .027
Game box	30.98	0	<i>t</i> (39) = 2.30, <i>p</i> = .027 ²
Magazine	5.6	19.3	<i>t</i> (79) = 2.76, <i>p</i> = .007 ²
Postal Mail	4.2	9.1	<i>t</i> (98) = 2.37, <i>p</i> = .020 ²

¹ Analysis is weighted by age.

² Equal variances not assumed.

In the diary study, the younger group spent four times as many minutes in instant messaging use and nearly 50 percent more time on the Internet. That Internet edge created a significant difference for younger people in total computer use, but that wouldn't have been the case without the Internet difference. Total reading skewed older in the diary study, but if the newspaper use hadn't skewed so much older (more than 3:1 in time spent) then the age difference in total reading would not have been significant, either.

Of the most used media, only magazines and books showed no significant differences by age in the diary or observation study.

The telephone survey revealed only one significant age-based difference: members of the older group were less likely to report being a computer user ($X^2(2)=21.3, p < .001$).

Table 24
Age Differences in Media Use (minutes)¹

MEDIUM	DIARY STUDY		t
	18-34 (n=91) MEAN MINUTES	35 & OLDER (n=268) MEAN MINUTES	
Television	225.3	312.3	T(206) = 3.69, p < .001 ²
Computer ³	104.7	71.7	T(357) = 4.00, p = .049
Online ⁴	74.4	47.0	T(127) = 1.91, p = .058 ²
Reading ⁵	32.7	64.8	T(250) = 4.98, p < .001 ²
Music ⁶	53.25	17.5	T(122) = 3.94, p < .001 ²
Newspaper	10.8	34.8	T(292) = 7.30, p < .001 ²
Inst. Msg.	20.6	4.75	T(124) = 1.94, p = .055 ²
Cell Phone	11.0	3.8	T(139) = 2.73, p = .007 ²
MEDIUM	OBSERVATION STUDY		t
	18-34 (n=39) MEAN MINUTES	35 & OLDER (n=62) MEAN MINUTES	
Television	255.7	354.2	T(99) = 4.23, p < .001
Radio	118.1	138.4	T(99) = 0.69, p < .001
Music	108.8	35.1	T(99) = 3.64, p < .001 ²
Video ⁷	76.0	31.8	T(99) = 2.07, p = .041 ²
Telephone	33.3	52.7	T(65) = 2.22, p = .030 ²
Game box	31.6	0	T(61) = 3.00, p = .004 ²
Newspaper	8.1	21.3	T(54) = 2.35, p = .023 ²
Cell phone	12.5	4.6	T(89) = 2.81, p = .006 ²
Postal mail	1.9	9.6	T(41) = 3.46, p = .001 ²

¹ Analysis is not weighted.

² Equal variances not assumed.

³ Includes all forms of computer use.

⁴ Includes Web browsing, email and instant messaging.

⁵ Includes books, magazines and newspapers.

⁶ Includes CD and cassette; does not include radio listening.

⁷ Includes VHS and DVD.

Implications & Discussion

Finding #1

Media use appears to be a lot more extensive than people think. In essentially every case, measured media use exceeded perceived media use—sometimes by huge margins. Diaries picked up more usage, but still well below what was observed.

Finding #2

Media use appears to be far more complex than people think. Telephone survey research on amount of media use was extremely unreliable in almost all cases (Table 5), and telephone survey research on media multitasking was just as unreliable. While there is clearly a value to survey research, it appears that people are simply not able to tell how much time they spend with most media or to what extent they use multiple media. While the data from the diary study is much closer to that produced by observation, it pales in depth and texture compared to observation.

Finding #3

People in phone research appear unable to do a consistently good job identifying whether they even use a given medium, and they appear to have little concept of how much they use it. Phone research appears fully capable of determining whether people possess various technology, but even the simple task of determining whether they used a particular medium appears suspect. It's also possible that people have a tendency to answer a use question positively if they believe they “usually” engage in that use.

Finding #4

People either do a far better job identifying their use of printed media than their use of broadcast media and computers ... or they're sociologically conditioned to underestimate their use of broadcast media and computers.

Finding #5

There appears to be a lot more extensive simultaneous multiple media use than people realize. Diary keepers noted simultaneous multiple-media use but observation puts the figure at twice as large a portion of the media day. Although the phone data involves a different and non-parallel question, the discrepancies make clear that there is more simultaneous multiple media usage than people recall or report.

Finding #6

Simultaneous multiple media use appears not to be what we keep reading about.

Our results suggest that the multitasking of TV and computer and computer and other media are one-way streets. Based on observation, when people are watching television as their primary use, that's what they're doing. Overwhelmingly, they're not reading, and they're not on the computer.

Finding #7

There is significant media use at work. This use is traditionally unmeasured in the case of TV and probably under-measured for other media. More than half of all non-Internet computer use takes place at work. More than a third of all Internet use takes place at work. Email use at work varies more by research method.

Finding #8

There is also significant media use that's outside of home and work, and there appear to be special difficulties in tracking that usage.

Finding #9

There are a few significant differences in media use based on gender. Among the few differences: women spend more time on the phone (in diary and observation results) and with magazines and postal mail (observation results only); men spend more time with game boxes (diary and observation results) and on the Internet and reading newspapers (observation results only).

Finding #10

There are extensive differences in media use based on age. The differences vary according to research method, but four media are consistent across diary and observation study results. Older participants watched more TV and spent more time reading newspapers than did younger participants. The younger groups in both studies spent considerably more time listening to music and using cell phones.

Research questions

1. To what extent do people recognize, recall and identify their own media behavior?

Beyond telling people what media they possess and, perhaps, how they feel about the media, phone surveys appear to offer little reliable data about whether someone used a given medium (except newspapers) and how much time they spent with it.

2. Can we identify a more accurate picture of how, when and where people use what media?

People use the media far more than they apparently realize they do, and that media use takes place almost everywhere.

3. Can we identify the extent of simultaneous multiple media use?

People spend almost a quarter of their media day with two or more media, and much of that multiple use appears to go unnoticed by the people who do it. It is clear some people engage in more multitasking than others, and certain media are more prone toward being part of multitasking than others. Understanding primary and secondary usage appears critical to understanding truly what is taking place in a multitasked environment.

4. Can we identify the relative merits of differing techniques in measuring media use?

Phone surveys appear to have almost no merit in determining amount or complexity (multitasking) of media use. Diary research is clearly far better, but it still understates usage and appears to have problems with short-duration, in-and-out, and out-of home usage.

Limitations

It is, of course, traditional to conclude research reports with cautionary notes about the limitations and weaknesses of the research. Two types of limitations are commonly identified: those specific to the choice of method (e.g., “this lab study using college sophomores may lack generalizability”) and those specific to the application of the method to the study at hand (e.g., “the low response rate suggests results should be generalized with caution”).

The first type of limitation is a central theme of this research project: limitations inhere in each method of media exposure inventory or audience measurement. All research methods are subject to constraints and biases; the salience and severity of those limitations depend upon the purpose of the research. Survey research is inexpensive, flexible, and a reasonable measure of perceptions of use; however, it appears to be a flawed tool for

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Middletown
Media
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assessing time spent in media use or for capturing the richness of media multitasking. Diary-based self-reports are inexpensive and familiar but may produce data of widely varying quality, fail to capture elements of media multitasking, and under-represent several types of media. Systematic observation provides rich data but is extremely expensive and may disrupt normal patterns of media use. The three Middletown Media Studies remind us that all research is *compromise*, but this does not mean that all research is *compromised*. The limitations of a study are a function of the strengths and weaknesses of the methods used and of the quality of the execution of those methods. We've discussed at length the relative strengths and weaknesses of our methods; we'll now briefly note further limitations rooted in execution of the studies.

One limitation applies to all three studies: The research was conducted in mid-to-late summer; in the Midwest, this is when outdoor activities compete most successfully for a share of people's day. It is possible that similar research in mid-winter would produce higher measures of use for many media, as winter sports are not a major draw in the Middletown area.

The telephone survey provides the fewest obvious limitations. The bulk of the questions were adapted from previously published national research, and the survey itself was performed by a qualified professional firm. Nevertheless, some problems were encountered. We designed the telephone survey first due to our desire to compare our results with prior national findings. The diary and observation studies were then designed to produce data that could be compared to the telephone survey results. This alignment sometimes proved difficult due to different forms of measurement used in the three methods. Perhaps more importantly, the choice to use existing questions restricted our ability to refine those questions and tended, as a set of "blindlers," to prevent us from exploring other questions. A final problem was created when a technical failure resulted in a large number of "no response" entries for survey questions 51 and 53 (Appendix A; not analyzed in this report).

The diary study asks the media user to serve as research partner; it is subject to the vagaries of motivation, distraction, and differential ability to be expected in a set of 359 data collectors. The consequences of this weakness were evident in the wide range of number of entries and the absence of requested media (such as telephone use) from many diaries. Aside from this inherent weakness, the diary study is limited by the low response rate for one-day diaries. The distinction between a \$20 honorarium and a \$50 honorarium makes a difference, at least among our sample. One-day diaries suffered a low response rate (17 percent) while the supposedly more demanding one-week diaries achieved a surprisingly high response rate (73 percent). On the other hand, fewer people agreed to participate in a one-week diary to begin with.

It is a truism among social scientists that you cannot closely observe social behavior without changing it in some way. Observational field studies face the charge that the presence of an observer, however minimized, alters media use. We note, for example, that not one of our observers reported any viewing of pornography in any medium (of course, this may be attributable to clean Midwestern living). Our observation study is, however, subject to some further limitations. First, the sample is non-random and relatively small (although it did produce approximately 1600 hours of observation). Second, the design of the study required 202 observation sessions; the large number of observers used (n=37) made systematic assessment of inter-rater reliability impractical given time and resource constraints. Our concern over this issue is tempered by the fact that observers were not asked to make complex, subjective judgments; rather, they were responsible for judging that the participant was exposed to a medium.

Directions for future research

Our comparison of three studies of Middletown's media use has focused largely on the overall temporal economy of media use, i.e., "How much of what media?" A number of promising potential analyses which could be performed on the data from these studies remain as yet unexplored. Some of these are demographic questions; for example, the authors have yet to explore possible associations between media use patterns and education or income, or demographic or behavioral differences between "high use" and "low use" media users. Other possibilities are temporal questions; for example, the relationship of time of day to type and duration of media use, the relative duration of single and multitasked media use episodes, and the sequencing of media use episodes over the course of a day.

The three studies provide complex, overlapping and sometimes conflicting views of the media time budgets of Middletown's citizens. The studies provide a touchstone against which we can compare results from future studies which improve upon the execution of the methods used here. That same touchstone may help us understand how media use changes in Middletown and elsewhere as audiences fragment and media choices expand further, broadband access becomes increasingly commonplace, and new technologies enter the media mix.

We note, for example, that not one of our observers reported any viewing of pornography in any medium (of course, this may be attributable to clean Midwestern living).

Notes

1. Telephone survey questions were adopted from various questionnaires by the Pew Research Center For The People & The Press. The Center bears no responsibility for the questions as used here, the interpretations presented or conclusions reached based on analysis of the data.

2. To correct for discrepancies between the sample data and Census data, the sample diary and observation study data were weighted for age.

3. Because the telephone survey data for amount of time spent in media activity was recorded by time increments, those nominal data had to be converted to estimated numerical values in order to compare the results with the other studies. In all cases, the time range was converted to its middle value for the calculation (for example, "under 15 minutes" was assigned a value of eight minutes). The highest range was assigned an additional 30 minutes (for example, "4 or more hours" was assigned a value of 270 minutes). Note that the key to the apparent underestimation of time spent with media, especially radio and television, involves the extremely high "did not watch" and "did not listen" responses. Even if we assign the highest possible value to each time range other than the open-ended highest range (for example, "1-2 hours" as having a value of 119 minutes), average radio listening only increases by 15 minutes and average TV viewing by just 21 minutes.

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Appendix A

Hello, I am _____ calling people in the Muncie area for a special Ball State University research project on the media. We are conducting a telephone opinion survey, I'd like to ask a few questions of the youngest male, 18 years of age or older, who is now at home. [IF NO MALE, ASK: May I please speak with the oldest female, 18 years of age or older, who is now at home?]

D1. ENTER RESPONDENT'S SEX:

40.6% Male
59.4 Female

D2. Do you live in Delaware County?

100.0% Yes
No – IF NO, DISCONTINUE INTERVIEW

Q1. If you heard that there had been a major terrorist attack on a large U.S. city, where would you go FIRST for more information about this, or wouldn't you be interested in getting more information? (ACCEPT MULTIPLE RESPONSES.)

73.6% Television
9.2 Radio
7.0 Internet/Online
0.7 Newspaper/Magazine
4.0 Miscellaneous
2.7 None/Wouldn't want more information
2.7 Don't know/Refused

Q2. Do you happen to read any daily newspaper or newspapers regularly, or not?

58.9% Yes
41.1 No

Q3. Do you happen to watch any TV news programs regularly, or not?

73.3% Yes
26.4 No
0.2 Don't Know

Q4. Do you happen to listen to news on the radio regularly, or not?

42.1% Yes
57.6 No
0.2 Don't Know

Q5. We're interested in how often people watch the major TV network evening news programs by this we mean ABC World News Tonight with Peter Jennings, CBS Evening News with Dan Rather, and NBC Nightly News with Tom Brokaw. Do you happen to watch TV evening news programs regularly, or not?

46.9% Yes
52.9 No
0.2 Don't know/Refused

Q5a. Now we're interested in how often people watch local TV newscasts hosted by news anchors in Indiana. Do you happen to watch local TV news programs regularly, or not?

67.8% Yes
31.9 No
0.2 Don't know/Refused

INTERVIEWER NOTE: FOR THE NEXT SERIES OF QUESTIONS, PLEASE DETERMINE WHAT DAY OF THE WEEK IT IS. IF THE DAY OF THE WEEK IS SUNDAY, PLEASE READ "FRIDAY." IF THE DAY OF THE WEEK IS NOT SUNDAY, READ "YESTERDAY."

Q6. Did you happen to get a chance to read a daily newspaper yesterday, or not?

43.9% Yes
55.4 No
0.7 Not sure/refused

IF "YES," ASK:

Q7. About how much time did you spend reading a daily newspaper yesterday? (DO NOT READ)

10.7%	24.4%	Less than 15 min.
12.5	28.4	15-29 min.
14.5	33.0	30-59 min.
5.7	13.1	1 hour or more
0.2	0.6	Don't know how much
0.2	0.6	Don't know/Refused

Q8. Did you happen to watch THE NEWS OR A NEWS PROGRAM on television yesterday, or not?

56.4% Yes
42.6 No
1.0 Not sure/refused

IF "YES," ASK:

Q9. About how much time did you spend watching the news or any news programs on TV yesterday? (DO NOT READ)

4.2%	7.5%	Less than 15 min.
7.2	12.8	15-29 min.
20.0	35.4	30-59 min.
23.7	42.0	1 hour or more
0.5	0.4	Don't know how much/Refused
0.2	0.4	Did not watch
0.5	0.9	Don't know

Q10. Apart from news, did you happen to watch anything else on television yesterday, or not?

61.8%	Yes
37.7	No
0.5	Not sure/refused

IF "YES," ASK:

Q11. About how much time did you spend watching TV yesterday, not including the news? (DO NOT READ)

0.2%	0.4%	Less than 15 min.
3.0	4.8	15 minutes to 30 minutes
2.7	4.4	Thirty minutes or less than one hour
13.0	21.0	About an hour or more
5.0	8.1	More than one hour but less than two hours
15.2	24.6	Two hours to less than three hours
11.5	18.5	Three hours to less than four hours
10.0	16.1	Four hours or more
0.7	1.2	Don't know how much/Refused
0.5	0.8	Don't know

Q12. Did you happen to spend any time yesterday listening to any news on the radio, or not?

28.9%	Yes
69.6	No
1.5	Not sure/refused

IF YES, ASK:

Q13. About how much time did you spend listening to any news on the radio yesterday? (DO NOT READ)

7.5%	25.9%	Less than 15 min.
6.5	22.4	15-29 min.
6.2	21.6	30-59 min.
8.2	28.4	1 hour or more
0.2	0.9	Don't know how much/Refused
0.2	0.9	Didn't Listen

Q14. Apart from news, did you happen to listen to anything else on the radio yesterday, or not?

53.4%	Yes
46.1	No
0.5	Not sure/refused

IF "YES," ASK:

Q15. About how much time did you spend listening to the radio yesterday, not including the news? (DO NOT READ)

10.5%	19.6%	A half hour or less
8.0	15.0	Thirty minutes or less than one hour
11.0	20.6	About an hour or more
5.0	9.3	More than one hour but less than two hours
7.5	14.0	Two hours to less than three hours
3.0	5.6	Three hours to less than four hours
8.0	15.0	Four hours or more
0.5	0.9	Don't know how much/Refused

Q16. Did you happen to spend any time yesterday reading magazines, or not?

19.0%	Yes
80.5	No
0.5	Not sure/refused

IF YES, ASK:

Q17. About how much time did you spend reading magazines yesterday? (DO NOT READ)

2.7%	14.5%	Less than 15 min.
3.5	18.4	15-29 min.
8.0	42.1	30-59 min.
4.5	23.7	1 hour or more
0.2	1.3	Did not read

Q18. Not including school or work related books, did you happen to spend any time reading a book yesterday, or not?

29.9%	Yes
69.8	No
0.2	Don't know/refused

IF YES:

Q19. Was it a work of fiction or non-fiction?

14.2%	47.5%	Fiction
14.0	46.7	Non-fiction
1.2	4.2	Both
0.5	1.7	Don't know

IF "YES" ASK:

Q20. About how much time did you spend reading books yesterday? (DO NOT READ)

1.2%	4.2%	Less than 15 min.
3.5	11.7	15-29 min.
6.0	20.0	30-59 min.
19.2	64.2	1 hour or more

Q21. Do you use a computer at work, school, home, or anywhere else on at least an occasional basis?

66.8%	Yes
32.9	No
0.2	Don't Know/Refused

Q22. Do you have a computer in your home? (IF NO, GO TO Q25)

66.3%	Yes
33.4	No
0.2	Not sure/refused

Q23. About how much time did you happen to spend using a personal computer at home yesterday? (DO NOT READ)

4.0%	6.0%	Less than 15 min.
4.2	6.4	15-29 min.
8.5	12.8	30-59 min.
21.4	32.3	1 hour or more
27.7	41.7	Did not use
0.5	0.8	Don't know

Q24. How many computers do you have at home?

46.9%	70.7%	One
14.0	21.1	Two
3.0	4.5	Three
1.0	1.5	Four
1.0	1.5	Five or more
0.5	0.8	Don't know/Refused

Q25. Do you ever go online -- to access the Internet or World Wide Web or use email?

61.3%	Yes
38.4	No -- GO TO Q43
0.2	Don't know/refused

IF "YES" (GOES ONLINE) ASK:

Q26. How frequently do you go online to get NEWS? Would you say every day, 3 to 5 days per week, 1 or 2 days per week, once every few weeks, or less often?

16.2%	26.4%	Every day
8.7	14.2	3-5 days per week
11.2	18.3	1-2 days per week
5.2	8.5	Once every few weeks
10.5	17.1	Less often
9.5	15.4	No/Never (VOL.)

Q27. What time of day do you usually go online? (READ RESPONSES)

15.0%	24.4%	During the morning
9.0	14.6	During the day
8.0	13.0	Around dinnertime
17.0	27.6	Late at night
8.7	14.2	Online all day (DO NOT READ)
3.7	6.1	Don't know/Refused

Q28. Did you happen to go online yesterday, or not?

33.4%	54.5%	Yes
27.7	45.1	No
0.2	0.4	Not sure/Refused

IF YES, ASK:

Q29. From where did you go online... home, work, school, or some combination of these? (CHECK ALL THAT APPLY)

29.4%	88.1%	Yes, home
(INTERVIEWER: home business/work at home would go here)		
3.7	11.2	Yes, work
0.2	0.7	Yes, other locations

IF YES, ASK:

Q30. About how much time did you spend online yesterday? (DO NOT READ)

3.5%	10.4%	Less than 15 min.
5.0	14.9	15-29 min.
7.0	20.9	30-59 min.
17.7	53.0	1 hour or more
0.2	0.7	Don't know how much/Refused

IF YES, ASK:

Q31. When did you first start going online, was it within the last 6 months, a year ago, two or three years ago, or more than three years ago?

3.5%	5.7%	Within last 6 months
3.2	5.3	1 year ago
15.7	25.6	2-3 years ago
38.7	63.0	More than 3 years ago
0.2	0.4	Don't know/Refused

Q32. Some people go online for work-related activities, some do it for pleasure, and for others it's some of each. How about you... all work, all pleasure, or a mix?

3.2%	5.3%	All work -- GO TO Q34.
18.0	29.3	All pleasure -- GO TO Q34.
39.9	65.0	Mix -- GO TO Q33.
0.2	0.4	Don't know/Refused -- GO TO Q34.

BASED ON RESPONDENTS

WHO ANSWERED 'MIX':

Q33. How would you describe the mix... mostly work, mostly pleasure, or about half-and-half?

18.8%	Mostly work
35.0	Mostly pleasure
46.3	Half and half

Q34. Do you ever send or receive email or electronic mail?

54.9%	89.4%	Yes
6.5	10.6	No -- GO TO Q43.

IF YES, ASK:

Q35. Is this everyday, 3 to 5 days per week, 1 or 2 days per week, once every few weeks, or less often?)

24.4%	44.5%	Everyday
12.2	22.3	3-5 days per week
10.7	19.5	1-2 days per week
5.0	9.1	Once every few weeks
2.5	4.5	Less often

BASED ON THOSE WHO USE EMAIL:

Q36. How often do you check your email?

13.0%	23.6%	More than once a day
18.0	32.7	Everyday
10.5	19.1	3-5 days per week
8.0	14.5	1-2 days per week
5.5	10.0	Less often

Q37. Did you send or receive any email yesterday? (IF YES: Is that sent or received?)

2.0%	3.6%	Yes, sent
9.2	16.8	Yes, received
19.0	34.5	Yes, both
23.9	43.6	No
0.7	1.4	Don't know/Refused

BASED ON EMAIL USERS**WHO SENT EMAIL YESTERDAY:**

Q38. About how many messages did you send yesterday?

3.5%	16.7%	One
3.2	15.5	Two
4.7	22.6	Three
2.5	11.9	Four
2.5	11.9	Five to Nine
2.7	13.1	Ten to Nineteen
1.5	7.1	Twenty or more
0.2	1.2	Don't know/Refused

BASED ON EMAIL USERS**WHO RECEIVED EMAIL YESTERDAY:**

Q39. About how many email messages did you receive yesterday?

0.7%	2.7%	Zero
0	0	One
2.2	8.0	Two
3.2	11.5	Three
2.0	7.1	Four
5.2	18.6	Five to Nine
5.0	17.7	Ten to Nineteen
3.5	12.4	Twenty to Twenty-nine
6.0	21.2	Thirty or more
0.2	0.9	Don't know/Refused

NOW I'D LIKE TO ASK YOU SOME MORE QUESTIONS ABOUT WHAT YOU DO WHEN YOU GO ONLINE ...

Q40. When you go online would you say you are usually looking for specific information or simply browsing?

34.9%	63.6%	Looking for specific information
7.7	14.1	Browsing
11.7	21.4	Some of both (VOLUNTARY)
0.5	0.9	Don't know/Refused

Q41. Do you happen to know the speed of the modem that allows you to go online? Is it:

25.7%	46.8%	56-K dial-up or less cable modem
11.2	20.5	DSL
4.2	7.7	Other (SPECIFY)
1.0	1.8	Don't know/Refused
12.7	23.2	

BASED ON THOSE WHO HAVE A MODEM:

Q42. How satisfied are you with the speed of your modem... would you say you're very satisfied, somewhat satisfied, not too satisfied, or not at all satisfied?

17.0%	40.2%	Very satisfied
18.0	42.6	Somewhat satisfied
4.0	9.5	Not too satisfied
3.2	7.7	Not at all satisfied

Q43. Do you currently live in an area where you could get Cable TV if you wanted it?

91.0%	Yes
8.2	No
0.7	Don't know/Refused

IF YES:

Q44. Do you currently subscribe to Cable TV?

63.1%	69.3%	Yes
27.7	30.4	No
0.2	0.3	No cable access

Q45. Do you currently subscribe to a satellite television service such as DirecTV or the Dish Network?

22.2%	Yes
77.6	No
0.2	Don't know/Refused

Q46. Do you happen to have (READ; ROTATE), or not? How about...

a. A cell phone

55.9%	Yes
43.9	No
0.2	Don't know/Refused

b. A pager

8.2%	Yes
91.3	No
0.5	Don't know/Refused

c. A CD player

87.8%	Yes
12.0	No
0.2	Don't know/Refused

d. A satellite dish

21.2% Yes
78.6 No
0.2 Don't know/Refused

e. A DVD player

62.3% Yes
37.4 No
0.2 Don't know/Refused

f. A palm pilot or other similar product

9.5% Yes
89.3 No
1.2 Don't know/Refused

g. A smart TV product like TiVo or Replay TV

2.5% Yes
96.5 No
1.0 Don't know/Refused

Q47. Thinking about a typical weekday, do you normally start your morning with some type of news, or not?

64.8% Yes
34.9 No
0.2 Don't know/Refused

IF YES:**Q48. Is your morning news mainly from television, the newspaper, radio or the Internet? (ACCEPT MULTIPLE RESPONSES.)**

42.6%	65.8%	Television
10.5	16.2	Newspaper
10.0	15.4	Radio
1.7	2.7	Internet

Q49. Again, thinking about a typical weekday, do you normally read, watch, or listen to the news during the course of the day, or not?

71.8% Yes
27.7 No
0.5 Don't know/Refused

Q50. Is that news mainly from television, the newspaper, radio or the Internet? (ACCEPT MULTIPLE RESPONSES.)

50.9%	70.8%	Television
6.5	9.0	Newspaper
9.5	13.2	Radio
4.2	5.9	Internet
0.7	1.0	Don't know/Refused

Q51. And, on a typical weekday, do you normally read, watch or listen to the news around the dinner hour, or not?

51.4% Yes
48.3 No
0.3 Don't know/Refused

IF YES :**Q52. Is that news mainly from television, the newspaper, radio or the Internet? (ACCEPT MULTIPLE RESPONSES.)**

35.4%	95.9%	Television
0.2	0.7	Newspaper
1.0	2.7	Radio
0.2	0.7	Internet

Q53. On a typical weekday, do you normally read, watch or listen to the news late in the evening, or not?

65.6% Yes
33.7 No
0.7 Don't know/Refused

IF YES**Q54. Is that news mainly from television, the newspaper, radio or the Internet? (ACCEPT MULTIPLE RESPONSES.)**

43.4%	92.1%	Television
1.2	2.6	Newspaper
1.0	2.1	Radio
1.2	2.6	Internet
0.2	0.5	Don't know/Refused

Q55. Generally speaking, which is more common for you: At first, do you just decide to watch TV and then flip channels to see what is on, or do you tune in to see a specific program that you know is on at a set time? (IF BOTH, PROBE: But which would you say you do most often?)

27.7% Just watch TV, flip around
54.4 Tune in for specific program
15.0 Both
3.0 Don't know/Refused

Q56. Are you more the kind of person who watches or listens to the news at regular times, or are you more the kind of person who checks in on the news from time to time?

49.6% Watch/listen at regular times
48.4 Checks in from time to time
2.0 Don't know/Refused

IF RESPONDENT DOES NOT GET NEWS AT REGULAR TIMES, ASK:**Q57. When you're checking in on the news, what source do you typically use MOST? [READ]**

18.5%	36.6%	Network TV news
20.9	41.6	Local TV news
2.5	5.0	Radio OR
5.5	10.9	The Internet
1.5	3.0	Other [VOL -- DO NOT READ]
0.2	0.5	Don't know/Refused
0.2	0.5	Neither [VOL]
1.0	2.0	Don't know/Refused

Q58. Would you say you get more of your news from online sources, or from traditional sources such as TV news, newspapers, and magazines?

11.0% More online
85.0 More traditional print and broadcast
3.0 Equal (VOL)
1.0 Don't Know/Refused

Q59. When you read at home, how often do you ALSO watch TV or a DVD or listen to the radio CD, or a tape at the same time?

11.5% Almost always
11.0 Frequently
19.2 Sometimes
17.5 Seldom
40.9 Never or almost never

Q60. When you watch TV at home, how often do you ALSO read something at the same time?

8.2% Almost always
10.2 Frequently
20.2 Sometimes
20.2 Seldom
41.1 Never or almost never

Q61. When you watch TV at home, how often are you ALSO on the computer at the same time?

5.5% Almost always
6.0 Frequently
8.7 Sometimes
11.0 Seldom
68.8 Never or almost never

Q62. When you're on the computer at home, how often do you ALSO watch TV or a DVD or listen to the radio, a CD, or a tape at the same time?

10.0% Almost always
8.7 Frequently
11.5 Sometimes
8.7 Seldom
61.1 Never or almost never

Q63. When you go to a friend's house or out at night, how often -- while doing that -- do you ALSO watch TV or a DVD, spend time on a computer, or listen to radio, a CD, or a tape?

9.5% Almost always
7.2 Frequently
19.5 Sometimes
15.2 Seldom
48.6 Never or almost never

Q64. When you drive in a car, how often do you ALSO listen to radio, a CD, or a tape at the same time?

71.3% Almost always
6.7 Frequently
8.2 Sometimes
5.5 Seldom
8.2 Never or almost never

Q65. Do you go to work outside the home?

55.6% Yes
44.4 No

Q66. If yes, when you're at work, how often do you also watch TV?

0.7% 1.3% Almost always
1.2 2.2 Frequently
3.2 5.8 Sometimes
4.7 8.5 Seldom
45.6 82.1 Never or almost never

Q67. If yes, when at work, how often do you also listen to the radio or a CD or a tape?

19.5% 35.0% Almost always
4.5 8.1 Frequently
7.0 12.6 Sometimes
5.0 9.0 Seldom
19.7 35.4 Never or almost never

Q68. If yes, when at work, how often do you also spend time on a computer doing NON work-related activity?

0.5% 0.9% Almost always
2.5 4.5 Frequently
3.2 5.8 Sometimes
6.5 11.7 Seldom
42.9 77.1 Never or almost never

Finally, just a few questions for classification purposes.

D3. Generally speaking, do you usually think of yourself as a Republican, a Democrat, an independent or something else?

25.7% Republican
26.4 Democrat
29.9 Independent
8.0 Something else
5.2 Don't know
4.7 Refused

D4. Generally speaking, do you usually think of yourself as a liberal, conservative, a moderate or something else?

17.5% Liberal
30.9 Conservative
27.4 Moderate
13.0 Something else
8.0 Don't know
3.2 Refused

D5. In what year were you born?

32.9% 18 – 34
18.2 35 – 44
17.0 45 – 54
11.0 55 – 64
20.9 65+

D6. What was the last grade of school you completed?

2.5% Grade school or less
8.5 Some high school
34.4 High school grad
24.2 Some college
20.2 College grad
9.7 Post graduate
0.5 Refused

D7. What is your race? Are you African America, Asian American, Caucasian, Hispanic/Latino, Native American, or some other race?

6.0% African American
1.2 Asian American
87.5 Caucasian
0.7 Hispanic/Latino
0.7 Native American
2.5 Other/Mixed race
1.2 Refused

D8. For classification purposes only, is the total yearly income of all the members of your family now living at home: \$60,000 or more, between \$30,000 and \$60,000 or is it less than \$30,000?

20.7% \$60,000 or more
33.7 Between \$30,000 and \$60,000
29.4 Less than \$30,000
4.2 Don't know
12.0 Refused

Demographic Questions (please circle your answer)

For classification purposes only:

- | | |
|---|---|
| <p>1. Do you work outside the home?
Yes No</p> | <p>6. What is your race?
African American
Asian American
Caucasian
Hispanic/Latino
Native American
Other/Mixed race
Don't know</p> |
| <p>2. Generally speaking, do you consider yourself to be:
Democrat
Republican
Independent
Something else
Don't know</p> | <p>7. What is the total yearly income of all members of your family now living at home?
\$60,000 or more
Between \$30,000 and \$60,000
Less than \$30,000
Don't know</p> |
| <p>3. Generally speaking, do you usually think of yourself as:
Conservative
Liberal
Moderate
Something else
Don't know</p> | <p>8. Are you:
Female
Male</p> |
| <p>4. In what year were you born?
_____</p> | |
| <p>5. What was the last grade of school you completed?
Grade school or less
Some high school
High school grad
Some college
College grad
Post graduate
Don't know</p> | |

Participants were recruited through random selection of published phone numbers in Delaware County.

Participants received a \$20 honorarium for a completed one-day diary.

Frequently asked questions about the Media Diary

1. What kinds of sources should I record?

Any "media" source. This includes things such as:

Broadcast TV	Postal mail	Telephone
Cable TV	World Wide Web	Cell Phone
Satellite TV	E-mail	Newspapers
VCR player	Instant Messaging	Magazines
DVD player	Faxes	PDA (Palm Pilot, etc.)
Radio	Game boxes (X-Box, Nintendo, etc.)	
Music CD		

2. How specific should I be about sources?

Give the general source first: "Cable TV," "radio," etc. Whenever possible, add station numbers, call letters, program title or other identifying information.

3. What about computer use?

If you have a home or office computer, make a diary entry whenever you turn the machine on or off. We would also like to know about your use of the Web, email, instant messaging and computer games. You don't have to note your use of other software applications such as word processors or spreadsheets.

4. How should I describe locations other than home, car or work/school?

A general description, such as "friend's house," "restaurant," "bar," or "store" is acceptable.

5. What if I forget to enter something?

If you forget to enter a time or location for an entry but know what it should be, feel free to add the information later.

If you forget an entire entry, such as playing your car stereo on the way to work, add it to the end of your entries before mailing the diary.

6. When do I get paid for participating?

A check will be mailed to you when we receive your mailed media diary.

How to fill out your media diary

1. Record the date.

2. For one complete day, write down what you watch, listen to or read. Include times, sources and places.

3. Put completed diary in the provided stamped envelope and mail it to us.

Enter the time to the nearest minute.

You can overlap and start an entry before another ends.

Time		Source	Location			
Start	End		Home	Car	Work	Other
07:00	07:30	Local TV - 10 & 11:30 - 12:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
07:30	07:45	Newspaper - Herald-Examiner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
07:45	08:00	Radio - 101.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
08:00	12:00	Computer use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
08:15	08:30	Radio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
08:30	08:45	Radio - 101.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12:00	12:15	Radio - 101.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12:15		Radio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Enter the media source: TV, VCR, DVD, radio, etc. Include the TV channel, radio station letters, or magazine or newspaper title if known.

Place an "X" in the matching location or note a different location.

Diary days were spread evenly across the week, including weekends.

The diary collection period ran through July, August and early September 2003.

Household Media Inventory

Please check any of the following if you own or subscribe to them. In the case of multiple items, please list the number you have in your home. (e.g. 5 Television Sets)

<input type="checkbox"/> Television sets	<input type="checkbox"/> Computers
<input type="checkbox"/> Internet Provider(s)	<input type="checkbox"/> Telephones
<input type="checkbox"/> Radio sets	<input type="checkbox"/> Cell phones
<input type="checkbox"/> Cable Service	<input type="checkbox"/> Pagers
<input type="checkbox"/> Broadband	<input type="checkbox"/> Computer games
<input type="checkbox"/> Digital	<input type="checkbox"/> Game Boxes
<input type="checkbox"/> VCRs	<input type="checkbox"/> PDAs
<input type="checkbox"/> DVDs	<input type="checkbox"/> Satellite car radio
<input type="checkbox"/> CD players	<input type="checkbox"/> Magazines
<input type="checkbox"/> Satellite Cable	<input type="checkbox"/> Newspapers
<input type="checkbox"/> Cassette players	

Appendix C

INVENTORY: __TV__Radio__Cable__VCR__DVD__CD__Cass__Comp__Sat__Phone__Cell__PDA__Pager__Games__DUMod__DSL__CableMod

TIME	Start	Stop	TOTAL TIME	COMMENTS
				Other
				OthMus
				PDA's
				Books
				Mags
				Newsp
				Pager
				Cellph
				Phone
				Mail
				Satcar
				Sat3
				Sat1
				Games
				Instms
				email
				Internet
				Comp
				Cass
				CDs
				Radio
				DVD
				VCR
				Cable
				TV
				HWCO
				DayPart
				am/pm

Two observers per day (in approximate eight hour shifts each) kept a media log on 101 participants. People were observed from when they arose to when they went to bed ... including driving, work, errands and whatever other activities in which they engaged.

Revolution in Middletown: Knowing, Being and Media Uncertainty

Scott R. Olson,
Ph.D.
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The Middletown Media Study reveals a revolution in understanding the most studied of hamlets, with significant epistemological and ontological implications that call into question our way of knowing and our way of being, our methods and our identities. In terms of epistemology, it is now clear that our most common tools for understanding media use are flawed, and have consequently masked the scope, breadth, and simultaneity of media use. In terms of ontology, it is becoming clear that we don't know ourselves well, at least not in terms of our use of media. The media seem to have become so ubiquitous as to be a part of our central nervous system, and because that ubiquity is more common among younger respondents, we should anticipate nothing less than media omnipresence. Media are a revolving door in the lives of Middletown users, and our way of studying them revolves, too.

The study is an attempt to resolve an old problem. It is discouraging that problems with research methodology have been so long recognized but so seldom addressed. Papper, Holmes, and Popovich cite Jack Hill complaining about the inaccuracy of the media use diary twenty years ago, and while Hill's description of a "complex media environment" predates the Internet by half a decade, it sounds contemporary (cited in Papper, Holmes, and Popovich, forthcoming). The diary and phone survey still dominate media research, yielding results with high validity and statistical significance that nevertheless do not correspond to actual behavior.

Television, the authors' "800 pound gorilla," has always been a multitasking medium in ways that a book or newspaper could never be. Eating dinner and cleaning the home are two activities that have typically been done alongside television use, resulting in such multitasking innovations as "TV dinners" and "TV trays." The content of the television medium was often designed with this in mind, so that the major plot points are frequently recapped throughout a program. The new Middletown research reveals that the simultaneous activity has additional media use rather than a non-media activity. Media revolve around to become the background to other media.

The Middletown Media Study reveals behavior and asks questions consistent with the postmodern condition. Two of the primary descriptors of postmodernism are uncertainty (Heisenberg, 1930) and incoherence and pastiche (Jameson, 1986), and both apply to this study. Postmodern

Clearly, we have traditionally agreed upon a way of knowing how we use the media that is not in alignment with observed behavior: we go about knowing ourselves in contradictory, incomplete, and inaccurate ways, as the strong differences in outcomes of the three methodologies reveal.

uncertainty addresses two epistemological concerns. First is a collective concern, how do we know what we know? In other words, how do we agree as a culture to go about understanding our world, and how confident are we that our way of knowing corresponds to the way of others and to something in common outside us? Second is an individual concern, how do I know what I know? To what extent am I able to understand and speak my own ideas and motivations within the limits of language and intersubjective understanding? Postmodern pastiche addresses a more ontological concern: how are our experiences of media texts and of our environment cobbled together from distinct, contradictory, nonlinear, and incoherent bits of information, rather than from a singular, uniform, linear, and coherent experience? Taken to an extreme, to what extent am I myself a single thing, rather than a series of shifting and negotiated meanings?

Papper, Holmes, and Popovich have revealed a great deal about both the uncertainty and pastiche of media use. Clearly, we have traditionally agreed upon a way of knowing how we use the media that is not in alignment with observed behavior: we go about knowing ourselves in contradictory, incomplete, and inaccurate ways, as the strong differences in outcomes of the three methodologies reveal. The study also reveals that we do not understand ourselves very well, about how our own personal methodology for thinking about how much media we use leads us to inaccurate conclusions. We do not know ourselves very well. As for pastiche, it is clear from the study that users of media cobble together textual experiences that come from different media sources at the same time, a contradictory, nonlinear, and incoherent experience.

The study does not address all aspects of media use in Middletown. It asks few questions about content, leaving content outside the scope of the project. McLuhan (1964) claimed that the medium was the message, so that content took a back seat to delivery method, but modern scholarship gives strong credence to content (Ang, 1985, 1988; Fiske, 1986; Jenkins, 1992, 1994). All content is not used in the same ways (Blumler, 1975). So, for example, the last episode of the television sitcom *Friends* is likely to be watched more intently than a previously seen rerun of *I Love Lucy*, at least for some of the viewers. So, to what extent is the primary or secondary role that television plays, or the extent to which it is used in conjunction with another medium, determined by content? Is someone more likely to browse the Internet while watching the Home Shopping Channel than during the Super Bowl?

The media industry invested heavily in a concept called “synergy” during the late 1990s, the idea that one medium can drive the use of another, providing additional revenue streams. While the apparent failure of syner-

gy at AOL Time Warner and Disney/ABC undermine this strategy to some extent, they still abound, and they raise questions about content aspects of media use not found in the study. For example, the study noted instances of simultaneous television and Internet use, with a greater incidence among younger users. Are those users who are using two media simultaneously also using them in a synergetic way, for example watching *Kim Possible* on television while playing a *Kim Possible* game on the Internet? Or are the two simultaneous uses more likely to be unrelated, for example browsing CNN.com while watching a soap opera? Does the inclination to use the media in a synergetic way vary by demographic?

Multiuse of media also has implications for media theory, particularly for “active reader” reception theory (Iser, 1980; Jauss, 1982). Does multiuse make readings more polysemic and incoherent, and hence more post-modern? Or are multiusers able to read media in the same way as single users?

Media users seem to have internalized cultural prejudices about how they are supposed to feel about and report on the media they use. Papper, Holmes, and Popovich find that users significantly overestimate their use of print media, especially books, while underestimating their use of electronic media. This is consistent with the premium American culture puts on written materials over visual ones. Many school districts, for example, promote a “Turn Off the Television” week to their students, but it is difficult to imagine a district sponsoring a corresponding “Close Your Books” week. Media users will no doubt think of themselves as behaving in a more socially sanctioned way than they actually do, and overestimate their “good” behavior over their “bad” behavior. But another kind of distortion is also possible. Perhaps those users who were part of the observations actually consumed more books than usual in order to appear to themselves and the observers as though they engage in socially encouraged behaviors.

The ability to come up with competing explanations from the same data set emerges from the many uncertainties the data themselves illuminate. As the authors point out, the act of observing may distort results, so the Heisenberg Principle is almost certainly in effect in Middletown. The observed event is changed through the process of observing, no matter if the observed is a person watching television, a lemur foraging for food, or a paramecium under a microscope. Despite the many strengths of the simultaneous measuring methodology used by Papper, Holmes, and Popovich, it still exaggerates some behaviors. The fact that no participant exhibited any use of pornography is the most obvious example of a Heisenberg effect given that pornography is found by other measures to be one of the most common uses of the Internet. This obvious distortion raises questions about what else in the study may be more a byproduct of

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being studied than of actual behavior. One tends to assume, as the authors do, that the observed behavior is more accurate than the reported behavior: that people “really” watch more television than they realize because they were observed doing so. But it is also possible that the state of being observed was the cause of more television being watched. Participants may have wished at some level to satisfy what they believed to be the expectations of the observers – e.g., “these researchers are paying to watch me use the media, so I better use some media.”

At the root of all these observations is a fundamental epistemological question: how do we know what we know? Self-recorded impressions obviously distort. Self-reported behaviors distort actual behaviors, too. Observation can also distort behavior, because the observer is not a naturally occurring element in the environment. There is no simple resolution to this conundrum, except to recognize the most fundamental element of postmodern theory: we can never be certain about the things we know, because those things develop within linguistic and cognitive systems which affect what is known.

We can be certain, though, that a number of revolutions are happening in Middletown. Media are becoming a ubiquitous part of the lives of those in Middletown, and such a matter of the daily routine that it seems users consume them far more than they realize. Through this study, we have deep and rich data to show that users are using media more often and in more combinations than had been assumed, and also that the methods that have been deployed to understand media use are problematic.

But there is another revolution in Middletown, one in the sense of a wheel going around. Despite the findings of this study, results that highlight the imperfections of accepted research practices, the very same research methods are likely to rotate back into use. The Middletown Media Study was very expensive, yielding its accuracy at a price that most industry and academic research is unwilling to support. So we can safely assume that media use will change, but our ways of measuring it probably will not. It’s a game, but one in which the rules are clear, understood, and agreed upon, despite the fact that they offer a terribly inaccurate portrait of human behavior. Our beliefs about our behavior will drift further and further from the behavior itself.

The real revolution in Middletown is a new turn of an ancient circle: how do we know what we know? As with any revolution, we are right back where we started. Clearly, the way we have gone about understanding media use behavior is fundamentally flawed and leads us to inaccurate conclusions. At the very least, we need to doubt what we know, always questioning the assumptions we have. But then, how do we know anything at all?

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Middletown Media Studies—Catching a Glimpse of Post-Media Complexity

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(<http://dms.du.edu>).

The Middletown Media Study represents a watershed for media researchers. It suggests so many possible directions for further investigation it's difficult to know where to start. It also tells us that we still have a lot to learn about people's relationships with various media. The authors correctly point out that the "media landscape has grown increasingly complex" (p. 6) and that most research focuses on "use of one medium at a time, ignoring the potential complexity of the interplay of multiple media in a person's day" (p. 6). As is often the case with any piece of solid research, the Middletown Media Study provokes more questions than it answers. In this short response I will turn attention toward just a few such questions.

In what ways should we rethink media "use"?

If, as this study concludes, "media use appears to be a lot more extensive than people think" (p. 17), perhaps we need to revisit what we mean by media "use." Not only does the research suggest higher degree of involvements with media, it also suggests that people have trouble identifying which media they use and how much they use them.

Does this mean that people are often times oblivious to the media in their lives? Probably. As many a professor of media has done, I've sometimes asked my students to maintain a media diary that chronicles their use of/exposure to media over a 24-hour period. Most students come away from that exercise making statements such as, "I had no idea how much I talk on the phone," or, "I didn't realize the television is on almost constantly," or, "I spent almost every waking moment listening to some kind of music." The Middletown Media Study affirms these surprise realizations, validating the fact that media have become so much a part of our lives we've lost some of our ability to recognize and come to terms with their impacts. The lack of individual self awareness regarding media calls into question the concept of "use." If our lives now involve such a symphony of media experiences that, when taken together, they obscure our awareness of our relationships with each individual medium, shouldn't we work harder to develop theories and methodological approaches that are grounded in a more holistic approach?

Perhaps this study invigorates the premises of the "media ecology approach" – the essential concern with "media environments" – the com-

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plex network of structures, technologies and behaviors that characterize modern living. This approach recognizes that the home, the workplace, public places, etc., are becoming microcosms of complex, distributed, and now increasingly digital, media environments. From a research standpoint, our human behavior in these environments might appear to be chaotic as we study the wide ranges of ways people function within these environments. Digital technologies not only blur traditional lines of production and distribution, they also tend to complicate the contexts of reception and/or interaction. This study illuminates fringes of this complexity, and it also suggests some interesting questions regarding what the researchers call “media multitasking” and the “interplay of multiple media.”

What factors shape the ways in which people combine media?

The study suggests that some media are more open to combination than others, and that some combinations are dominated by a particular medium (in this case, television – the “800-pound gorilla”). Remember that McLuhan proposed the idea that some media are higher in definition and require less sensory effort on the part of the user to “fill in the gaps” (hot), and some media require a high level of user involvement to “complete” the experience (cool). In McLuhan’s medium-is-the-message day, most televisions were small, black and white, and offered poor picture quality by today’s standards. Film, photography, radio, and books, according to McLuhan were “hot,” and television, comic books, and the telephone were “cool.”

McLuhan’s hot/cool distinction continues to be debated today, but it still makes sense that the “hotter” the medium, the less available the user’s sensorium is to accommodate combination. While one might be able to talk on the phone and doodle or drive a car, watch television and clean the house, it is much less likely, for instance, that people will read a book while watching a film. The media landscape of McLuhan’s time was, without a doubt, more fragmented, more primitive, and less complex. However, even with enhancements of the television viewing experience, the Middletown Study suggests that television is still cool enough to allow room for other media practices in some contexts.

Technologies have evolved to warm up the cool media and cool down the hot ones. Watching a cable television newscast today is like a three-ring media circus, with advertisements popping into view, text scrolling across the bottom of the screen, and captioned images appearing during a “traditional” news broadcast. We’ve also brought the cinematic experience to television with large high-resolution screens, surround sound, etc. It’s been posited by many today that the web is essentially a cool medium that

brings together cooled-off versions of a wide variety of other media. As the Middletown Study suggests, it might not be all that uncommon today for someone to be surfing the web, watching television, and listening to music at the same time. These patterns are significant. They point to the possibility that combined media, or “meta-media” will play an increasingly important role in shaping media impacts in the future.

It might also be worth exploring whether non-linear, user-controlled media -- through pause, replay, record, skip, access, etc. -- encourage or discourage media combination. Perhaps a user-mediated media experience makes a medium such as television hotter, and thus less receptive to combination, than it might otherwise be. It is also possible that one's level of “media literacy” or “digital literacy” might influence one's ability to simultaneously use multiple media. It is often said that the youth of today are more adept at multitasking with various media, and the Middletown Study points to significant differences in media use based on age. Perhaps such behavior is indicative of a broader ability to engage with a more complex media environment. And perhaps as this generation grows up, so will its ability and appetite for an even more complicated, interwoven montage of media involvements. Walking into a typical college dorm room today, with its televisions, laptop computers, video game consoles, cell phones, music players, PDAs, etc., makes McLuhan's time look like the media Dark Ages.

Should we rethink the concept of “media”?

Digitization further blurs the “lines” among involvements with various media as the contexts of creation, distribution, reception, collaboration, and communication collapse into single multi-purpose moment, specially designed spaces and, more importantly, single multipurpose devices. The Middletown Study shines light toward the post-media point on the horizon where we stop paying as much attention to media as discrete mechanisms of technology, content and distribution, and we start paying more attention to the modes and layers through which media environments are created and the ways in which people both create and behave in those environments. While existing media corporations are obviously heavily invested in maintaining a medium-centric way of organizing their businesses, their markets, and their products, the Middletown Study clearly suggests that these distinctions might mean less to average people as they weave together ever-more complex relationships with a wide variety of media in their daily lives. Shouldn't our research agenda change accordingly?

Whether or not we agree to rethink concepts of “use” and “media,” the Middletown Study encourages us to ask many more questions about the future of media use studies. What theoretical and methodological

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approaches will be most productive in examining media complexity and all it entails? It is possible that complexity theories being developed in other fields, such as computer science and quantum physics, might be put to productive use in answering some of these questions. And what methods will provide the most reliable and detailed data without unduly influencing the behaviors of those being studied? The authors duly recognize the possibility of participant-observer impacts on the Middletown Study, but I still wonder if the research subjects altered their media behavior because they knew that it was their media behavior that was being studied. Would a motive-blind approach be more appropriate for future projects?

Perhaps most importantly, what theoretical and methodological constructs will be most productive in steering researchers away from one-dimensional, one-moment, one-medium, one-mode notions of media “use” toward a more nuanced, complex awareness of the media environments of today and tomorrow? The Middletown Media Study almost begs us to look beyond traditional notions of media use. We need to establish increasingly productive lines of inquiry, and we need to pay more attention to ways people are interacting with media in their everyday, real lives. The combined media use of today will likely evolve into completely new forms of media interaction tomorrow. Obviously none of these questions or challenges can be answered by a single study or a single discipline. Rather, they require renewed dedication to cross-disciplinary and, in some cases, non-traditional approaches to media studies.

What is Media Use, and How Can We Understand It?

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“Middletown Media Studies” stands out for me not only as a report on an extensive study of media use in Middle America but also as an assessment of some of the available methods for examining and understanding media usage. Future research will undoubtedly engage with the authors’ data, subject it to further analysis, associate it with data gleaned from other studies, and even exploit it for financial gain. This is all as it should be. But one thing that intrigues me about the article is how openly Papper, Holmes, and Popovich critique their own and others’ research methods, exemplified by one of the three observations that emerged from the literature review: “Media use estimates are sensitive to the research methods applied.” As they report their findings, Papper, Holmes, and Popovich concurrently express that like all studies, their study is flawed. Yet, warts and all, it enlightens us about certain particularities of media use.

My first question, then. *What constitutes media use?* The architects of the Middletown Media Studies define use as “time spent with particular media forms.” They acknowledge that the three research methods they employed—surveys, diaries, and direct observations—couldn’t adequately account for the complexities of modern media use. Direct observations provided the most accurate data, confirming not only that overall media use was more extensive than indicated by the diaries and phone surveys, but also that many of the participants spent almost a quarter of their media days with two or more media. I would argue that the definition of the term “use” can account for some of the study’s limitations. Just as “media use estimates are sensitive to the research method applied,” so data and subsequent findings come into view in response to questions asked and terms employed.

Media multitasking and the observation that participants’ media usage was not consistent and sustained but “on-and-off, in-and-out” supports Papper, Holmes, and Popovich’s contention that “total media usage is less than the sum of its parts.” The observers who went into people’s homes to examine their media usage noted that participants spent more than double the time with the media than was reported in diaries and surveys. In addition, self-reports seldom demonstrated simultaneous multiple media use, a finding that I would regard as consistent with the under-reporting of media use. In their analysis of the disparity between reported and actual

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time with media, the authors concluded that simultaneous multiple media use seems to go unnoticed by the people who engage in it.

I'm not satisfied with this conclusion, because I noted that the study apparently did not ask how many household members were present at the time that media usage was recorded or reported. Clearly, especially in the self-reported aspects of the study, some of the instances of simultaneous multiple media use could be attributed to several members of the household engaging with different media at the same time. Here, for example, is a typical media day in my household: As a university professor, I work at home several days a week. My labor consists largely of reading (books, papers, manuscripts) and of on-line or off-line computer work (reading, writing, or conducting research). I often play the radio or a CD as background music. If I were a Middletown Media Studies participant, I would report simultaneous use of two media, with the computer as the primary medium and the music as secondary. I would probably report any sustained telephone use, but this third medium would appear as "on-and-off, in-and-out" activity. I probably would not bother—or remember—to log mundane phone calls from telemarketers, doctor's offices, and the like.

When my husband comes home from work, the media landscape changes. The stereo goes off, and the TV is tuned to the news. This altered media landscape does not necessarily hinder my computer use—I often continue to work for a couple of hours after he gets home. Were I a Middletown Media Studies informant, I would ask myself whether or not to report the TV usage in my diary, and would question whether I can be described as directly "using" the TV under these circumstances? Certainly, it is part of the environment: I can hear Wolf Blitzer when I'm working in my study, even though I can't see the TV screen. I could minimize this TV exposure by isolating my study in one of the spare bedrooms, but, frankly, the familiar murmur of the TV is preferable to claustrophobia. If Middletown Media Studies observers came to my house, they might note such nuances of use, but self-reports would provide dubious data because of the possibility that different participants work from a different definition of use.

Now for my second question. *What kinds of research will answer the difficult questions that are raised in complex media environments?* Papper, Holmes, and Popovich stress the complexity of today's media landscape, suggesting correctly that such complexity can be attributed to a combination of media proliferation and audience diversity. By triangulating their study, they addressed their research questions from several perspectives; nevertheless, it seems that they were ultimately dissatisfied with the insights the series of studies yielded. Clearly, although it was the most time-consuming and potentially intrusive leg of the study, direct observa-

tions provided the richest and most revelatory data. Papper, Holmes, and Popovich carefully enumerate the inefficiencies and methodological limitations of observation, but despite the limitations, despite the overwhelming amount of data, the authors state that direct observations yielded the most reliable data concerning not only which media the participants used, but the length of time of each use and occurrences of simultaneous multiple media use.

As a technical communication researcher who specializes in documentation usability, I appreciate the richness of on-site observations. Lab tests are useful for amassing quantitative data for verification purposes, but in many cases, I really need to understand how a user in his or her “natural habitat” interacts with a particular product. On-site observations, also known as contextual inquiries, allow the usability researcher not only to understand what actions the user takes, but also to delve into the rationale for such actions and to determine how environmental conditions affect product usage.

My third and final question, then. *What theories might be useful to researchers bent on understanding the complexities of media use?* Data collection methods such as surveys, observations, and diaries are tools, and as such can be used in conjunction with various theories. I’ll mention two—uses and gratifications theory and medium theory—that have been used to inform the scholarship of media use.

In uses and gratifications theory, the “audience is conceived of as active” and “goal directed” in their choice of media (Severin and Tankard 37). Today’s active media users time-shift their favorite television programs, select and download music, search on line for travel arrangements, assign filters to sort their e-mail, and otherwise “use” media of various kinds; in short, as Severin and Tankard conclude rather obviously, “people use the media for many different purposes” (39). Uses and gratifications theory gets beyond the fact of media use to the goals and pleasures that motivate it.

Medium theory grows out of the work of Marshall McLuhan and Harold Innes, among others. Medium theorist Joshua Meyrowitz draws in large part upon Marshall McLuhan’s characterization of media as extensions of human senses (31). In a discussion about the effects of adding a new medium into an existing media repertoire, Meyrowitz introduces the provocative term “matrix of media” (31). Although he is probably using the term “matrix” as a metaphor, similar to my use of the term “media landscape,” I can imagine researchers developing a table (matrix) within which different media usage moments could be tracked and associated with particular attributes and clusters of attributes. Researchers could then analyze simultaneous multiple media use by observing which attributes are acti-

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vated when participants engage with different combinations of media. McLuhan's work might, in fact, prove helpful in identifying attributes of different media.

Papper, Holmes, and Popovich, in "Middletown Media Studies," tracked instances of simultaneous multiple media use and pointed out the complexity inherent in such use. We should continue to conduct such studies and to seek out patterns for further study. In addition, we must appreciate the content as well as the fact of such media convergences, and we must take into account media users' individual interests, motives, and habits. As Papper, Holmes, and Popovich point out, surveys and media logs can only get at some of researchers' burning questions about media use. Observations provide unique insights, but are time-consuming, intrusive, and overwhelmingly data rich. I propose—and I think Papper, Holmes, and Popovich would agree—that both quantitative and qualitative studies are needed. More detailed observations or contextual inquiries of media use at home, at work, and in public places are warranted, as are examinations of user motivation and studies that ask *why* so many computer users simultaneously use other media and *which* media activities are conducive to simultaneous multiple media use.

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A Telling Portrait of Media Integration

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I want to thank the International Digital Media and Arts Association for asking for my early response to the fascinating report of “Middletown Media Studies.” Like many of the people studied, I find upon paying more attention, that my real time use of media, and particularly multimedia, is far more extensive than I would have imagined. It is much greater than even in the recent past, and is a nearly constant presence in my life, particularly in the workplace. I suspect that the same is true for many, perhaps most Americans. The importance of the data presented in this report has yet to unfold, but at first blush it is a telling portrait of how thoroughly, and to some extent invisibly, media and technology have been integrated into our lives.

As a dean, I am constantly barraged with requests for support, often monetary, for different initiatives. The kind of data provided in the Middletown study is very valuable in helping me assess and prioritize both philosophical and financial support in both continuing and new programs. The triangulation of data derived from the three research methodologies not only provides sound information from which important implications may be drawn, but also is a nicely done example of scholarship. It's important for academic decision-makers to see the information presented here, and it's also important for students to recognize the need for non-anecdotal information on how we use media in contemporary society. The review of literature also is helpful, particularly as it provides the foundation for this new study (which, somewhat paradoxically, is also foundational for much needed continuing research), and indicates the rather astounding degree of change related to media over a relatively short time period.

The new reality painted by the findings underscores the commitment we've made in the School of Visual Arts and Dance at Florida State University to look to current and quickly emerging future issues and concerns related to the production and dissemination of media-based arts. If there is anything that ties together our diverse programs in studio art, graphic design, dance and dance technology, and our emerging partnerships with the FSU Film School, School of Music, and a full range of initiatives in the sciences and humanities, it is media. And based upon the results of the Middletown study, it's clear media are prevalent in a short list of things that most Americans share. The dilemma for educational institutions is how to stay on top of media-related technology, particularly in terms of costs but also in use and dissemination, and how to cross traditional institutional boundaries among disciplines without starting turf

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wars.

I won't address directly here the costs of technology in education and particularly in the arts, which is yet another 800 pound gorilla for all concerned. However, the discussion of multimedia and multitasking within the report provides good ammunition for breaking down those traditional disciplinary boundaries at institutions like ours. Although the report indicates the lack of clarity on just how much multimedia multitasking occurs daily, it's also clear that there's much more than any of us may have recognized. The younger people in this study, like most of our students, apparently know this as an everyday occurrence, one so taken for granted that it is nearly invisible. It behooves us as educators (and artists) to both build upon the lack of disciplinary boundaries inherent in such multimedia multitasking and in the near invisibility of the phenomenon on the one hand, and to make it more visible through our endeavors on the other. Our students don't perceive walls between image, music, film, animation, and the like. As institutions, we need to get to the same point quickly or risk duplication, or worse, absence of relevant programs. It's one thing to pay lip service to these ideas and quite another to put them into practice. The members of International Digital Media and Arts Association are to be commended both for pioneering in such efforts, and for addressing the need for hard data that report contemporary reality and support these efforts.

Finally, if my students, not to mention my own children, spent more purposefully the 15.4 hours per day that they, like the Middletown subjects, may well spend multitasking, imagine how powerful and creative our investigations into the arts and culture would be! As the new era of media continues to unfold, we are all in for unexpected adventures. Despite the somewhat drier adventure that studies like the one reported here convey, the data and their interpretation are crucial for our emerging sense of our fields, their connections, and excellence in teaching and learning them.