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Ecological Psychology and Media Consumption Among Young Adults: A New Framework

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The University of Southern Mississippi

ECOLOGICAL PSYCHOLOGY AND MEDIA CONSUMPTION AMONG YOUNG ADULTS: A NEW FRAMEWORK

by

Alice Diana Cade Ferguson

Abstract of a Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

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ABSTRACT

ECOLOGICAL PSYCHOLOGY AND MEDIA CONSUMPTION

AMONG YOUNG ADULTS: A NEW FRAMEWORK

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The Pew Research Center (2010, March 1) identified three crucial "new metrics of news" (p. 2) that help to explain the appeal of new, interactive media forms among young adult news consumers. These metrics of Portability, Personalizability and Participation (Pew, 2010) highlight the rapid transformations in technology and user interests that have helped create a new manifestation of what McLuhan called an "age of anxiety" (1967/2001, pp. 8-9) in mass media industries and in mass communication education and scholarship. The purpose of this research is to investigate this very shift in how news is delivered and consumed, with particular attention to the preferences of college students for news that offers Pew's (2010, March 1) new metrics. Which *facet* of news best attracts college students' engagement? Do young adults' media choices depend mostly on the news content or channel, or mostly on the technology through which content is delivered? This research explores these questions with new theoretical tools, combining traditional uses and gratifications theory (Blumler & Katz, 1974) with concepts from ecological psychology (Gibson, 1979; Michaels & Carello, 1981). This examination asks whether users' preferences for Pew's (2010) new metrics differ, based on respondents' action goals, informational goals, or selected demographic characteristics.

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CHAPTER I

INTRODUCTION AND PURPOSE

Problem Statement

"[T]he medium is the message. This is merely to say that the personal and social consequences of any medium – that is, of any extension of ourselves – result from the new scale that is introduced into our affairs by each extension of ourselves, or by any new technology" (McLuhan, 1964/1994, p. 7).

So said the visionary mass media scholar/critic Marshall McLuhan in his seminal work, *Understanding Media* (1964/1994). Social and technological change in McLuhan's day was dramatic: "it is forcing us to reconsider and reevaluate practically every thought, every action, and every institution formerly taken for granted" (p. 8).

McLuhan's words seem equally descriptive of the modern media landscape, half a century later. News media are converged, combined, digitized, multimedia'd and thoroughly transformed. An uncertain new world of interactive, mobile, real-time news collaboration (Pew, 2010; Mersey, 2010) has emerged. Consider the findings of the Pew Research Center's "Understanding the Participatory News Consumer" (2010, March 1) report: "The days of loyalty to a particular news organization on a particular piece of technology in a particular form are gone. The overwhelming majority of Americans (92%) use multiple platforms to get news on a typical day . . . In this new multi-platform media environment, people's relationship to news is becoming portable, personalized, and participatory. These new metrics stand out" (Pew, 2010, March 1, p. 2).

These new metrics are especially relevant to young adult users and reflect more general themes of mobility, interactivity and rapid technological advancement that persist

in modern uses and gratifications research involving new, converged and social media (Pew, 2011, May 9; Dribben, 2011, March 14; Gaddy, 2010, May; Lee & Carpini, 2010, April 22-24; Severin & Tankard, 2001). Such scholarship explores an age much like that of McLuhan's "age of anxiety" which he deemed "the result of trying to do today's job with yesterday's tools – with yesterday's concepts" (McLuhan, 1967/2001, p. 8-9).

Purpose Statement

This research offers a new theoretical framework – a *new* tool – for examining *today's* concepts, namely, these new and highly interactive media forms. This framework expands on existing computational approaches, enhancing and supporting them by applying Gibson's ecological theory of affordances (1967/1969) to the study of young people's media usage. The purpose is to use this framework for investigating how news is delivered and consumed, with particular attention to preferences of one small group of college students for news that offers Pew's (2010, March 1) metrics of portability, personalizability and participation. The new framework helps explore which *facets* of news engagement best account for those particular students' informational choices. Do those choices depend mostly on news content; mostly on the delivery channel; or mostly on the device or technology through which the content or channel is delivered? Do these students' action goals, informational goals or demographic characteristics appear to account for some of the students' likelihood of choosing more portable, personalizable and participatory options?

Theoretical Implications

Many studies have applied mass communication's classic, computational theories and models to explore new and complex possibilities offered by new media forms and

technologies (Pew, 2010, March 1; Pew, 2011, May 9; Rollins, 2010, June; Mersey, 2010; Gaddy, 2010, May). Today's media scholars study interactive, mobile, and social media (Tobola, 2009/2010; Winnig, 2010, June 3; Rollins, 2010, June) as well as traditional print and broadcast news outlets. Taken together, these new vistas of news media forms and formats offer users an ever-expanding range of choices for engagement news; and each of the various options can be understood to offer some combination of Pew's (2010, March 1) new metrics.

Researchers and media pundits alike, however, may be challenged to keep pace in studying these rapid changes, simply because the new media world is so very different from the old one – so different, in fact, that sometimes it is hard to imagine how both media worlds can be studied with the same traditional tools. Much as McLuhan suggested, one may easily perceive the need for new tools that enhance and support existing techniques for studying news and media engagement in the modern world.

Uses and gratifications approaches are well represented in studies of both new and traditional media, and rely on traditional, linear sender-and-receiver type models of mass communication processes (Blumler & Katz, 1974; Severin & Tankard, 2001; Rubin, 2002; Mersey, 2010). Such models sometimes seem challenged to account for dynamic, interactive concepts like Portability, Personalization and Participation as Pew (2010, March 1) defined them. Traditional media themselves were anything but portable, personalizable and participatory. Broadcast television and radio, newspapers, books, magazines, and more recently cable television and video recording devices, were sender-oriented, sender-controlled message-delivery systems with few or no opportunities for direct personalization or participation by audience members (Severin & Tankard 2001;

Bryant & Zillman, 2002). Similarly, traditional media offered no portability at all, other than the capability to carry a newspaper in one's briefcase, listen to the radio in one's car, or relocate a television set from one room to another.

This is not the kind of portability Pew (2010, March 1) identified. Rather, Pew's perspective identifies its Portability metric as supporting or affording interactive usage in many locations, literally, while on–the-go. Perhaps the highest level of portability in this sense is embodied in wireless-equipped smart phones with access to powerful, high-speed networks serving large geographic areas. Such a tool affords enhancement of the user's capability to personalize both media channels and delivery technologies; and also affords the user enhanced capability to participate with media content.

Uses and gratifications research (Katz, Blumler & Gurevitch, 1973-74; Blumler, 1978; McGuire, 1974) is praise-worthy in its audience-oriented perspective, however, scholars have called for further (and preferably interdisciplinary) theoretical development, to better ground uses and gratifications studies in broader personal, social and technological contexts (McGuire, 1974; Elliot, 1974; Rosengren, 1974). This research answers such calls and addresses McLuhan's (1967/2001) challenge as well by introducing modern perceptual theories of ecological psychology into the uses and gratifications (Blumler & Katz, 1974; Rubin, 2002) perspective.

In particular, Gibson's (1967/1979) theory of affordances and his perspective on perception as direct, rather than as cognitively mediated, is employed. Michaels and Carello (1981) summarized affordance theory as a "theory of direct perception" focused on the central belief that "The phenomena of psychology reside in *animal-environment systems, not merely in animals*" (1981, p. vii, emphasis added). Thus, Michaels and

Carello (1981) defined "a theory of perceiving" as "a theory of knowing the environment" (p. 1); such theories help explain how it is that "perceivers know their environments well … perception is, quite simply, the detection of information. This approach is labeled *direct* because a perceiver is said to perceive its environment. Knowledge of the world is thought to be unaided by inference, memories or representations." (p. 2).

This definition clearly differs from computational processes so well known to uses and gratifications scholarship, which understands perception as the product of mental processes (Katz, Blumler & Gurevitch, 1973-74, Winter). Michaels and Carello (1981) described the contrast between the computational paradigm and Gibson's direct view: "… (A) second family of theories conceives of perception as *mediated* – or to contrast it with Gibson's theory, *indirect* – and is so called because perception is thought to involve the intervention of memories and representations. The latter view, which has enjoyed nearly unanimous support among contemporary psychologists, implies that perception involves the embellishment or elaboration of inadequate stimulus input. Gibson, on the other hand, holds that stimulation is extraordinarily rich and provides such a precise specification of the environment that a perceiver need only detect that information, not elaborate it" (p. 2).

The present research expands on computational uses and gratifications approaches by integrating Gibson's (1967/1979) theory of affordances in particular into a new framework for studying news engagement. With McLuhan's (1967/2001) call for new tools in mind, this framework is employed to study one group of college students' reported engagement with new and traditional news media forms.

An Ecological Framework for Examining New Kinds of News Engagement

The theoretical approach to studying news consumption presented here is inspired by Michaels and Carello's (1981) ecological schematic of perception as a complex system of "co-implications" (p. 145) among a person's action system (the body and its extensions), perceptual system (the senses and their extensions), and environmental niche or living space as illustrated in Figure 1. Extensions are defined quite simply as environmental components that enhance the user's action-related or perception-related capabilities.

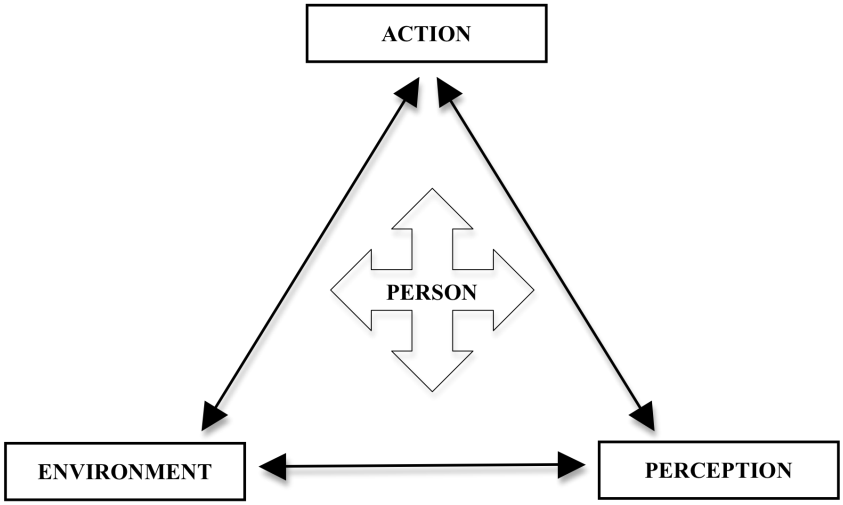

Figure 1. Complex interrelations characterize a person's connection with his or her environment. A person's Action System (the body and its extenders), Perceptual System (the senses and their extensions) and Environmental Niche (the physical environment in which one lives) all share "coimplicative relations" as Michaels and Carello noted (1981, p. 145). Adapted with the authors' permission from *Direct Perception*, p. 145, C. Michaels and C. Carello, 1981, Englewood Cliffs, NJ: Prentice-Hall Inc. Copyright 1981 by Prentice Hall, Inc. (copyright transferred to the authors).

These three points are connected with double-arrow lines in triangular, interactive fashion to reflect that a person's particular perceptions, actions and environments are inextricably linked, functioning together in dynamic, fluid, real-time thinking and

behavior (Michaels & Carello, 1981; Warren, 2006). The agent or person is implied, rather than explicitly diagramed. The agent includes both the perception system and the action system combined; and is so thoroughly connected to his or her environment, that one may as well consider them equally indivisible (Michaels & Carello, 1981). The adaptation shown in Figure 1 simply adds an explicit visual representation of the agent.

Consider a media-related example. Imagine a person (agent) who subscribes to the local newspaper for daily delivery at home (thus making all the newspaper's various features and content available to the user in his or her environmental niche). Sometimes, the person may examine the newspaper for the purpose of supporting an action, such as going to a movie, attending a city council meeting, etc. At other times, the same user might examine the same newspaper for the purpose of extending perception as perception is defined in the ecological sense: that is, extending the capability of detecting more and different kinds of information – reviews of various movies, or reports about city council candidates' views on local issues, for example. The same person might also have access to the newspaper's Web page, assuming appropriate technologies are available in the user's environment. It may also be employed to achieve these goals. The media forms or devices users choose for different action or information-related goals, is of course limited (influenced) in part by what is available in one's environment. One who uses a full-featured smart phone such as an iPhone or Android, for example, is clearly better supported than one who relies on a wired landline telephone. Such choices may also depend on particular characteristics of media channels or vehicles, characteristics of delivery technologies, and of course, characteristics of the agents themselves. Similarly, some news usage choices may be preferable to others for action extension vs. information

extension purposes. That is the underlying purpose of this research: to explore these choices among one group of students, using the ecological framework as a guide.

Traditional uses and gratifications theory and associated models reflect Shannon and Weaver's mathematical or computational model of information flow (Severin & Tankard, 2001) as shown in Figure 2. Over the years, in response to changing phenomena and growing understanding, more flexible adaptations of that early model began to appear. Osgood and Schramm's model (Severin & Tankard, 2001), shown in Figure 3, added elements of interaction and shifting roles between sender and receiver. Triangle models like Westley-MacLain's A-B-X model of two people's (A, B) orientation toward one another and an external object or concept X, incorporated social aspects into the picture. Still, these approaches were designed primarily explain people's thoughts – what happens inside their heads in relation to media engagement – and not their actions or environments (Severin & Tankard, 2001; Bryant & Zillman, 2002). Adding an ecological psychology perspective to the framework employed here is expected to work in similar fashion – namely, to enhance and expand the explanatory power of traditional theories.

In the classic Shannon and Weaver (Severin & Tankard, 2001) model information is defined as that which reduces entropy or uncertainty; it is also information that presumably flows in the form of messages, through their highly linear computational process (Shannon, 1948; Weaver, 1949; Severin & Tankard, 2001). To direct perceptionists (Michaels & Carello, 1981), information is simply "the structured light, sound, or other medium that specifies objects, places, and events to an animal. As such, information is a bi-directional arrow, one arrow pointing to the environment and the other pointing to the animal; it is a bridge connecting the knower and the known" (Michaels &

Carello, 1981, p. 17). This knowing is a continuously unfolding, dynamic (Warren, 2006) activity incorporating computational mental processes along with bodily actions and environmental components, constraints and opportunities (Gibson, 1979; Michaels & Carello, 1981). Direct perceptionists hold that this activity relies on the rich and continuous interaction between body, mind and environment (Gibson, 1979).

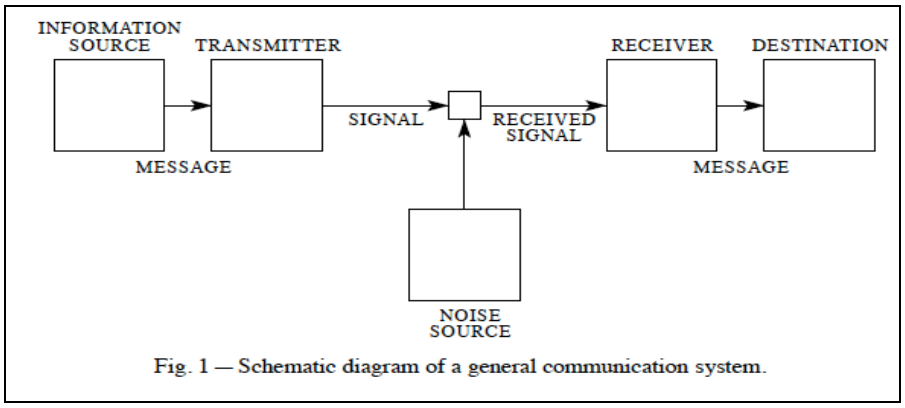

Figure 2. This model illustrates Shannon and Weaver's foundational representation of linear movement of a message (i.e., information) from a source to a transmitter, which translates and emits the message as a signal, which is picked up by a receiver and translated back into a message, to finally arrive at a destination. Noise sources are also illustrated. From THE MATHEMATICAL THEORY OF COMMUNICATION. Copyright 1949, 1998 by the Board of Trustees of the University of Illinois. Used with permission of the University of Illinois Press.

This triad of inseparable parts – action systems, perception systems and environments – makes Michaels and Carello's (1981) schematic intriguing for application to modern media phenomena that are – as Pew (2010, March 1) identified – increasingly Portable, Personalizable and Participatory. Pertinent theoretical concepts from both perceptual approaches are mapped onto this framework of dynamic interactions thus juxtaposing ecological concepts with computational uses and gratifications concepts. This framework explicitly links each Pew (2010, March 1) metric to a particular apex or

domain. Portability (Pew, 2010, March 1) and the media devices and technologies on which it relies, are linked with the Environmental Niche (Michaels & Carello, 1981). Participation (Pew, 2010, March 1), along with people's action-oriented uses and gratifications, are aligned with the Action System (Michaels & Carello, 1981). Personalization (Pew, 2010, March 1), along with people's perceptual (i.e., information-detection and cognitively oriented uses and gratifications) are linked with the Perceptual (i.e., information-detection) System (Michaels & Carello, 1981). An explicit Agent component captures demographic characteristics associated in uses and gratifications literature with factors influencing media choices (Blumler & Katz, 1974). In this way, the three perceptual domains (Michaels & Carello, 1981), Pew's (2010, March 1) three metrics, and agent-based goals and characteristics (McGuire, 1974; Elliot, 1974) are linked in dynamic, fully integrated fashion (Warren, 2006).

Among traditional user-focused theories of mass communication, uses and gratifications approaches (Katz, Blumler & Gurevitch, 1973-74, Winter; Blumler, 1978; McGuire, 1974) generally help answer the question, *what do people do with media*? This is a highly useful avenue for study of new, converged and social media as well as for traditional print and broadcast emphases. Indeed, this study asks a small group of student users for their likelihood of choosing news media that offer Pew's (2010, March 1) new metrics of Portability, Personalizability, or Participatory features when users have action or informational goals.

Adding an ecological perspective to the guiding framework seems a good fit in relation to Pew's metrics, because Portability, Personalizability and Participation (Pew, 2010, March 1) all have immediately recognizable *action* (behavioral) aspects, as well as

perceptual (cognitive, information-gathering) aspects. All three new metrics strongly imply the importance of environmental niche components as well, because all rely on the availability of appropriate devices, delivery channels, services, etc. in the particular user's environment. In strictly agent-based terms, it is readily apparent how all three metrics could serve as extensions of the self, both in the ecological sense (Michaels & Carello, 1981) and in McLuhan's (1964/1994; 1967/2001;) context. Modern media afford increasingly powerful opportunities to transcend traditional news usage boundaries via Personalizability, Participation and Portability (Pew, 2010, March 1). It seems fitting for scholarship to also transcend traditional approaches via interdisciplinary infusion of appropriate concepts from ecological psychology as well. Emphasis on environmental components and action vs. informational goals helps address how "each component constrains or tailors the other" (Michaels & Carello, 1981, p. 145) with a fresh theoretical perspective.

Recall that this theory-building effort is designed to answer McLuhan's (1964/1994; 1967/2001) challenge with modern tools and concepts. The design herein asks one group of college students (Gaddy, 2010, May; Rollins, 2010, June) how likely they are to use various media forms and devices, which were pre-scored for the degree of Participation, Personalization or Portability offered. User and environmental characteristics are treated as independent variables as is common in social science research (Bryant & Zillman, 2002; Wimmer & Dominick, 2006). It is recognized that these are not true independent variables because they are not assigned or controlled by the researcher (Shavelson, 1996; Babbie, 2007).

Significance of the Study

McLuhan said of his day: "Our time is a time for crossing barriers, for erasing old categories – for probing around. When two seemingly disparate elements are imaginatively poised, put in apposition in new and unique ways, startling discoveries often result … Survival is not possible if one approaches his environment, the social drama, with a fixed, unchangeable point of view – the witless repetitive response to the unperceived" (McLuhan, 1967/2001, p. 10).

The primary significance of this study is its potential to provide just the kind of interdisciplinary exploration McLuhan proposed, in which media phenomena and theoretical approaches are "imaginatively poised" (1967/2001, p.10), in this case by blending ecological and cognitive theories into a new research strategy or framework – one that, like Michaels and Carello's (1981) schematic is not in itself empirically provable; rather, it is intended as "an engine of discovery" (Hajnal, 2013) for exploring various phenomena. Journalists, scholars, media pontificators and media users alike have bemoaned the past decade's collapse of the newspaper industry and have struggled with myriad other adaptations to new kinds of media forms and devices that make up new kinds of media environments – environments that are heavily influenced by the Internet and social media in particular (McChesney & Nichols, 2010). Application of this new framework may help scholars understand these trends and perhaps others as well.

This research also has the potential to support interdisciplinary studies in the health communication setting, particularly as related to patients suffering from Alzheimer's disease and other dementias. Bell and Clegg (2012) for example, used Gibson's affordance theory to examine how social isolation of such patients might be

relieved by "shifting the focus from a person's disability to a more nuanced understanding of a person's abilities within the context of appropriate environmental supports in which the person's disability becomes less salient" (p. 159).

They note, "no one has considered how the quality of environmental supports, or affordances (Gibson, 1979/1986), in a broader sense contributes to the problems that people with an intellectual disability commonly experience" (Bell and Clegg, 2012, p. 160). The present study takes a similar approach and is believed to be the first such application of Gibsonian theory to development of new perspectives in combination with traditional uses and gratifications types of approaches.

Ecological views of perception could also be applied to future research on violent content and aggressive behavior (Sparks & Sparks, 2002); the impact of stereotyping on interactions among people (Harris & Scott, 2002; Greenberg, Mastro & Brand, 2002); and modern media's impact on language (Severin & Tankard, 2001), simply by realigning the framework employed here to examine different coimplications among theoretical and phenomenological components. Media engagement and user attitudes about violence or stereotypical group attributes, could be aligned together in the information-detection area, for example; media usage and actual behaviors (i.e., aggression, overt prejudice), could be aligned with the action domain; and environment (i.e., access to both media and other people), could be incorporated. One could also use the ecological perspective to follow up after Lee and Wei (2008) and others who have studied readership and the Internet in relation to political participation. Participation is thought to decrease as fewer young people are exposed to traditional print media's in-depth coverage of politics, government, current events, etc. (Lee and Wei 2008).

The present study's framework is presented in hopes of enhancing scholarly understanding of young adults' engagement with news media. Almost all Americans – 93 percent, Pew (2010, March 1) found – follow news at least sometimes, and reported several reasons or motivations for doing so. Among college graduates, more than half use four or more news platforms a day. Younger, poorer and less educated respondents were more likely to be single-platform users (Pew, 2010, March 1). The Pew Research Center is considered a particularly credible source of age-related phenomena, as Gaddy (2010, May) noted: "The vast majority of the research in news consumption that includes differences among age groups comes from the Pew Center's industry reports" (p. 3).

Pew's (2010, March 1; 2011, May 9) findings on age are particularly of interest herein because they relate to the Millennial age group (18-29), which was "the first generation since the introduction of television to rely less on broadcast media for information, believing that there are quicker, better ways of staying informed, such as by cell phone, email or even face to face (Kaimal, 2003; Niedermier, 2004)" (Tanner, 2010, December, p. 39). It seems worthwhile, then, to apply an ecological framework to consideration of age and other user demographics. Kramer (2010, September 14) noted that in one Pew study, a total sample size of more than 3,000 people provided data – but only 501 of them were aged 18-29 and less than 200 were in the 25-29 age group (Kramer, 2010). This study aims to collect data exclusively from one small group of college-enrolled students of all ages and grade levels, thereby considering the influence of demographics within the Millennial range and as constrained by the educational setting (college student). Thus, the present effort examines the college years in relation to an ecological framework that encompasses Pew's (2010, March 1) new metrics of news.

Lee and Carpini also delved further into findings of Pew's 2008 Biennial Media Consumption Survey and learned "habits are shaped by the larger media environment with which one grew up in (i.e., one who grew up in the era where print newspapers dominated the media landscape will remain print newspaper readers in adulthood). More importantly, that people's online news consumption behaviors largely mirror their offline news consumption habits" (2010, April 22-24, p. 1). Livingston (n.d.) reported results of a study of college students at Coe College, Cedar Rapids, Iowa. More than half use Internet news sources "more than television, radio, newspapers, news magazines and friends to stay informed" (p. 1). Only 19 percent listed television as their primary news source; almost half (44 percent) reported accessing news once a week; just over one fourth of respondents (26 percent) reported using news at least twice daily (Livingston, n.d.). The present study and its newly developed ecological framework may help illuminate the dynamics behind these kinds of choices.

CHAPTER II

LITERATURE REVIEW

Computational and ecological understandings of perception are quite different, with sharp contrasts in concepts, terminology, methodology, scope, etc. (Michaels & Carello, 1981). A fuller comparison of the two paradigms seems a helpful beginning point for discussion of the theoretical framework shown in Figure 2.1. Theoretical foundations are provided first, followed by discussion of the framework's components beginning with the Action Domain at the top and moving clockwise through the Perceptual and Environmental areas, ending with the centrally located Agent Domain. A preliminary research question is posed for each region, drawn from theoretical foundations and from the literature review that follows. This chapter closes by developing the preliminary questions into formal research questions, hypotheses and associated operationalizations. Chapter III expands these further to include related measurements and details of the proposed methodology.

Ecological Psychology and Affordance Theory

Michaels and Carello's (1981) schematic illustrated how "coordination must be defined over three components: an action system, a perceptual system, and an environmental niche" (p. 144). The present study examines the role of news media content, channels and related devices in these "coimplications" (Michaels & Carello, 1981, p.145) and thus incorporates them into action, perception and environmental domains. To best understand this ecological approach, one must first understand ecological psychology's concept of affordances (Gibson, 1979; Michaels & Carello, 1981; Giles, 2003).

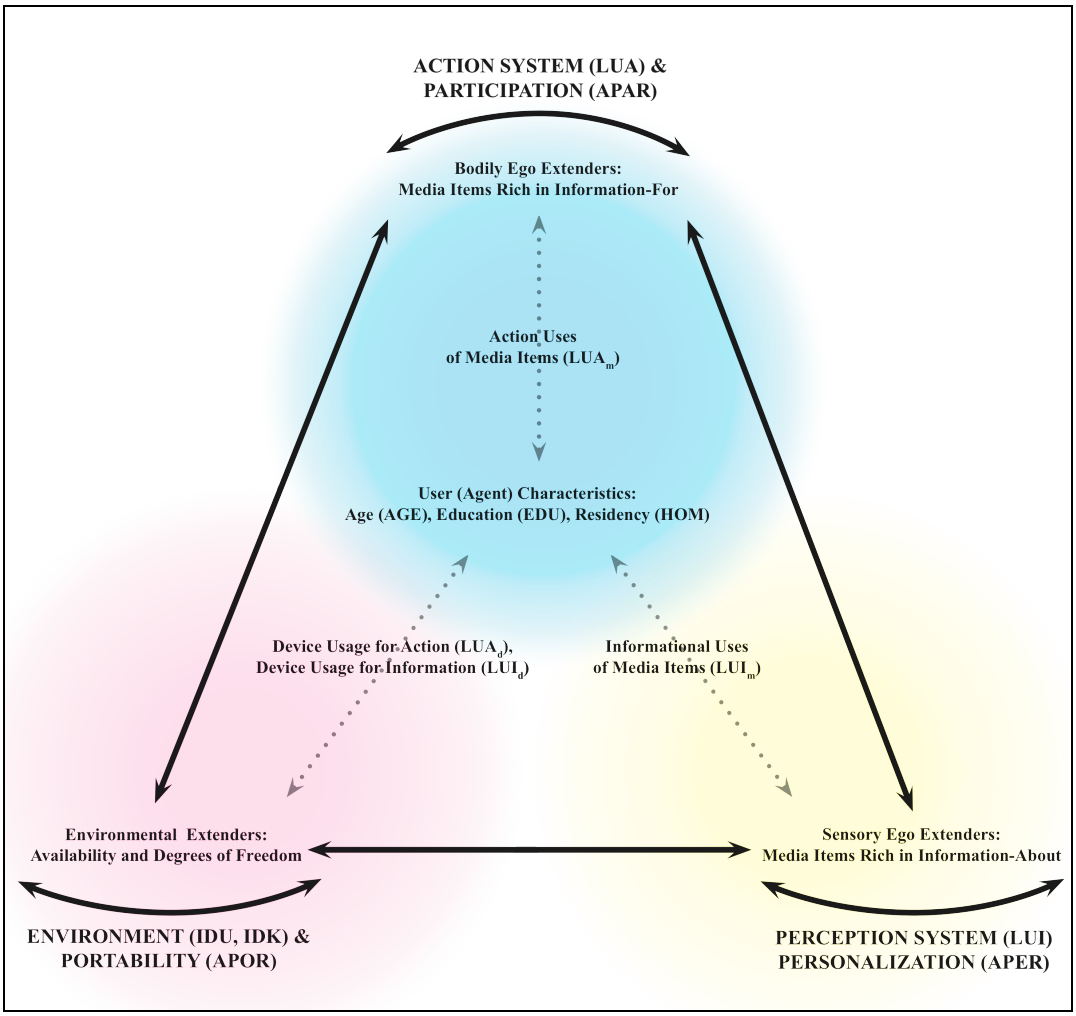

Figure 3. The theoretical framework developed herein juxtaposes ecological concepts (Michaels and Carello, 1981) with theories from traditional uses and gratifications scholarship (Blumler and Katz 1974) and with the Pew Research Center's (2010) news metrics of Participation, Personalization and Portability. The Action System (LUA) is aligned with the Participatory (APAR) metric. Media forms rich in information for the support of action goals (LUA_m) are deemed action extenders and categorized here. The Perceptual System (LUI) is aligned with the Personalization metric (APER). Media forms rich in information-about in support of informational goals (LUI_m) are deemed sensory ego extenders and are categorized in this domain. The Environment (IDU, IDK) is aligned with the Portability metric (APOR). Media-related devices and technologies for support of both action and information goals (LUA_d, LUI_d) are deemed environmental extenders and are classified in this realm, potentially constraining one's degrees of freedom or range of action- and information-related choices. In the central position, the Agent's (i.e., user's) demographic characteristics (AGE, EDU, HOM) come into play. Straight arrows represent interconnection and interaction among components; curved arrows indicate that each conceptual layer can be realigned to other positions, thereby increasing the model's flexibility. Colors indicate that components and their influences overlap, recombine and change over time in dynamic fashion.

As the root of James Gibson's (1979) theory of direct perception, affordances are defined as "the acts or behaviors permitted by objects, places, and events. 'The affordances of the environment are what it offers animals, what it provides or furnishes, either for good or ill' (Gibson, 1979)" (Michaels & Carello, 1981, p. 42). These affordances exist within the complex information array present in any animal's immediate environment: "it is the affordance that is perceived … to detect affordances, quite simply, is to detect meaning" (Michaels & Carello, 1981, p. 42). In ecological terms, perception itself is refined as "the detection of useful information" (p. 46, emphasis added). Put more simply, perception is the detection of affordances. In this fashion, what one perceives about *chairs* is the affordance of *sitting*. Chairs are meaningful to people because of what people can do with them.

In the present study, news users, news media and associated delivery technologies are viewed through this theoretical prism. What affordances do people perceive in the various media and device choices available to them in their environments? It would seem that users would gravitate toward media forms and technologies that afford greater opportunities for extending both bodily actions and information-detection (i.e., more purely intellectual or cognitive activities).

According to Gibson (1979), dynamic, real-time interactions between environments and agents produce constantly changing webs of affordances because people routinely create, change and rearrange their environments. "The net effect of such alterations is to change the affordances of the environment (Gibson, 1979) … the human-made environment serves to change the affordances of the environment to suit the goals of human beings" (Michaels & Carello, 1981, p. 55-56). This is readily apparent in the

functioning of modern media, particularly those offering Pew's (2010) three new metrics. Media forms and devices that afford greater levels of participation, personalization and portability certainly would enhance one's ability to customize one's environment in relation to particular goals. This research explores one such possibility – namely, that users would be drawn to participatory media when they have action goals that can be supported by action-system extenders; and that they would similarly be drawn to personalizable media when they have perceptual (i.e., information-detection, cognitive processing) goals that can be supported by perceptual system extenders. Users would similarly be drawn to portable media in both goal conditions because portability could easily provide both action- and perceptual-system extension.

The theoretical approach to this research as just described, is firmly rooted in the two categories of man-made environmental alterations recognized by ecological psychologists, namely, "objects used in some activity and devices employed to gain information. Both are ego-extenders, or extensions of the self. One resides on the perceptual end and permits the detection of more and different classes of information, and the other resides on the action end, permitting more powerful, faster, more delicate and more effective actions" (Michaels & Carello, 1981, p. 56). Any environmental object, then, could be described in these terms as either affording (Gibson, 1979) information-for, and thus extending the action system; or affording (Gibson, 1979) information-about, and thus extending the information-detection system.

Similarly, any environmental component could afford degrees of freedom (Michaels & Carello, 1981) in service to action, information-detection or both. Degrees of freedom refer to the great variety of choices a person may have in any given

environment, to achieve any given action or goal – for example, arranging one's bedroom furniture (Sporrle and Stitch, 2010).

Theoretically speaking and in keeping with this particular framework, this research organizes participants' reported media and device uses, gratifications (i.e., goals) and selected demographics by sorting and aligning them in search of the "coimplication" Michaels and Carello described (1981, p. 145). Action, Perceptual, Environmental and Agent domains reflect affordances that various media and devices are thought to offer, while respondents' likelihood scores indicate which of those media and devices they would choose in particular goal conditions. Hypotheses and research questions reflect the coimplications one would expect to find between elements given the ecological framework illustrated in Figure 3.

This effort is designed to enhance and expand on the strictly information-processing perspectives commonly employed in the uses and gratifications approach to studying news media. Michaels and Carello (1981) described this paradigm as their "exemplar of the indirect view" (p. 4) of perception, in which sensory input is believed to be incomplete, inadequate, and piecemeal. Such impoverished input must be improved or "embellished …. processed: cognitive operations must intervene in a constructive way" (p. 2). In this view, as with McLuhan (1964/1994; 1967/2001) and Huxley (1943/1974), "traditional theory belittles the input, but at the same time praises the quality of the product … the percept must come, in part, from the perceiver … the primary internal contributor to perceptions was and is memory" (Michaels & Carello, 1981, p. 5).

Michaels and Carello noted, "The currently accepted definition of perception involves an essentially miraculous process by which sense data must be wheedled and

cajoled by higher-order processes into accurate knowledge of the external world" (p. 3). In uses and gratifications scholarship, the amorphous concept of needs lies at the heart of this perceptual miracle (Elliott, 1974).

In the ecological paradigm's direct mode, no wheedling, cajoling or miracles are needed because meaning is perceived directly from one's environment, which ecological theorists maintain is information-rich (Gibson, 1979; Glenberg, 1997) – especially as one builds on one's innate ability to discriminate ever finer shades of important details present in one's environment (Gibson & Gibson, 1955; Gibson & Walk, 1960; Heft, 1993). Likewise, one develops ever-greater capabilities and acquires ever more tools with which to customize the environment. Discernment of meaning, then, is not an inside-the-head abstract thought process alone, but rather, a continuous interaction that is both embodied in the user and embedded in the user's particular environment (Gibson, 1979; Michaels & Carello, 1987; Glenberg, 1997). And herein lies the value of the ecological framework as currently employed: It supports study of important cognitive and memory-based processes of news engagement within the overarching context of ecological affordance theory, thus recognizing the equally important roles of action, perception and environment in modern news engagement.

Uses & Gratifications Approaches

Pew's (2010, March 1) metrics highlight the increasingly dynamic nature of news strongly resembling McLuhan's "age of anxiety" ((1967/2001, p. 8-9) in that paradigmatic roots of traditional mass communication theories are stretched to fully explain many phenomena of modern media. Roots of the field's theoretical tradition can be traced back (in part) to Walter Lippmann's famous 1922 book, *Public Opinion* and

Harold Lasswell's equally important 1927 work, *Propaganda Technique in the World War* (Britannica, 2011). These, along with Lasswell's verbal model, who says what through what channel, to whom and with what effect, became the foundational view of perception in mass communication studies (Severin & Tankard, 2001). This linear understanding of mass communication processes dovetailed nicely with Claude Shannon's (1948) famous Mathematical Theory of Communication as applied by Warren Weaver (1949)**.** Shannon originally created his "general theory of communication" (1948, p. 1) and associated model to describe how information flows through any system. Weaver (1949) argued the theory was broad enough to explain phenomena ranging from language to nonverbal communication to computers that 'think,' emphasizing the relationship between *entropy* (uncertainty) and *information* (used to reduce entropy).

McLuhan described such processes in relation to perceptual functioning: "All media exist to invest our lives with artificial *perceptions* and arbitrary values" (McLuhan, McLuhan & Gordon, 2003, November, p. 176, emphasis added). Thus, *perceptions* were understood as created abstractions – intangible mental constructs – built by additively enhancing imperfect sensory data with internal schema contents (memories, mental images, language, rules, etc.). Aldus Huxley's (1943/1974) definition of perceiving illustrates this view quite succinctly. As described by Lester (2005), in Huxley's process of seeing, "the last stage is to perceive … you must try to make sense of what you select … you must *actively consider the meaning* of what you see" (p. 7, emphasis added). Huxley's process may be easily summarized as sense, select, perceive (Lester, 2005).

Early theories focused on the activities and goals of the source (the sender) rather than the destination or receiver (Severin & Tankard, 2001) and generally asked, what do

media do to people? To expand the research perspective, Katz and Berelson eventually posed their famous query, *what do people do with media?* (Blumler & Katz, 1974; Severin & Tankard, 2001) as the basis for uses and gratifications approaches. Blumler and Katz (1974) defined uses and gratifications as "a research strategy" (p.15) flexible enough to test research questions stemming from many theoretical positions but cautioned against "thorny methodological problems" and "limitations of both respondent self-report and investigator inference" (p. 14).

Later on, Severin and Tankard (2001) summarized uses and gratifications' development forward from the 1970s and also found mixed reviews. Some argued uses and gratifications studies offered "a significant contribution to understanding as we move further into the digital age and media users are confronted with more and more choices …. It is the single area of theory that has attempted most directly to deal with the active audience" (p. 302).

Others, however, deplored persistent "theoretical, methodological and substantive issues" that remained unresolved among scholars (Blumler & Katz, 1974, p. 13). Some perceived too close a connection to functionalism; others decried the "lack of a uses and gratifications theory as such" (p. 15). Yet, a primary strength identified was uses and gratifications' suitability for pairing with many different kinds of theories and perspectives from other disciplines of study; Blumler and Katz (1974) made specific mention of potential in psychology, sociology, ethnography, philosophy, etc. Also noted was "the strongly dynamic character of the relationship between audience needs and media provision. The fluidity of this association over time will evidently merit yet closer attention in the future" (p. 16).

The present study answers these calls and builds on these strengths, pushing interdisciplinary exploratory bounds by applying ecological affordance theory (Gibson, 1979) as a specific framework – one that parsimoniously guides and organizes theoretical concepts and associated usage phenomena into the framework's four domains. Blumler, Katz and Gurevitch (in Blumler & Katz, 1974) noted the many typologies of needs, motivations and gratifications that have emerged from uses and gratifications scholarship, dividing media activity into categories including surveillance, correlation, entertainment and cultural transmission/socialization; or alternatively, diversion, personal relationships, personal identity and surveillance; or otherwise as any way of fulfilling generalized needs for connection and belonging (Blumler, Katz & Gurevitch, 1974).

Much of the research summarized herein in relation to uses and gratifications approaches, centers on the idea that people use media (among other things) to fulfill physical and/or psychological needs. Perhaps the most famous conceptualization of human needs is Maslow's (1943, 1970) pyramid hierarchy, which lists human needs from the most fundamental at the bottom, to the most lofty at the top. Physiological survival needs in support of body functions form the first, bottom layer of Maslow's (1943, 1970) scheme, followed by safety needs; belongingness and love, sometimes called social needs; esteem needs; and self-actualization needs. Maslow (1943, 1970) held that people must ensure physiological survival needs before attending to safety needs; that safety needs must be met before social needs can be addressed; etc. In this way, each level of need is fulfilled (at least theoretically, to some minimal degree) before the individual moves on to higher categories of need in a "hierarchy of relative prepotency" (Maslow, 1970, p. 17). For example, one can hardly care about avoiding loneliness (a

belongingness need) if one is starving, thirsting, or lacking basic shelter from the elements (physiological and safety needs). Once fundamental needs are met, though, one can focus on building esteem (both self-esteem and the esteem of others). Finally, at the top of Maslow's pyramid, people seek to be true to themselves (Maslow, 1970) in the quest for self-actualization; as Maslow put it, "musicians must make music, artists must paint … What humans *can* be, they *must* be" (Maslow, 1970, p. 22). Maslow (1970) also outlined cognitive aspects needs, aesthetic needs, and the workings of motivation, expectation and satisfaction, all the while recognizing that some needs are unconscious (i.e., out of one's awareness) and/or culturally specific.

The present study's ecological framework and its use of Pew's (2010, March 1) metrics are intuitively compatible with Maslow's view, in that any particular media user may be guided at any time by any of Maslow's levels of need. Those needs, in turn, would be met more or less efficiently for particular people in particular environments, by particular kinds of media engagement, precisely as ecological theory envisions. Blumler, Katz and Gurevitch (1974) said that in uses and gratifications research, though, focus on producing typologies of needs left an "absence of a relevant theory of social and psychological needs. It is not so much a catalog of needs that is missing as a clustering of groups of needs, a sorting out of different levels of need, and a specification of hypotheses linking particular needs with particular gratifications" (p. 24).

Blumler, Katz and Gurevitch also recommended further study to include situational contexts that might influence media exposure. The present research does so more simply by reducing the number of multifunctional categories to the framework's four theoretical domains.

Blumler, Katz and Gurevitch (1974) suggested two approaches for sorting out typologies of needs, on one level, and gratifying media attributes, on another level. The first recommended studies designed to link certain kinds of content to certain kinds of need fulfillment. The second called for explaining relationships between media and gratifications. They asked what elements or attributes "render some media more conducive than others" or "help to attract the expectations for which they apparently cater" (Blumler, Katz & Gurevitch, 1974, p. 25). This study examines Pew's (2010, March 1) metrics as potential answers to such questions.

Writing in 2010 about the current state of the journalism industry, Mersey (2010) echoed questions Blumler, Katz, Gurevitch (1974) and others raised about uses and gratifications studies. Mersey associated uses and gratifications scholarship with journalism as an "audience oriented or identity-based model" (p. 37) that has helped researchers to "know a great deal about who reads what and why" (p. 37). However, researchers' uncertainties about uses and gratifications prompted Mersey's description as a model rather than a theory: "a true theory must explain or predict a relationship among variables. The uses and gratifications approach simply asserts that individuals use the mass media to gratify their needs, and it stakes its strength in its ability to allow the study of individual psychological desires and motives across channels and content" (p. 37). The present study's framework is still just that – a framework that is not necessarily provable, but that offers a vehicle for provoking thought and identifying potential new areas of study. As such, the ecological approach goes beyond assertions to attempt an explanation of how various needs might be coimplicated (Michaels & Carello, 1981) with various domains of the action-perception-environment perspective.

Blumler, Katz and Gurevitch (1974) offered a verbal model for uses and gratifications research, being "concerned with (1) the social and psychological origins of (2) needs, which generate (3) expectations of (4) the mass media and other sources, which lead to (5) differential patterns of media exposure (or engagement in other activities), resulting in (6) need gratifications and (7) other consequences, perhaps mostly unintended ones" (p. 20). Likewise, Blumler & Katz (1974) cite a model of five assumptions: audiences are active; audience members take initiative in matching needs to media choices; media compete with other environmental sources of need gratification; audience members understand themselves well enough to report media uses and gratifications accurately; and finally, critical approaches to mass media study may cloud the ability to examine phenomena "on their own terms" (p. 22).

McGuire (1974) used the most current typologies of motivational psychology of his day, noting a dominance of humanistic over physiological explanations for human motives paired with heavy emphasis on cognitive aspects of motivation. Stemming from this dichotomy, McGuire proposed four organizational dimensions of cognitive vs. affective, growth vs. preservation, active vs. passive striving, and internal vs. external goal motivations. The cognitive-affective distinction stresses "directive aspects of motives versus their dynamic aspects, that is, forces that orient, as contrasted with those that energize, the individual. The cognitive motives stress the person's information processing and attainment of ideation states, while the affective motives stress the person's feelings and attainment of certain emotional states" (p. 173). Thus, sixteen categories are offered including eight cognitive needs – consistency, attribution, categorization, objectification, autonomy, stimulation, teleological and utilitarian; and

eight affective needs: tension-reduction, expressive ego-defensive, reinforcement, assertion, affiliation, identification and modeling (McGuire, 1974). Each list of eight motivations is further subdivided into aspects of active or passive initiation; internal or external goal; and a preservation or growth aspect. The list could be made even longer by adding more levels, however, McGuire cautioned, "the 16 types of needs used in this chapter may already err on the overly complex side" (p. 173).

The framework used here adds behavioral and environmental dimensions that were absent from McGuire's (1974) approach and reduces the number of concepts placed in relation to one another. Nine primary components are offered, rather than 16: three ecological domains (action, perceptual and environmental), three media-related Pew variables (participation, personalizing, and portability), and three aspects of news media users (goals, media/device usage and selected demographics) juxtapose in four domains.

Elliott (1974) called for stronger theoretical development from a sociological perspective. He held that in both psychological and functional approaches to uses and gratifications, needs were poorly understood or at least poorly explained: "need is the residual factor and yet it is also put forward as an explanation for the process. As explanatory variables, "needs" appear to exist outside time and space" (p. 251).

In the present study, needs are not so vague, but are linked directly to explanatory theoretical and phenomenological neighbors via the ecological framework. This allows needs to be understood in the dynamic context of constant interaction between a person and his or her environment – more specifically, the relationship between goals (supporting action or supporting cognition); media and device components of environments; and selected personal characteristics. This approach views media usage as

unfolding from interaction among all components– not as arising from any one component or usage aspect alone. The goal of this analysis is to determine which combinations of components appear to best explain user's choices for media and devices that afford participation, personalization and portability

The present study builds on Rosengren's (1974) model illustrating basic needs as influenced by societal characteristics (including media) and individual characteristics. These pressures on needs produce perceived problems and solutions for the individual, which flow into motives for both media behavior and other behavior (Rosengren, 1974). The result is either need gratification or non-gratification as described in Rosengren's "outline for a paradigm of uses and gratifications research" (1974, p. 270). The explicitly stated intent was to move beyond Lasswell's verbal model toward a "more elaborate paradigm" (1974, p. 269) to describe uses and gratifications scholarship.

Rosengren and McGuire both touched on surrounding environmental and social contexts in their work. Rosengren suggested recognizing "the biological and psychological infra-structure that forms the basis of all human social behavior. We all carry with us a bundle of biological and psychological needs that make us act and react … needs do not develop in a vacuum but in interaction with a host of other variables … characteristics of the individual and his society" (Rosengren, 1974, p. 270-72). Likewise, McGuire noted internal/external and active/passive dichotomies. Both scholars, however, focused on environmental issues primarily as a secondary backdrop or context for the media user's mental processes (McGuire, 1974). The present perspective adds biological and psychological underpinnings and the context of dynamic social and environmental interaction, placing equal focus on action, perceptual activities, agents, and environments.

Structural Details of the Ecological Framework

The framework employed here uses four domains – Action/Participation, Information/Personalization, Environment/Portability and Agent, all of which are likened to wheels or gears, each turning in relation to the activities and influences of each of the others. The color scheme derives from colors used in traditional printer's inks: cyan, magenta, yellow and black, represented by the letters C, M, Y and K respectively. This structure resembles that of the proportion wheel once used by newspaper editors to convert a photo's measurement in inches to measurement in picas. This proportion wheel consisted of two plastic or cardboard discs attached in the center. Each could be rotated until an existing measurement in inches is aligned with a corresponding pica measure; the resulting reduction or enlargement would then be revealed through a notch in the disc. Like a proportion wheel's discs, domains of the researcher's model can be aligned in many ways to test many combinations of variables and theoretical concepts.

Lines and arrows in the model indicate the inherently interactive nature of the phenomena under study. Gradients delineate the three dynamically connected domains. These have no hard and fast boundaries between them in keeping with the dynamic nature of interaction the model represents. This offers the Agent myriad degrees of freedom (choices) for supporting action-related and information-related goals. These degrees of freedom or choice regarding media usage are constrained by availability of, and knowledge about, the array of media and devices present in one's environment.

In addition to providing context for the study of user demographics associated with the Agent domain, this conceptualization also accommodates inclusion of the user's goal for using media and devices, namely, in service to action-related or information-

related intentions. Traditional uses and gratifications approaches guided this study's examination of user demographics and media/device usage; and such approaches dovetail nicely with Gibsonian theory in that *uses* for media or devices can be equated with the affordances inherent in those media and devices; while "gratifications" can be equated with the resulting extension or enhancement of action and perceptual systems. Agent characteristics selected for inclusion in the model are based on the literature review herein, including Pew's (2010, March 1) findings on participatory news consumers. Many characteristics Pew (2010, March 1) identified have also been examined by (or have emerged from) the work of other scholars also summarized in the literature review.

The Action System Domain and Participatory Media

Theoretical foundations. The upper domain expands on Michaels and Carello's (1981) Action System, which they define as the body and all its various extenders that allow "more powerful, faster, more delicate and more effective actions" (Michaels & Carello, 1981, p. 56). This domain includes the ecological concept of bodily ego extenders affording information-for the support of actions. Such extenders may include any environmental component including other people (Michaels and Carello, 1981). Cameras, television news reports, bicycles, smart phones, satellite signals, pocket calculators, Internet connectivity, roommates, family members, and more could all be classified most generally as affording action extension at some times for some people. From a uses and gratifications theoretical standpoint, uses are viewed herein as one's particular choice of a media form or device. Gratifications are viewed as the desired outcome or goal, likewise classified most generally as the enhancement of action power, speed, delicacy and effectiveness that results from acting on these affordances.

Affording information-for support of actions. Michaels and Carello (1981), after Gibson's (1979) concept of the optic array, conceptualize the environment as an expansive informational structure of light, sound, tactile stimulation, etc. that provides "the minimum description of a perceptual event" – namely, "information-about" things, events and places in one's environment; and "information-for" enhanced execution of bodily activities (p. 37). Both kinds of information, "about" and "for," must be specified because "information is the bridge between an animal and its environment and cannot be usefully described" otherwise (p. 38). Media and devices affording "information-for" support of behavior remain in the Action domain. As discussed shortly, media and device usage supporting "information-about" (Michaels & Carello, 1981, p. 38) resides in the Perceptual System domain because its primary value to the user is support of cognitive or affective (not bodily) tasks.

Media and devices as action extenders. Media forms and devices, of course, are not part of the agent's body or brain; they are components of the agent's environment and thus reside most appropriately in the model's Environment domain. So, it cannot be said that any media form or device is a part of the Action or Perceptual domain. However, users' likelihood of choosing particular media forms or devices in a given situation is not determined solely by availability. It also depends on user characteristics, user goals, characteristics of the specific media form or device, etc. Thus, while media and devices may *live* in the Environmental Domain, the *uses* of those components can be aligned to other domains. The media and device uses aligned with the Action System domain are the ones survey respondents identified as those most likely to be chosen for support of *action* goals.

This dissertation asserts that such media and device uses afford "information-for" (Michaels & Carello, 1981) the agent in support of actions and thus serve as extensions (Michaels & Carello, 1981) of a person's action (body) system. For example, suppose a person has the action-oriented goal of cooking dinner. The person may support the action goal with media forms and/or devices, for example, tuning to a cable television show that offers cooking demonstrations; searching for recipes or cooking videos on the Internet; perusing newspapers that publish recipes; consulting cookbooks; or examining cooking magazines. Each possible choice – assuming it is available in the user's environment at all – offers varying levels of information-for in support of the same action goal. Now suppose the same person chooses among the same cooking-related media forms and devices, but this time, for a different purpose. This time the goal is enhanced or extended information detection – for example, learning how a dish is prepared; predicting whether the dish would taste good; or simply the enjoyment of learning about food and cooking. In these cases, the various choices offer varying levels of information-about in support of cognitive or affective goals (i.e., informational, not behavioral, tasks).

Notably, one must recognize that two types of action are at play in the foregoing definition: the physical action of engaging with any media device, content, features, etc.; and the user's ultimate action goal itself, namely, cooking dinner or being entertained. At the most basic level, using any object requires some kind of physical behavior (turning on the TV, typing an Internet search term, answering the phone, etc.). These are not the actions of interest for this study. Instead, this study focuses on actions or behaviors as user objectives that drive media usage – dressing appropriately for cooking, in the example just given.

It may seem necessary at first glance to include all media uses as actions because one cannot engage with media only with the mind; the body, by necessity, must also play a part in any media-related encounter. In this way, all media usage is embedded in an environment and embodied in a person's action system, just like any other activity (Wilson, 2002; Smith, 2005; Michaels & Carello, 1981). If all media uses are essentially actions, then, how can any of them be placed anywhere in the model besides the Action domain? This dilemma is readily solved when one views the Action System domain as a doorway or route through which all environmental engagements (being actions) must necessarily occur. Once inside the gate, however, media engagements can be separated into classes – and different domains of the model – depending on the type of information (Michaels & Carello, 1981) as described above.

Participatory media and the Action Domain. Participatory media (Pew, 2010, March 1) are defined after Pew's (2010, March 1) description as those that offer individuals the affordance (i.e., opportunity) of *physically participating with media* rather than simply reading, viewing or listening. According to Pew (2010, March 1), Participatory media are those with features or capabilities that support users' self-directed, contributory behaviors (posting news, commenting about news, circulating news items to other people, etc.). For example, Cable News Network (CNN) iReports (user-submitted news stories, videos, photos shared through CNN.com) are highly participatory. A CNN weather report on television with no chance for user contribution beyond viewing would not be participatory in this sense. Participatory media are considered herein as providing information-for, as ego-extenders of the action variety per Michaels and Carello's (1981) definition, and are associated with the Action Domain.

The Perceptual System Domain and Personalization

Theoretical foundations. Michaels and Carello (1981) define the Perceptual System as the body's five senses – the physical means by which people obtain information about the external world, plus the various ego-extenders used to enhance environmental surveillance, exploration, etc. (Michaels & Carello 1981; McGuire, 1974). In ecological terms, the senses and their ego extensions (Michaels & Carello, 1981) engage in direct perception, defined simply as the detection of information, or more specifically, information that specifies change of importance to the individual (Gibson, 1979; Michaels & Carello, 1981). Things that change stand in sharp relief against things that remain invariant (Michaels & Carello, 1981) or unchanging. In addition, change itself occurs (or does not) according to certain transformationally invariant (i.e., predictable) constraints (Michaels & Carello, 1981). These structural and transformational invariants govern the manner in which change happens in one's environment (Michaels & Carello, 1981). The environment itself is conceptualized as a "global structure … a precise specifier of the room and its contents. Obviously a perceiver cannot intercept all the individual rays that constitute this structure. Rather, the activity of a perceiver is characterized as *sampling the global structure*" (p. 23) of affordances and invariants specifying the agent's "information space" (p. 37).

Affording information-about in support of informational goals. This domain contains Michaels and Carello's (1981) aspect of "information-about" (p. 37) that "resides on the perceptual end and permits the detection of more and different classes of information" (p. 56). Environmental components aligned here are ones that afford extension of the perceptual system because they are deemed rich in information-about.

Michaels and Carello (1981) offered Runeson's planimeter metaphor**.** It is a device used measure the area of surfaces directly, without first having to measure and calculate dimensions. People investigate their environments much like the planimeter *investigates* area. People do not necessarily (or exclusively) register and then cognitively process piecemeal lower-order variables like Kelvin temperature, hue, air pressure, ambient decibels, pixels per inch, etc. Instead, people simply sample the global array and perceive its affordances – that is, its personally useful information - directly (Michaels & Carello, 1981). This is the purpose of the Perceptual Domain and its extenders. From a uses and gratifications theoretical standpoint, the Perceptual Domain would be associated with media and device uses for which the goal is enhanced information detection or cognitive information processing – learning or being entertained, for example, as opposed to bodily activities as described previously.

Media and devices as perceptual system extenders. News media uses and gratifications assigned to this domain are defined as those users describe as primarily in support of information-detection or information gathering for cognitive or affective activities. This dissertation asserts that these particular uses and gratifications afford information-about (Michaels & Carello, 1981) in support of one's mentalistic computational processes (the traditional realm of uses and gratifications approaches). Further, this dissertation posits that these cognitively oriented uses and gratifications serve as extensions (Michaels & Carello, 1981) of a person's perceptual (sensory) system.

Personalizable media and the perceptual system. Personalizable news media are defined much as Pew (2010, March 1) described, namely, as those affording

customization of content or presentation to fit the user's specific preferences, interests, etc. Personalizability is readily exemplified by a user's Google or Yahoo home page, which can be customized to show or hide certain kinds of information and resources (Pew, 2010, March 1). Histories, filters, preference controls, privacy controls, home page settings, paid subscription packages/limits, and similar offerings combine to make some media more personalizable than others (Pew, 2010, March 1). As with Participation, the definition of *personalize* is narrower than the norm. One can *personalize* a printed newspaper by specifying kind of subscription service one chooses to buy; or one could *personalize* each television set in the household by programming each one to remember only one family member's favorite channels. To meet this study's definition, characteristics of the media in question must allow real-time user-controlled personalization of content and/or delivery beyond the narrow scope of prepackaged choices or service packages.

The Environmental Domain and Portable Media

Theoretical foundations. The global sampling activities (Michaels & Carello, 1981) described typically involve surveillance and exploration of one's surroundings or environmental niche – in which, "ambiguity in a single sample can be dissolved with exploration; it need not, as indirect theorists might hypothesize, be rendered unambiguous by processes going on inside an animal" (p. 24). This is why ecological psychologists call for greater emphasis on environment, as well as action and perceptual systems. Drawing on Turvey and Shaw, Michaels and Carello (1981) noted, "To the extent that the environment has entered into the understanding of perception, it has been described as *the* environment, distinct and independent from its inhabitants. The notion

that *the* environment is animal-neutral is perhaps the most important manifestation of animal-environment dualism. In the ecological approach, the dualism of animal an environment is rejected. Because the study of direct perception is the study of an animal knowing its environmental niche, it is suggested that perception must be the study of an animal-environment system" (p. 14). This is why the same environment – one made up of the same features and information – offers different affordances for different users (Gibson, 1979). Notably, useful information is defined in this paradigm as "more than that needed to name or identify objects; it specifies what those objects mean to us as perceivers, what we can do with them" (Michaels & Carello, 1981, p. 46).

Affording degrees of freedom for action and perception. In ecological terms, degrees of freedom (Michaels & Carello, 1981) refer to the range of choices one has for executing any given behavior. Picking up an object with one hand, for example, poses fewer degrees of freedom than picking up an object with two hands, simply because in the later case, there are twice as many nerve signals, muscles, bones, and other body structures and activities to coordinate. Likewise, in terms of media usage, one could unfold the printed newspaper to read the traffic report; or one could go to the Internet and search for traffic reports. The former choice offers fewer degrees of freedom, i.e., fewer choices or steps amounting to a simpler action. The latter choice, however, may offer more or better information – such as more recent traffic reports or reports from multiple sources. This dissertation asserts that availability of media forms and devices affords degrees of freedom (Michaels & Carello, 1981) or control over the range of potential behaviors and cognitions supported by aspects of the Participation and Personalization domains. This is because the presence or absence of certain aspects in one's environment

determines of the potential for participatory, personalized and portable media usage, obviously limiting (or enhancing) the user's experience.

Media and devices as environmental niche extenders. Tools for accessing news media – generally, media forms and the devices or technologies used to access them – are assigned to this domain simply because they are objects of the environment, not components of people as mentioned previously. This domain examines the environment specifically, and accounts for three kinds of information collected from research participants: the types of media and devices they use and can therefore score; the media and devices they are familiar with but do not use, and therefore cannot score; and the media or devices that were unfamiliar or unknown to the respondent and therefore not scored.

Technological change has been a challenge for news media and for Pew and other organizations that study news phenomena. Pew Project for Excellence in Journalism director Tom Rosenstiel said modern times represent "'the end of our digital childhood' as the way content is delivered shifts along with the kind of tools being used and expanded access" (p. 1). However, "the scant mobile-use exploration means this edition of the biennial survey of news consumption doesn't really measure that expansion" (Kramer, 2010, September 14, p.1).

Portability and the environmental domain. Portability is defined after Pew (2010, March 1) as the gratification (or in ecological terms, the affordance) of real-time, dynamic access to media as one travels from location to location. This is most readily associated with cell phones and laptop computers equipped with Internet access. In this definition, the portability of merely being able to pick up an object and move it, doesn't

count; that is to say, a flat-screen television may certainly be transported from one room to another and is therefore, in that sense, portable; but a flat-screen television does not meet the definition of portability for this study, because one can't effectively carry it around and use it to access information in real time from various locations.

Theoretically, Portability could be understood an affordance (Gibson, 1979; Michaels & Carello, 1981) offered by various media forms or devices – that is, some afford Portability better than others do, for particular kinds of users. One may also examine Portability as an extender or constrainer of Participatory and Personalizable news usage. The gratifications associated with usage of Portable news media, would generally involve real-time mobile support for fulfillment of goals (action or informational). Weather reports offer gratifications no matter how they are accessed, for example; and handheld devices with wireless Internet access offer portability no matter what content is accessed. The two combined offer the information, in real time, across a broader range of physical environments, thus extending (or by their absence, limiting) the environmental niche.

It seems obvious that the availability of Portable news media and devices in one's environment determines the degrees of freedom or range of possibilities afforded for sampling the global array (Michaels & Carello, 1981) as previously discussed. Common sense leads one to suspect that most people would prefer to have a greater degree of Portability in support of actions and behaviors; however, in actuality, this may or may not be true for particular types of users with particular demographic characteristics, types of environments, media or device preferences, uses, gratifications, etc. This dissertation explores how Portability might influence users' choices for action and information goals.

The Agent Domain: Demographics, Media Usage and Device Usage

Theoretical foundations. Assigned here are the demographic characteristics of individual respondents that one might expect to influence any or all of the framework's other domains, as well as their reported likelihood of using particular media forms and devices for action or informational goals. Age, education level and home environment are of greatest interest based on the literature review below, so these are identified for planned comparisons in statistical analysis (Shavelson, 1996). Data on race, gender, etc. are defined as characteristics of secondary interest (again, based on the literature review). Survey responses to these items will be used for descriptive purposes and potentially for secondary post-hoc analysis, if any show potential for further study (Shavelson, 1996).

Michaels and Carello (1981) distinguish their definition of the "active agent" (p. 8) from that offered by the information-processing paradigm. "Ecological theories not only assume that organisms exist in a rich sea of information about their environments, but also that they evolved in a rich sea of information … for information processing psychologists, perceivers are active in the 'constructivist' sense (see Neisser, 1967); that is, they are active creators (embellishers, elaborators, etc.) of their perceptual experiences. Direct perceptionists, on the other hand, would say that perceivers are active in that they actively explore (look, feel, sniff, taste and listen to) the contents of their environments … perceivers are not passive recipients of information, but active, purposeful obtainers of information. Thus, if the information is meager, the normal, active perceiver will engage in activities that yield more information" (p. 15).

Active agents build their own bridges with "obtained information" (Michaels & Carello, 1981, p. 38) as well, during the course of their exploratory activities. For this

reason, it is not sufficient in ecological research to focus on the agent or the environment alone. “Because the study of perception is the study of an animal knowing its environment, the unit of analysis must, by the nature of the theory, be an animal-environment system … the animal is seen as an investigator, not simply an inhabitant, of its world” (Michaels & Carello, 1981, p. 17). Characteristics of the investigator may then influence the ways in which such investigations are pursued.

Age, education, media use and device use. The present study focuses demographically on age and education, because these two items come up again and again in associated literature, as potentially relevant to the media forms, content and technologies people use. Other variables such as gender and income level emerge less frequently or in relation to more specific types of inquiries. Age and education are also considered important because both are indicators of generational themes noted in the literature as potentially significant. This study will explore whether the age range of students surveyed appears to influence their choices for media forms or devices; and whether the difference in educational level from freshman to senior or graduate student appears to make a difference in usage likelihood.

Pew reported 29 percent of online news users are younger than 30. “Those who get news online stand out in terms of their high income and education levels, their young age, their racial/ethnic identity, and their use of broadband …” (Pew 2010, p. 22) The same age group is also heavily reliant on social networks. “Those who use social networking sites such as Facebook are also more likely to rely on their tribe for news tips … And those who are less personally engaged with news gathering are more reliant on their networks … 27% of those who “hardly ever” or “never” follow the news say they

rely on their networks for tips …" (Pew 2010, p. 20) Young Adults are especially likely to say they routinely use multiple online news sources, but Pew's (2010, March 1) findings didn't identify a single favorite online news source. Online news users under age 30 relied in particular on portal news sites and on "journalists, news organizations and others on Facebook …" (p. 27) Pew (2010, March 1) also noted, "A significant portion of online new consumers judge news organization websites by the degree to which they facilitate the social sharing of news … young online news users have substantially stronger attachments to the social features of websites than other news users" (p. 41).

Cooper and Tang (2009) sought to make predictions about media users' exposure to television, using both uses and gratifications and structural variables as guides. They found that no fewer than seven factors accounted for 30 percent of variance in television exposure: ritualistic motivations, instrumental motivations, Internet use, audience availability, cost of service, gender, and age (2009). Their results "suggest that no single theoretical construct explains the complexities that determine exposure to television. Future inquiry should continue to seek theoretical and empirical integration" (2009, p. 400). Similarly, Winnig's (2010) study of voting behaviors and online/offline political participation, found multiple influential variables. Younger, better educated, wealthier, and female respondents were most likely to report online political participation. More educated adults, as well as younger adults, reported engaging more often in a wide range of online political activities; gender (female) and income (wealthier) were associated more closely with particular online campaign activities. Both of these studies reflect the reality (at least, from the ecological perspective) of unity between agent, action and environment, all being linked by information.

Tobola (2009/2010) studied the influence of three demographic variables on the type and kind of electronic devices people use, particularly desktop computers, laptop computers, cellular phones, PDAs, webcams and MP3 players. All three variables taken together had significant effects on the number and types of devices owned; however, the effect for gender was extremely low – explaining only 3 percent of the variance in number of devices owned, compared to 22 percent of variance accounted for by all variables together. This prompted Tobola (2009/2010) to conclude "no 'gender gap'" (p. 49) in that regard. In Tobola's (2009/2010) study, income was an important factor only in the highest and lowest brackets, but not in the middle range, motivating Tobola to observe, "factors besides income should be considered in evaluating the digital divide" (2009/2010, p. 31).

Gaddy sought to understand what "readers want from their paper in a more mobile environment, and how strongly age is related to differences in light of other factors (such as education, gender, income)" (2010, May, p.3). He noted that all but one of the top 25 American newspapers experienced readership declines in 2009 and wrote, "many in the industry hope alternative news delivery will help news publications reverse this trend. By having data regarding the uses and preferences of readers, newspaper companies can tailor content to better reach" (2010, May p. 3) across generational divides. Gaddy encountered a challenge similar to one experienced in developing the present study, namely, that "few academic studies have focused on news consumption in regards to new technologies. A major reason for the lack of specific research is the speed in which these technologies have emerged. Most of the data regarding news preferences of varying age groups are part of national reports that encompass the news consumption

habits of the entire American public. Research that does focus on the influence of age deals primarily with general communication technology use rather than specific news consumption" (2010, May, p. 3).

Head (2011, April 4) explored how "college students look for information to solve problems in their daily lives" and noted that psychologists have "identified the early 20s as a crucial time for learning and applying problem solving skills" (p. 2). He found "information–seeking activities may be equally or more complex for students" than for older adults. (Head, 2011, April 4). "These factors make college students a unique cohort to study, especially today when an unprecedented number of students were born digital [2]. A parade of new digital technologies has been a constant feature in most of their lives. For this generation, information–seeking strategies are being formed, practiced, and learned. These methods are put to the test in the vast information landscape of their college years. Overall, little is known about the everyday information worlds of today's college students" (Head & Eisenberg, 2011, April 4, p.1).

Tanner (2010, December) relied in part on Pew's research for a technical memorandum addressing age and the Canadian government's navy recruiting needs. Tanner (2010, December) described Millennials – the generation that includes today's college-aged youth – as "'Technologically savvy', 'wizards of the web', 'techno-wizards', 'net generation', 'media savvy' … the Millennial Generation … has grown up in the fastest and most complex era of technology thus far (Purdue, n.d.; Vogel, 2001; Kaimal, 2003; McGee, 2004; Pooley, 2005; Sandars, 2006; Spiro, 2006; Byrne, 2007; Brusilow, 2008) . . . Today's youth have seen, and indeed created, "seismic changes" in how society creates, consumes and manages culture and communications" (2010, p. 38).

These users are deeply connected to technology of all kinds – cell phones, computers, portable devices and the Internet itself.

Research Questions and Hypotheses

The Action Domain and Participation (LUA, APAR)

Research Question 1. What media and devices do subjects report they are most likely to use on occasions when their goal is "more powerful, faster, more delicate and more effective actions" (Michaels & Carello, 1981, p. 56)?

Hypothesis 1. Users will be more likely to choose highly Participatory media and devices over others when seeking information-for in support of action goals:

$H1_1$: $R^2_{LUA,\ APAR} \neq 0$

$H1_0$: $R^2_{LUA,\ APAR} = 0$

Operationalization. News Usage Survey respondents will rate their likelihood of using each of 23 Media Forms (M1 through M23) and 23 Devices (D1 through D23) for Action goals.

Mean scores for Likelihood of Usage for Action (LUA) for each item are calculated by dividing the sum of likelihood scores provided by the number of likelihood scores provided. LUA mean scores can then be compared to each item's mean Affordance Score for Participation (APAR).

This score is similarly calculated from individual affordance scores provided by a separate group of category scoring participants. Both kinds of scores (LUA, APAR) can then be evaluated in light of the user's goal (action or information support) and selected demographic characteristics.

The Perceptual Domain and Participation (LUI, APER)

Research Question 2. What media and device uses do subjects report they are most likely to use on occasions when their goal is "detection of more and different classes of information" (Michaels & Carello, 1981, p. 56)?

Hypothesis 2. Users will be more likely to choose highly Personalizable media and devices over others when seeking information-about in support of informational goals.

$H2_1$: $R^2_{LUI, APER} \neq 0$

$H2_0$: $R^2_{LUI, APER} = 0$

Operationalization. In parallel to the strategy described above, News Usage Survey respondents will rate their likelihood of using each of 23 Media Forms (M1 through M23) and 23 Devices (D1 through D23) for Information goals. Mean scores for Likelihood of Usage for Information (LUI) for each item are calculated by dividing the sum of likelihood scores provided by the number of likelihood scores provided. LUI mean scores can then be compared to each item's mean Affordance Score for Personalization (APER).

This score is similarly calculated from individual affordance scores provided by a separate group of category scoring participants. Both kinds of scores (LUI, APER) can then be evaluated in light of the user's goal (action or information support) and selected demographic characteristics.

The Environmental Domain and Portability (IDU, IDK, APOR)

Research Question 3: In what ways do users' media environments constrain the likelihood of choosing Participatory, Personalizable or Portable media?

Hypothesis 3. Users who report the highest levels of knowledge (IDK) and usage (IDU) about media and device items will be more likely to choose items with higher Portability Affordance (APOR) Scores.

$H3_1$: $R^2_{IDU, IDK, APOR} \neq 0$

$H3_0$: $R^2_{IDU, IDK, APOR} = 0$

Operationalization. Richness of News Usage Survey respondents' media environments are assessed via mean scores reflecting the levels of media and device usage ("I Don't Use" or IDU responses) and knowledge ("I Don't Know" or IDK responses) they report. When respondents report an actual Likelihood Score value for an item or device, then the researcher assumes that the medium or device is available to them in the environment and that they have sufficient knowledge of the item to use it effectively. When respondents answer that "I don't have this item available to me," then the item is considered as familiar but unavailable. When respondents answer, "I don't know what this item is," then the item is considered unfamiliar as well as unavailable. Thus, respondents' mean scores for IDU and IDK can be examined alongside the same score calculations described above.

The Agent Domain (AGE, EDU)

Research Question 4: What media and device uses do subjects report they are most likely to use given subjects' differing ages and education levels?

Hypothesis 4: Users who are older and more educated will be more likely to choose media with higher Affordance Scores.

$H4_1$: $R^2_{AGE, EDU, LUA, LUI} \neq 0$

$H4_0$: $R^2_{AGE, EDU, LUA, LUI} = 0$

Operationalization. Subjects will indicate selected demographic characteristics (age, educational level, etc.) so that LUA and LUI scores can be grouped younger, older, more educated, less educated, etc. and then compared to Affordance Scores to determine whether demographic characteristics influence likelihood of using items with higher affordance scores.

CHAPTER III

METHODOLOGY

Design and Rationale

This design used multivariate correlational comparisons to identify and describe relationships between five variables – Likelihood of Usage for Action Goals (LUA), Likelihood of Usage for Information Goals (LUI), Participation Affordance (APAR), Personalization Affordance (APER) and Portability Affordance (APOR) – for 46 commonly available media and device items. Multiple regression analysis was employed to further examine and describe salient combinations to see how much of the change in dependent variables (likelihood scores) might be accounted for by change in the independent variables (affordance scores).

Likelihood of usage scores were obtained from a between-subjects design in which a convenience sample of volunteers (N=144 college students) completed an online News Usage Survey to report their likelihood of using each media and device item (N=46) in each goal condition (action and information). The three affordance scores were generated by recruiting a group of volunteers from among the researcher's colleagues (N=14) who completed an online Category Scoring Sheet to report how well they thought each of the same 46 items afforded participation, personalization and portability. To calculate the likelihood and affordance mean scores for each item, raw scores from the respective respondent groups were summed and averaged by the number of raw scores going into each sum (that is, certain disqualified values as described below were not included in mean calculations). The two groups of participants remained distinct in that no one who participated in Category Scoring also participated in the News Usage survey.

Institutional Review Board approval was obtained from the researcher's campus of enrollment and from the campus of employment (where data collection occurred) as shown in the Appendices. Both boards requested the same two revisions. First, reviewers preferred prize drawings to extra credit letters as a reward for participation. This change was implemented and incorporated in informed consent language, promotional messages and invitations to participate. Second, both boards preferred not to see email addresses collected and retained within the data set (which was originally proposed as a way to verify enrollment as a qualification for participating). Email collection was thus removed from the survey entirely and instead, the survey's final page offered the researcher's email address and encouraged participants to voluntarily send an email there (outside of the online survey environment) for entry into the prize drawing.

To address verification of eligibility, the informed consent page (page 1) of each instrument was reworded to indicate that by checking "I Agree," respondents verified themselves to be of appropriate age and educational status (which were the only qualifications for participation). Any participant who answered "under 18" for "Age" was automatically rerouted to a disqualification message and not allowed to go further with the instrument. News Usage respondents who checked the answer choice, "I am currently not enrolled in school" were likewise disqualified as were Category Scoring respondents who answered, "I am currently enrolled in school."

Convenience Sampling

College students were selected as respondents for the News Usage Survey because the associated literature reveals strong and persistent interest in students' relationship with news in particular, with mass media more generally, and with the media

forms, devices and technologies generally categorized as new or social media (Lee & Carpini, 2010, April 22-24; Mersey, 2010). Rollins (2010, June), for example, made a strong case for studying college students' news consumption habits. Half of survey respondents were found to use the Internet for daily news consumption. Interactive features were found highly appealing among students as well (Rollins, 2010, June). In that convenience sample, 588 students completed surveys and 18 agreed to participate in an additional focus group component. As in this study, all of Rollins' participants were enrolled at a single college campus in the southern United States; and like this design, that study used a convenience sampling method and did not seek to match sample characteristics to population demographics (Rollins, 2010, June).

This convenience sample (N=144) was drawn from students enrolled as of Spring 2013 at a public university in the Gulf South region of the United States. Every student is issued an official campus email address and many email announcements, newsletters, forums, social media pages, etc. are widely used by both students and the university in their communications with one another. A variety of these channels were employed to reach students campus-wide. Classroom announcements, posting on physical and electronic bulletin boards, Moodle, Facebook, etc. all provided consistent information about the study's availability and instructions on how to participate. These were updated every three to five days throughout the collection period to maximize the chance that students would see the solicitations and volunteer to complete the survey.

Collecting data over a period of several weeks (April 8-May 22, 2013) helped minimize the occurrence of confounding variables common to survey research and self-reported data (Wimmer & Dominick, 2006). If the survey were given during only one

week, for example, results might be skewed if a big event (a campus closure or midterms, for example) happened to be prominent that week (Wimmer & Dominick, 2006). Similarly, several weeks of data collection helped reduce the impact of campus or community events, holidays, power outages, major sports events, etc. on students' responses (Wimmer & Dominick, 2006). Timing of data collection near the end of the spring semester seemed to enhance participation rates, which were quite strong and spiked after every reminder message or additional online promotion was posted. Prizes including cash, a campus bookstore gift certificate and a parking spot for the upcoming fall semester may have encouraged participation as well.

Online data collection, unlike Pew's (2010, March 1) massive national telephone survey, eliminated a number of potential confounds or conditions deemed undesirable from an IRB perspective (for example, having to collect or maintain lists of identifying information such as phone numbers or email addresses, or threats to anonymity arising from the use of telephone interviewers). Participation was completely voluntary, no face-to-face interaction was required and no financial constraints (i.e., telephone or photocopy expense) were encountered.

Sample Size

The primary goal in determining sample size was to achieve a large enough group of News Usage respondents to get an adequate sense of their likelihood for using various items – and that meant generating a sample group large enough to accommodate statistical analysis, even though prediction to a broader population is not the goal. For Multiple Regression Analysis (MRA), Shavelson (1996) noted sample size guidelines of "something like 50 cases, and a general rule of thumb is that there should be at least

about 10 times as many cases (subjects) as independent variables" (p.536). In this study there are three independent variables (the three affordance scores); thus, a minimum sample of N=10x3=30 would be needed. The final sample group of N=144 qualified and complete responses exceeds the minimum nearly five times over. If one considers that the three independent variables can be doubled into six variates (when differentiated between media and device items), then the minimum sample size needed would be N=10x6=60. The sample size obtained, then, seems more than adequate even if additional demographic variables are added to analyses, especially given that exploration (not prediction) is the goal.

Instruments

This research uses original instruments closely modeled after a telephone survey conducted by the Pew Research Center as described previous chapters. Necessity rather than preference guided this decision. The Pew survey was broader than the present effort, and thus included questions not pertinent to the present point; and, it was a complex telephone survey administered by trained interviewers using multiply branching follow-up questions. Modeling instruments after Pew's line of questioning within the present study's scope resulted in instruments that were much more focused, much shorter and thus quicker to complete, and much easier to use given the online vs. telephone format.

Other than format and delivery style, measures followed Pew's instrument as an example, and closely modeled the language of theoretical concepts under study as well. Pew's (2010, March 1) list of questions also shaped the list of devices used in answer grids; however, in this study, answer choices were reduced to a single rating scale and format used consistently throughout. To select answer choices for the variable "age," for

example, respondents clicked answer buttons associated with 18-20, 21-23, 24-26, 27-29, 30+. For education level, respondents selected answer buttons indicating freshman through graduate levels, etc. The questions differ only slightly between the News Usage Survey and the Category Scoring Sheet: one asks respondents to indicate Affordance levels, while the other asks for Likelihood of Usage levels.

Both instruments were created, tested and distributed via the online platform, SurveyGizmo.com (2011). Both sought to examine between-subjects effects, as described by Taylor (2010, July 10): "between-subjects effects ask the question: do respondents differ on their score for the DV, depending on their group (males vs. females, young vs. old…etc) or depending on their score on a particular continuous IV?" and by Brown as "one where each subject experiences only *one* of the levels" (Brown, 2003, p. 4). Each is shown in the Appendix.

News Usage Survey Pretesting

After obtaining IRB approvals, several steps of pretesting were employed to ensure the highest possible quality of measurement. In the earliest phases, a group of five peers were asked to review paper copies of the instrument for clarity of instructions, question wording and answer choices; and for clarity of organization as well. This resulted in a re-ordering of questions and clarification of instructions to emphasize that the same item lists (i.e., things to be graded in response to each question) were *purposefully* repeated between questions that asked about different goal conditions. The revised survey performed well when tested within the online platform for complexity, accessibility and fatigue, with average completion time of 12 minutes. The same five peer reviewers viewed paper copies again and verified that revisions addressed their feedback.

Next, a small pretest group of qualified student participants was randomly selected and invited via email or Facebook message to participate in the study's pretest phase. Those volunteers followed the link to the online survey, completed the instrument and (if they so chose), emailed the researcher for inclusion in the prize drawing. Only one change to the instrument resulted from the pretest, addressing respondent's comment that "the same question appeared" on every page; however, no such erroneous survey document could be found in the distribution chain. Color and bold were applied to some text in the instructions to emphasize again that survey questions and response grids were purposefully *similar*, but not the same.

A test data set generated internally with the online platform's software was obtained to ensure PDF files, Excel files and SPSS files would download correctly and with appropriate column and row headings, coding values, etc. This resulted in a few minor changes to correct typographical errors within settings or controls that were invisible to participants.

News Usage Survey Procedures

With pretesting complete, data collection began using the final News Usage Survey as edited and per IRB constrains. No identifying information was collected in the survey itself, and all emails from participants who chose to enter the prize drawing were kept segregated in the researcher's dedicated email account. Questions or comments were also directed to this account. Response files were downloaded every few days during the collection period as a way of protecting access to data in the event of Internet outages, etc. Once a suitable number of respondents was obtained (N=144), the survey remained available for a short time while the researcher ascertained that the entire data file

downloaded correctly and that the data set did include only completed responses from qualified participants. After data analysis was completed, the promised prize drawing randomly selected three participants from among those who voluntarily entered the drawing via email. These students received an email notification with information on how to retrieve their prizes. All drawing entrants received a thank-you email.

Category Scoring Sheet Procedures

The Category Scoring Sheet used layouts, formatting, item lists, answer grids, online delivery methods and data retrieval procedures identical to those used for the News Usage instrument, which was highly efficient in that feedback from News Usage pretesting could be used to improve and refine the scoring instrument. Internal testing procedures within the online platform and hard-copy review of early versions by peer volunteers were also conducted in the same way.

Few differences distinguished the two instruments (aside from the differing respondent groups, of course) in their final form. Category Scoring questions and answer choices replaced the "likelihood of usage" wording from the News Usage survey, with wording that focused on items' affordance levels for participation, personalization and portability.

Because three variables were queried instead of two, and because they were asked to give ratings for both media and device items as was done in the News Usage instrument, these respondents answered six questions instead of four, and thus their participation time was slightly longer. Category scorers were not offered prize drawings or any other reward for participating, but did receive similar forms of invitations, reminders, promotions, etc.

Variables and Measures

News Usage Survey

This instrument included (in addition to demographic requests), four questions asking about users' likelihood of action uses for media; likelihood of action uses for devices; likelihood of information uses for media items; and likelihood of information uses for device items. Respondents answered by clicking buttons corresponding to the answer choices, "Not at all likely," "Somewhat likely," "Likely," "Very Likely," and "Extremely Likely."

Invisible to respondents, these answers corresponded to the coding values 1 through 5 respectively – however, these were subsequently recoded to values 0 through 4 so as to produce more accurately reflective mean scores. Higher raw scores (and subsequent means) reflect a greater likelihood of using the item for an action or information purpose.

Category Scoring Sheet

This instrument included (in addition to demographic requests), six questions asking them to rate each item for affording participation, personalization and portability. Respondents answered by clicking buttons corresponding to the answer choices, "Not at all Participatory," "Somewhat Participatory," "Participatory," "Very Participatory," "Extremely Participatory," etc.

Invisible to respondents, these answers corresponded to the coding values 1 through 5 respectively – however, these were also subsequently recoded as just described for likelihood raw score values. Higher raw scores (and subsequent means) reflect better affordance of participation, personalization or portability.

Analysis Strategy

Choosing the approach and techniques for statistical data analysis is a critical step because methods must be appropriate for the type of hypotheses and research questions being explored (Shavelson, 1996; Wimmer & Dominick, 2006). Analysis techniques must also be compatible with the type of and size of the sample; the number and kind of variables/levels; the measurement scale; the overall research goal; and underlying theory (Keyton, 2011, Shavelson, 1996; Wimmer & Dominick, 2006).

Descriptive Analysis

To provide a preliminary overview of participant responses, frequency distributions were employed as checks for missing data and provided an overview of skew, kurtosis and similar aspects relevant to sample quality (Cronk, 2004). Appropriate simple statistics for continuous data (means, standard deviations, etc.) were obtained for reporting purposes as were frequencies describing respondents' demographic characteristics. Pairwise correlations were the primary descriptive comparison method employed, focused on mean scores for likelihood and affordance for all items in both goal conditions (i.e., means and not raw scores are the values being compared). Such comparisons identified and characterized the nature of emergent patterns of coimplication between the variables under study.

Inferential Statistical Analysis

Predictions based on inference are not the goal of this study – however, it is desirable to have some method of further exploring coimplications of interest as determined by descriptive pairwise comparisons. For this reason, multiple regression analysis was an attractive option. Exploratory regression personalities (in this case, least

squares in the effect screening mode) allow simultaneous consideration of all variables together, to see if they influence one another in the ways suggested by the researcher's theoretical model shown in Chapter II. Another advantage of the technique is its ability to account for various violations of assumptions and still remain robust. Shavelson (1996) notes three primary reasons for choosing multiple regression analysis as a method for examining data: predicting future phenomena; characteristics associated with specified concepts; and testing a theory. The latter two purposes underlie this research.

CHAPTER IV

RESULTS

The analysis addresses research questions posed in Chapter II, examining relationships illustrated in the ecological framework shown in Figure 3. Thus, the framework itself is used to organize discussion of results. Ecological theory guides exploration of relationships between framework domains and their components.

Descriptive analysis first computes and compares scores for 46 media and device items for each of five variables under study: Likelihood of Usage for Action (LUA) and Likelihood of Usage for Information (LUI), both generated from raw scores collected via the News Usage Survey; and Affordance of Participation (APAR), Affordance of Personalization (APER), and Affordance of Portability (APOR), generated from raw scores collected via the Category Scoring instrument. Respondents' characteristics and likelihood preference are also descriptively summarized.

The study's variables, their labels and sources are summarized in Table 1. Also shown is the specific calculation used to compute mean scores for each item in each category. In the discussion that follows, it is generally posited that items with higher scores in certain affordance categories will be the ones most likely chosen by users in pursuit of certain goal conditions. Thus, this design employs multivariate pairwise comparisons to examine item scores for patterns of relationships between likelihood and affordance. Correlations revealed serve as a guide for deeper analysis of selected findings via multiple regression techniques.

Table 1

Variables, Sources and Mean Score Calculations

Label and Name	Source	Calculation
APAR: Affordance of Participation	Category Scoring Sheet (N=14) Participation 1 and 2	Sum of scores having values <5 divided by number of scores <5 for each of 46 items
APER: Affordance of Personalization	Category Scoring Sheet (N=14) Personalization 3 and 4	Sum of scores having values <5 divided by number of scores <5 for each of 46 items
APOR: Affordance of Portability	Category Scoring Sheet (N=14) Portability 5 and 6	Sum of scores having values <5 divided by number of scores <5 for each of 46 items
LUA: Likelihood of Usage for Action	News Usage Survey (N=144) Action Questions 1 and 2	Sum of scores having values <5 divided by number of scores <5 for each of 46 items
LUI: Likelihood of Usage for Information	News Usage Survey (N=144) Information Questions 3 and 4	Sum of scores having values <5 divided by number of scores <5 for each of 46 items
LUD: Likelihood of Usage of Devices	News Usage Survey (N=144) Action Question 2 and Information Question 4	Sum of scores having values <5 divided by number of scores <5 for each of 23 device items
LUM: Likelihood of Usage of Media	News Usage Survey (N=144) Action Question 1 and Information Question 3	Sum of scores having values <5 divided by number of scores <5 for each of 23 media items
IDU: I Don't Use this item so I can't evaluate it	News Usage Survey (N=144) All Action and Information questions	The number of scores having values of 6 or 7 divided by the number of items, for each respondent
IDK: I Don't Know what this item is so I can't evaluate it	News Usage Survey (N=144) All Action and Information questions	The number of scores having values of 6 or 7 divided by the number of items, for each respondent

Category Scoring Participants and Affordance Scores

A convenience sample (N=14) of the researcher's colleagues voluntarily provided demographic information in four categories and raw affordance scores for 23 media items and 23 device items on the degree to which each item affords Participation, Personalization and Portability. They were also asked to identify items they don't use and items that were not known to them, with the answer categories, "I don't use" or "I don't know" an item.

Eleven participants (79%) were 30 or older; three (21%) were aged 24-26. Twelve (86%) held a master's degree, doctoral degree or other terminal degree. Two respondents (14%) held a bachelor's degree. Respondents included 10 women (71%), four men (29%), 12 Caucasians (86%) and two Black/African Americans (14%).

Category scorers reported high levels of knowledge of items they were asked to score, as indicated by the number of times respondents checked off the answer choice, "I don't know what this item is." Only four respondents used this answer code; two of them (N=14, 14%) reported a single item unknown, for a knowledge score of 97.8%; one (N=14, 7%) reported two items unknown for a knowledge score of 96.5%, and one (N=14, 7%) reported three items unknown for a knowledge score of 93%. Thus, 10 of the respondents (71%) earned a perfect score for knowledge, namely, zero instances of "I Don't Know" reported across all 46 items. The average knowledge score across all 14 participants was 92%.

Three respondents (N=14, 21%) reported perfect usage scores, that is, no instances of "I Don't Use This Item." Three respondents (N=14, 21%) described only one item as unused, for a usage score of 97.8 percent; four (N=14, 28.5%) described two

items as unused, for a usage score of 95.6%; two respondents (N=14, 14%) identified four items as unused, for a usage score of 91%. Two respondents (N=14, 14%) reported very low usage – one identified 17 of the 46 items as unused, yielding a usage score of 63%. The other listed 14 of the 46 as unused for a usage score of 69.5%. Thus, 12 of the 14 Category Scorers (85.7%) earned a usage score above 90%. The average usage score across all 14 Category Scorers was 91.1%.

The scoring group's overall knowledge, usage, education level and age all bode well for the quality of mean affordance scores generated from this group's item rankings. Results from a very small convenience sample such as this one cannot be generalized to any broader group (which was not the researcher's goal in any case); and, these respondents are overwhelmingly female and Caucasian and therefore less diverse in those aspects than the group from which volunteers were recruited. Yet, mean affordance scores resulting from their ratings should offer greater confidence than arbitrary ratings assigned by the researcher would have provided. Figure 4 displays the mean affordance scores derived from this group's ratings of each media and device item, with item type designated by 0 for Media and 1 for Devices. An identification number is also assigned to each item and appears in the second column.

News Usage Survey Participants and Likelihood Scores

A convenience sample of N=144 volunteers, drawn from students aged 18 and older and enrolled at the researcher's university of employment as of the Spring 2013 semester, provided demographic information in five categories. They also rated their likelihood of using each of the same 46 media and device items rated by category scorers, this time in two different cases – for action goals and for informational goals. News

Usage respondents had no knowledge of the Category Scoring process and did not know items had been scored separately for affordance levels.

Item Name	Item #	Item Type 0=Med 1=Dev	Mean APAR Score	Mean APER Score	Mean APOR Score
Broadcast radio news	1	0	1.1429	0.4286	1.5000
Broadcast television news	2	0	0.9286	0.2143	0.8462
Cable/Satellite television news	3	0	1.0714	0.3571	0.7692
E-mail	4	0	3.4286	3.1429	3.2857
Facebook or Myspace	5	0	3.4615	3.2308	3.3077
Flickr or PhotoBucket	6	0	2.5714	2.6667	2.8333
Foursquare	7	0	3.2500	2.3333	3.1667
Instant messages or chat rooms	8	0	3.1667	2.7692	3.0000
Internet radio news	9	0	0.6000	1.5000	2.1818
Internet search engines	10	0	2.7143	2.7857	3.1429
News blogs online	11	0	2.7143	2.0000	2.6923
Online books	12	0	1.2727	0.7273	2.5833
Online forums or message boards	13	0	3.3571	2.3846	3.0769
Online news magazines	14	0	2.0000	1.1538	2.3846
Online newspapers	15	0	2.1429	1.2143	2.3571
Personalized home web page	16	0	2.7273	3.2857	2.5833
Printed books	17	0	0.5000	0.0000	2.4286
Printed news magazines	18	0	1.2500	0.0714	2.1667
Printed newspapers	19	0	1.1429	0.0714	2.4286
Satellite radio news	20	0	0.7500	1.2500	1.9091
TV News Channel web pages	21	0	1.8571	1.1429	1.9286
Twitter	22	0	3.3636	2.8000	3.2000
User-generated news online	23	0	2.5000	2.2500	2.5833
Basic cellular telephone, calling, texting	24	1	2.5385	1.6923	3.5000
Cable or satellite Internet connection	25	1	1.9231	1.3571	1.0000
Desktop computer	26	1	2.8333	2.7500	0.4167
Dial-up Internet connection	27	1	1.0833	1.0909	0.5833
Digital or High-Definition Television Set	28	1	1.1538	0.6667	0.0714
Feature cellular phone, basics plus Internet	29	1	2.9231	2.6154	3.2308
Hand-held e-reader or tablet device	30	1	1.9286	2.0000	3.2857
Internet cellular phone service	31	1	2.7143	2.0000	3.3571
Land line telephone service	32	1	1.7273	0.7273	0.0833
Laptop computer	33	1	3.0714	2.9286	3.0714
Portable movie viewing device	34	1	1.2857	1.5385	2.7692
Portable music listening device	35	1	1.4286	1.9286	3.2143
Smart phone, iPhone, Android, Blackberry	36	1	3.4286	3.2857	3.6429
Still camera	37	1	1.7857	1.5714	3.2857
Television set with antenna	38	1	0.1667	0.2308	0.0000
Television set with basic cable	39	1	0.4545	0.3846	0.0000
Television set with premium cable	40	1	0.8571	0.9286	0.0714
Television set with satellite service	41	1	0.8182	1.0833	0.3077
Video camera	42	1	2.0714	1.6429	3.1538
Video or DVD playback device	43	1	1.4286	1.4286	0.7143
Video or DVD recording device	44	1	1.7857	1.5714	0.8571
Wired network	45	1	1.8182	1.5000	0.2500
Wireless network	46	1	1.9231	2.1429	2.5714

Figure 4. Participants rated the items listed in the left-most column for the degree to which each affords participation, personalization and portability. The Item Type (0=Media, 1=Device), Item Number and affordance mean scores (APAR, APER and APOR) are shown.

Fifty-three percent (n=76) of News Usage respondents were between the ages of 18 and 20 inclusive. Another 29% (n=42) were aged 21-23 inclusive; 11% (n=16) were aged 24-26 inclusive; 1% (n=1) was aged 27-29 inclusive; and 6% (n=9) were 30 or older. The sample was made up of 19% freshmen (n=28), 27% sophomores (n=23), 23% juniors n=34), 21% seniors (n=31) and 8% graduate students (n=12). In terms of home environment, 18.8% (n=27) reported living in a dormitory or other on-campus housing; 54.5% (n=78) reported living in a house or apartment off-campus but not with one's parents/family; and 26.5% (n=38) reported living with parents/family. Respondents were 78% female (n=112), 22% male (n=32), 72% Caucasian (n=104), 16% Black/African American (n=24), 4% Other/Multiracial (n=6), 2% (n=3) Asian, and 2% (n=3) Native American. Two respondents or 1.3% chose "Decline to Answer."

This sample group also identified unused or unfamiliar items with the answer categories, "I don't use" or "I don't know." A majority, 65% (n=94) reported perfect usage scores, that is, no instances of "I don't use" in their responses. Among the remaining respondents (n=50), 9 (18%) identified only one item as unused, for a usage score of 99%; 7 (14%) identified 2 items as unused for a usage score of 98.6%; 3 (6%) identified three items as unused, for a knowledge score of 97.9 percent; and 2 (4%) identified four items as unused, for a knowledge score of 97.2%; three (6%) reported 11 items unused, for a knowledge score of 92%; and 4 (8%) reported 12 items unused for a knowledge score of 91.6%. Six respondents reported either 14, 15, 20, 23, 24, 25, 27, 28 or 33 items used, and thus had knowledge scores between 90% and 77% respectively. The lowest usage score was 72.9% for one respondent who identified 39 items as unused.

Knowledge scores were higher over all respondents (N=144) with 111 reporting perfect knowledge scores, that is, no instances of "I Don't Know" among their answers. Seven reported only one item as unknown, netting a knowledge score of 99%; 12 reported two items as unknown, for a knowledge score of 98.6%; 3 reported three items as unknown, for a knowledge score of 97.9%; 6 reported four items as unknown for a knowledge score of 97.2%; one reported six items as unknown for a knowledge score of 95.8%; two reported eight items as unknown for a knowledge score of 94%; and one reported 14 items as unknown, for a knowledge score of 90.2%

This respondent group presented very high levels of knowledge and usage. Its demographic profile is nicely balanced across education and home environment but is more homogeneous than the group from which these volunteers were drawn in terms of race and gender. Most respondents were of traditional college ages (i.e., 18-24).

Figure 5 shows the 46 items scored by these respondents, listed alphabetically by name and sorted by Item Type (i.e., 0=Media, 1=Device). Each item's mean Likelihood of Usage Scores for Action (LUA) and for Information (LUI) are also shown. This sample group is considerably larger than that drawn for category scoring, however, predictions to larger groups are again not appropriate because of the non-random sampling methods used; and because predictions were not the research goal in any case. Rather, the goal is to estimate how likely these users are to choose certain media or device items in support of their action or informational goals. In light of this goal, mean likelihood scores calculated from ratings of such highly knowledgeable and experienced respondents should offer an appropriate starting point for further exploration.

Item Name	0=Med 1=Dev	LUA	LUI
Broadcast radio news:A	0	1.4604	1.5390
Broadcast television nev	0	1.8759	1.8162
Cable/Satellite televisio	0	1.9559	2.0746
E-mail:AM/IM	0	2.2357	1.9500
Facebook or Myspace:A	0	2.3188	2.2143
Flickr or PhotoBucket:A	0	0.5259	0.5299
Foursquare:AM/IM	0	0.4034	0.4833
Instant messages or cha	0	0.8500	0.7943
Internet radio news:AM	0	1.3262	1.4857
Internet search engines:	0	3.1544	3.0647
News blogs online:AM/	0	1.4929	1.5000
Online books:AM/IM	0	1.8392	2.0143
Online forums or messa	0	1.2071	1.1871
Online news magazines	0	1.9577	2.0775
Online newspapers:AM	0	2.0567	2.1329
Personalized home web	0	2.2263	2.1429
Printed books:AM/IM	0	1.7214	1.7972
Printed news magazines	0	1.1449	1.2254
Printed newspapers:AM	0	1.0567	1.3380
Satellite radio news:AM	0	1.2385	1.3308
TV News Channel web	0	1.9286	2.0634
Twitter:AM/IM	0	1.4783	1.5035
User-generated news on	0	1.7372	1.5915
Basic cellular telephone	1	2.5036	2.0000
Cable or satellite Interne	1	2.7111	2.4599
Desktop computer:AD	1	2.3182	2.3636
Dial-up Internet connec	1	0.3361	0.5680
Digital or High-Definiti	1	2.2258	1.8583
Feature cellular phone,	1	2.4252	2.1450
Hand-held e-reader or ta	1	2.1085	2.0672
Internet cellular phone s	1	3.0853	2.8281
Land line telephone serv	1	1.0161	0.9200
Laptop computer:AD	1	3.3382	3.2000
Portable movie viewing	1	1.9008	1.6866
Portable music listening	1	2.5357	1.9149
Smart phone, such as an	1	3.4615	3.2015
Still camera:AD	1	2.0000	1.4706
Television set with ante	1	0.2381	0.3934
Television set with basi	1	1.4889	1.4135
Television set with pren	1	2.0781	1.8080
Television set with satel	1	1.7097	1.7302
Video camera:AD	1	1.9407	1.4511
Video or DVD playback	1	2.0222	1.7226
Video or DVD recordin	1	1.8615	1.6136
Wired network:AD	1	1.7951	1.8320
Wireless network:AD	1	3.3381	2.9858

Figure 5. News Usage Survey respondents scored the same 46 items (shown here sorted by Item Type 0=Media, 1=Device), this time to produce the Likelihood of Usage Scores for Action (LUA) and for Information (LUI) mean scores shown.

Item Name	0 = Med 1 = Dev	LUA	Item Name	0 = Med 1 = Dev	LUI	Item Name	0 = Med 1 = Dev	APAR	Item Name	0 = Med 1 = Dev	APER	Item Name	0 = Med 1 = Dev	APOR
Smart phone, such as an iP	1	3.4615	Smart phone, s	1	3.2015	Facebook or M	0	3.4615	Smart phone, s	1	3.2857	Smart phone, s	1	3.6429
Laptop computer:AD	1	3.3382	Laptop comput	1	3.2000	Smart phone, s	1	3.4286	Personalized h	0	3.2857	Basic cellular t	1	3.5000
Wireless network:AD	1	3.3381	Internet search	0	3.0647	E-mail:AM/IM	0	3.4286	Facebook or M	0	3.2308	Internet cellula	1	3.3571
Internet search engines:AM	0	3.1544	Wireless netwo	1	2.9858	Twitter:AM/IM	0	3.3636	E-mail:AM/IM	0	3.1429	Facebook or M	0	3.3077
Internet cellular phone ser	1	3.0853	Internet cellula	1	2.8281	Online forums	0	3.3571	Laptop comput	1	2.9286	E-mail:AM/IM	0	3.2857
Cable or satellite Internet	1	2.7111	Cable or satelli	1	2.4599	Foursquare:AM	0	3.2500	Twitter:AM/IM	0	2.8000	Hand-held e-re	1	3.2857
Portable music listening d	1	2.5357	Desktop compu	1	2.3636	Instant messag	0	3.1667	Internet search	0	2.7857	Still camera:Al	1	3.2857
Basic cellular telephone, c	1	2.5036	Facebook or M	0	2.2143	Laptop comput	1	3.0714	Instant messag	0	2.7692	Feature cellula	1	3.2308
Feature cellular phone, bas	1	2.4252	Feature cellula	1	2.1450	Feature cellula	1	2.9231	Desktop compu	1	2.7500	Portable music	1	3.2143
Facebook or Myspace:AM	0	2.3188	Personalized h	0	2.1429	Desktop compu	1	2.8333	Flickr or Photo	0	2.6667	Twitter:AM/IM	0	3.2000
Desktop computer:AD	1	2.3182	Online newspa	0	2.1329	Personalized h	0	2.7273	Feature cellula	1	2.6154	Foursquare:AM	0	3.1667
E-mail:AM/IM	0	2.2357	Online news m	0	2.0775	Internet cellula	1	2.7143	Online forums	0	2.3846	Video camera:A	1	3.1538
Personalized home web pa	0	2.2263	Cable/Satellite	0	2.0746	Internet search	0	2.7143	Foursquare:AM	0	2.3333	Internet search	0	3.1429
Digital or High-Definition	1	2.2258	Hand-held e-re	1	2.0672	News blogs on	0	2.7143	User-generated	0	2.2500	Online forums	0	3.0769
Hand-held e-reader or tabl	1	2.1085	TV News Chan	0	2.0634	Flickr or Photo	0	2.5714	Wireless netwo	1	2.1429	Laptop comput	1	3.0714
Television set with premiu	1	2.0781	Online books:A	0	2.0143	Basic cellular t	1	2.5385	Internet cellula	1	2.0000	Instant messag	0	3.0000
Online newspapers:AM/IM	0	2.0567	Basic cellular t	1	2.0000	User-generated	0	2.5000	Hand-held e-re	1	2.0000	Flickr or Photo	0	2.8333
Video or DVD playback d	1	2.0222	E-mail:AM/IM	0	1.9500	Online newspa	0	2.1429	News blogs on	0	2.0000	Portable movie	1	2.7692
Still camera:AD	1	2.0000	Portable music	1	1.9149	Video camera:A	1	2.0714	Portable music	1	1.9286	News blogs on	0	2.6923
Online news magazines:A	0	1.9577	Digital or High	1	1.8583	Online news m	0	2.0000	Basic cellular t	1	1.6923	Personalized h	0	2.5833
Cable/Satellite television n	0	1.9559	Wired network	1	1.8320	Hand-held e-re	1	1.9286	Video camera:A	1	1.6429	Online books:A	0	2.5833
Video camera:AD	1	1.9407	Broadcast telev	0	1.8162	Wireless netwo	1	1.9231	Still camera:Al	1	1.5714	User-generated	0	2.5833
TV News Channel web pa	0	1.9286	Television set v	1	1.8080	Cable or satelli	1	1.9231	Video or DVD	1	1.5714	Wireless netwo	1	2.5714
Portable movie viewing de	1	1.9008	Printed books:A	0	1.7972	TV News Chan	0	1.8571	Portable movie	1	1.5385	Printed books:A	0	2.4286
Broadcast television news	0	1.8759	Television set v	1	1.7302	Wired network	1	1.8182	Wired network	1	1.5000	Printed newspa	0	2.4286
Video or DVD recording d	1	1.8615	Video or DVD	1	1.7226	Still camera:Al	1	1.7857	Internet radio n	0	1.5000	Online news m	0	2.3846
Online books:AM/IM	0	1.8392	Portable movie	1	1.6866	Video or DVD	1	1.7857	Video or DVD	1	1.4286	Online newspa	0	2.3571
Wired network:AD	1	1.7951	Video or DVD	1	1.6136	Land line telep	1	1.7273	Cable or satelli	1	1.3571	Internet radio n	0	2.1818
User-generated news onlin	0	1.7372	User-generated	0	1.5915	Portable music	1	1.4286	Satellite radio	0	1.2500	Printed news m	0	2.1667
Printed books:AM/IM	0	1.7214	Broadcast radio	0	1.5390	Video or DVD	1	1.4286	Online newspa	0	1.2143	TV News Chan	0	1.9286
Television set with satellit	1	1.7097	Twitter:AM/IM	0	1.5035	Portable movie	1	1.2857	Online news m	0	1.1538	Satellite radio	0	1.9091
News blogs online:AM/IM	0	1.4929	News blogs on	0	1.5000	Online books:A	0	1.2727	TV News Chan	0	1.1429	Broadcast radio	0	1.5000
Television set with basic c	1	1.4889	Internet radio n	0	1.4857	Printed news n	0	1.2500	Dial-up Interne	1	1.0909	Cable or satelli	1	1.0000
Twitter:AM/IM	0	1.4783	Still camera:Al	1	1.4706	Digital or High	1	1.1538	Television set v	1	1.0833	Video or DVD	1	0.8571
Broadcast radio news:AM	0	1.4604	Video camera:A	1	1.4511	Printed newspa	0	1.1429	Television set v	1	0.9286	Broadcast telev	0	0.8462
Internet radio news:AM/IM	0	1.3262	Television set v	1	1.4135	Broadcast radio	0	1.1429	Online books:A	0	0.7273	Cable/Satellite	0	0.7692
Satellite radio news:AM/IM	0	1.2385	Printed newspa	0	1.3380	Dial-up Interne	1	1.0833	Land line telep	1	0.7273	Video or DVD	1	0.7143
Online forums or message	0	1.2071	Satellite radio	0	1.3308	Cable/Satellite	0	1.0714	Digital or High	1	0.6667	Dial-up Interne	1	0.5833
Printed news magazines:A	0	1.1449	Printed news m	0	1.2254	Broadcast telev	0	0.9286	Broadcast radio	0	0.4286	Desktop compu	1	0.4167
Printed newspapers:AM/IM	0	1.0567	Online forums	0	1.1871	Television set v	1	0.8571	Television set v	1	0.3846	Television set v	1	0.3077
Land line telephone servic	1	1.0161	Land line telep	1	0.9200	Television set v	1	0.8182	Cable/Satellite	0	0.3571	Wired network	1	0.2500
Instant messages or chat ro	0	0.8500	Instant messag	0	0.7943	Satellite radio	0	0.7500	Television set v	1	0.2308	Land line telep	1	0.0833
Flickr or PhotoBucket:AM	0	0.5259	Dial-up Interne	1	0.5680	Internet radio n	0	0.6000	Broadcast telev	0	0.2143	Digital or High	1	0.0714
Foursquare:AM/IM	0	0.4034	Flickr or Photo	0	0.5299	Printed books:A	0	0.5000	Printed news m	0	0.0714	Television set v	1	0.0714
Dial-up Internet connectio	1	0.3361	Foursquare:AM	0	0.4833	Television set v	1	0.4545	Printed newspa	0	0.0714	Television set v	1	0.0000
Television set with antenn	1	0.2381	Television set v	1	0.3934	Television set v	1	0.1667	Printed books:A	0	0.0000	Television set v	1	0.0000

Figure 6. In this comparison chart, five sortings of an identical list of 46 items indicate descending score order for LUA, LUI, APAR, APER, and APOR. The item type (media or device) is also indicated.

Figure 6 displays the list of items by name and number, this time repeated in five descending sorts (one for each score category as shaded in yellow). Thus, one can see and compare how media and device items stack up in each score category. The horizontal line appearing at the vertical center of the list indicates the midpoint or median score and its associated item names and types. Notably, this list can be further sorted by item type, revealing comparative rankings of media items only vs. device items only.

Effects of Affordance Value and Agent Demographics on Likelihood of Usage

One hypothesis and associated research question was posed for each of the four domains in the framework as explained in Chapter II. The first two examined whether users with action or informational goals are more likely to choose items with high affordance scores in specific affordance categories. The third explored the impact of knowledge, usage and portability. The fourth hypothesis explored the impact of age, education and home environment on likelihood of usage.

The Action Domain and Participation (LUA, APAR)

Hypothesis 1 posited that users would be more likely to choose highly participatory media over others when seeking information-for in support of action goals. To make this determination, the associated research question asked what media and devices users are most likely to employ in pursuit of action goals as shown in Figure 7.

Pairwise multivariate correlations between LUA scores and all three Affordance Score categories showed that for all 46 items together (that is, without sorting the item list to differentiate Media and Devices), LUA and APAR were weakly correlated ($r=.313$, $p=.0342$); however, LUA and APER showed a slightly stronger correlation ($r=.376$, $p=.010$). The interaction effect between APOR and LUA ($r=.290$, $p=.0502$) failed to

achieve significance when alpha = .05. The most highly significant correlations arose between affordance score categories themselves, APER and APAR (r=.873, p<.0001), APOR and APAR (r=.639, p<.0001) and APOR and APER (.595, p<.0001).

LUA All Items Pairwise Correlations (N=46 Items)

Variable	By Variable	Correlation	Count	Lower 95%	Upper 95%	Signif Prob
APAR	LUA	0.3130	46	0.0250	0.5531	0.0342*
APER	LUA	0.3762	46	0.0964	0.6009	0.0100*
APER	APAR	0.8736	46	0.7816	0.9285	<.0001*
APOR	LUA	0.2904	46	0.0002	0.5356	0.0502
APOR	APAR	0.6391	46	0.4283	0.7840	<.0001*
APOR	APER	0.5951	46	0.3684	0.7550	<.0001*

LUA Media Items Pairwise Correlations

Variable	By Variable	Correlation	Count	Lower 95%	Upper 95%	Signif Prob
APAR	LUA	0.0426	23	-0.3762	0.4470	0.8469
APER	LUA	0.1193	23	-0.3080	0.5066	0.5877
APER	APAR	0.8768	23	0.7276	0.9468	<.0001*
APOR	LUA	-0.0440	23	-0.4481	0.3750	0.8420
APOR	APAR	0.7704	23	0.5249	0.8976	<.0001*
APOR	APER	0.7479	23	0.4853	0.8867	<.0001*

LUA Device Items Pairwise Correlations

Variable	By Variable	Correlation	Count	Lower 95%	Upper 95%	Signif Prob
APAR	LUA	0.7223	23	0.4415	0.8742	<.0001*
APER	LUA	0.7525	23	0.4933	0.8890	<.0001*
APER	APAR	0.9002	23	0.7759	0.9572	<.0001*
APOR	LUA	0.6141	23	0.2703	0.8190	0.0018*
APOR	APAR	0.6478	23	0.3214	0.8366	0.0008*
APOR	APER	0.6907	23	0.3894	0.8585	0.0003*

Note: * p<=.05

Figure 7. Pairwise comparisons revealed correlations between LUA scores and all categories of Affordance scores, first for the unsorted item list of N=46; then for media items only (N=23); and then for device items only (N=23).

When pairwise correlations for LUA by all Affordance scores are sorted by item type however, LUA scores for media devices themselves were only just barely correlated

with APAR (r=.0426, p=.849), failing to achieve significance. For device items under the same sorting strategy, the correlation between LUA and APAR was stronger (r=.723, p<.0001) than for media items or the overall unsorted comparison. Pairwise correlation between APER and LUA was even higher, r=.752, p<.0001. The interaction between APOR and LUA was also significant but with a weaker correlation (r=.614, p=.0018). Interaction between affordance scores for media items were: APER and APAR (r=.876, p<.0001), APOR and APAR (r=.770, p<.0001) and APOR and APER (r=.747, p<.0001). For device items, they were APER and APAR, r=.900, p<.0001; APOR and APAR, .647, p=.0008; and APOR and APER, .690, p=.0003.

Thus, Hypothesis 1 is partially supported. Users were not more likely to choose highly participatory items in particular over others when seeking action. Rather, they were slightly more likely to choose items high in personalization affordance. For devices, however, participation affordance was more strongly correlated with likelihood than personalization affordance.

The Perceptual Domain and Participation (LUI, APER)

The second research question asked what media and device items subjects reported they are most likely to use when their goal is informational. Hypothesis 2 posited that users would be more likely to choose highly personalizable media over others in this goal condition. Pairwise multivariate comparisons between LUI scores and affordance scores again addressed the unsorted list of items (N=46) and the sorted lists of media only and device only (N=23 for each) and are shown in Figure 8.

The first set of comparisons over all 46 items indicated a significant correlation between LUI and APER (r=.330, p=.0248), which is slightly stronger than the correlation

found above for LUA and APER. LUI was weakly correlated with APAR (r=.285, p=.053) and with APOR (r=.253, p=.089) but neither of those findings achieved significance. When sorted by item type, LUI scores for media items (N=23) had a slight negative correlation with APER (r= -.019, p=.93), which was not statistically significant. Remaining correlations between LUI and affordance scores followed the same trend (LUI and APAR, r= -.088, p=.428; LUI and APOR, r = -.128, p=.559).

LUI All Item Pairwise Correlations (N=46)

Variable	by Variable	Correlation	Count	Lower 95%	Upper 95%	Signif Prob
APAR	LUI	0.2857	46	-0.0051	0.5319	0.0543
APER	LUI	0.3306	46	0.0445	0.5665	0.0248*
APER	APAR	0.8736	46	0.7816	0.9285	<.0001*
APOR	LUI	0.2536	46	-0.0396	0.5066	0.0890
APOR	APAR	0.6391	46	0.4283	0.7840	<.0001*
APOR	APER	0.5951	46	0.3684	0.7550	<.0001*

LUI Media Item Pairwise Correlations (N=23)

Variable	by Variable	Correlation	Count	Lower 95%	Upper 95%	Signif Prob
APAR	LUI	-0.0880	23	-0.4827	0.3364	0.6898
APER	LUI	-0.0194	23	-0.4282	0.3960	0.9300
APER	APAR	0.8768	23	0.7276	0.9468	<.0001*
APOR	LUI	-0.1283	23	-0.5133	0.2998	0.5597
APOR	APAR	0.7704	23	0.5249	0.8976	<.0001*
APOR	APER	0.7479	23	0.4853	0.8867	<.0001*

LUI Device Item Pairwise Correlations (N=23)

Variable	by Variable	Correlation	Count	Lower 95%	Upper 95%	Signif Prob
APAR	LUI	0.7385	23	0.4690	0.8821	<.0001*
APER	LUI	0.7851	23	0.5514	0.9046	<.0001*
APER	APAR	0.9002	23	0.7759	0.9572	<.0001*
APOR	LUI	0.5236	23	0.1421	0.7697	0.0103*
APOR	APAR	0.6478	23	0.3214	0.8366	0.0008*
APOR	APER	0.6907	23	0.3894	0.8585	0.0003*

Note: * p<=.05

Figure 8. This figure displays pairwise multivariate comparisons between LUI scores and affordance scores first for the unsorted list of items (N=46) and then for media items only and for device items only (N=23 for each).

LUI scores for device items (N=23), however, again told a different story. LUI scores were correlated with APER (r=.785, p<.0001) and with APAR (r=.738, p<.0001) scores; and more moderately correlated with APOR scores (r=.532, p=.0103). Among affordance score categories, APER and APAR were highly correlated for devices (r=.900, p<.0001), more so than for any other comparison condition. APOR and APAR were moderately correlated (r=.647, p=.0008), as were APOR and APER (r=.690, p=.0003). Thus, the pattern of correlations for affordance scores in relation to LUI device scores, is different from that observe for LUA device scores.

Based on these findings, Hypothesis 2 is supported: users are more likely to choose highly personalizable items over others when seeking information. This was also the case when considering only device items; no significant correlations were found between affordance scores and APER for media items in particular. The correlation between LUI and APER for all items (N=46) was slightly stronger than for that between LUA and APAR over all items. For media items alone, correlations between LUI and APER were lower than those between LUA and APAR. For device items, correlations were more similar across the two likelihood categories.

The Environmental Domain and Portability (IDU, IDK, APOR)

Research Question 3 asked what knowledge level, usage level and degree of portability users would report. Hypothesis 3 posited that users who reported the highest levels of knowledge (IDK) and usage (IDU) would be more likely to choose devices with higher Portability Affordance (APOR) Scores. As previously noted, a broad majority of respondents (n=94) had perfect knowledge and usage scores (i.e., no instances of IDU or IDK reported). Among the remaining respondents (n=50), only two had usage scores less

than 90%. None of the knowledge scores fell below 90%. Thus, any comparison based on high vs. low knowledge or usage would have too few scores to evaluate on the lower end, so, an alternative approach examines the environmental domain. Knowledge and usage are recommended for future research dedicated to identifying relevant differences among key demographic groups (i.e., elderly or rural populations).

To address the role of the Environmental domain and Portability, one may inquire how portability itself might constrain choices related to other affordance scores, likelihood scores and their associated domains as displayed in Figure 9. The first three display correlations when only affordance scores are considered, across all items (N=46). All are significant ($p<.0001$); for APAR and APER, $r=.639$; for APER and APOR, $r=.595$. When sorting these comparisons by item type, correlations are stronger for media items than for the overall comparison or for device items: APAR and APOR, $r=.770$; for APER and APOR, $r=.747$. Both findings are significant ($p<.0001$). For device items, correlations are weaker and still significant, but to a lower degree. For APAR and APOR in this case, $r=.647$, $p=.0008$. For APER and APAR, $r=.690$, $p=.0003$. Thus, portability is more strongly correlated with media items than with device items, at least in the opinion of the category scorers who rated items for the affordances provided. Also summarized are APOR comparisons to LUA and LUI scores, from previous analyses. The two comparisons involving devices yielded significant correlations (APOR and LUA, $r=.614$, $p=.0018$; and APOR and LUI, $r=.523$, $p=.0103$). Media items yielded the lowest correlations for APOR. Respondents' likelihood scoring revealed a stronger relationship between devices and portability – perhaps indicating that from users' (rather than affordance scorers') view, device portability is more important than media portability.

APOR Pairwise Correlations (N=46)

Variable	By Variable	Correlation	Count	Lower 95%	Upper 95%	Signif Prob
APAR	APOR	0.6391	46	0.4283	0.7840	<.0001*
APER	APOR	0.5951	46	0.3684	0.7550	<.0001*
APER	APAR	0.8736	46	0.7816	0.9285	<.0001*

APOR Pairwise Correlations Item No 0=Media 1=Device=0

APAR	APOR	0.7704	23	0.5249	0.8976	<.0001*
APER	APOR	0.7479	23	0.4853	0.8867	<.0001*
APER	APAR	0.8768	23	0.7276	0.9468	<.0001*

APOR Pairwise Correlations Item No 0=Media 1=Device=1

APAR	APOR	0.6478	23	0.3214	0.8366	0.0008*
APER	APOR	0.6907	23	0.3894	0.8585	0.0003*
APER	APOR	0.9002	23	0.7759	0.9572	<.0001*

LUA All Items Pairwise Correlations (N=46 Items)

Variable	By Variable	Correlation	Count	Lower 95%	Upper 95%	Signif Prob
APOR	LUA	0.2904	46	0.0002	0.5356	0.0502

LUA Media Items Pairwise Correlations (N=23)

APOR	LUA	-0.0440	23	-0.4481	0.3750	0.8420

LUA Device Items Pairwise Correlations (N=23)

APOR	LUA	0.6141	23	0.2703	0.8190	0.0018*

LUI All Item Pairwise Correlations (N=46)

APOR	LUI	0.2536	46	-0.0396	0.5066	0.0890

LUI Media Item Pairwise Correlations (N=23)

APOR	LUI	-0.1283	23	-0.5133	0.2998	0.5597

LUI Device Item Pairwise Correlations (N=23)

APOR	LUI	0.5236	23	0.1421	0.7697	0.0103*

Note: * p<=.05

Figure 9. Comparisons of APOR to all other values appear to indicate that for category scorers, portability may be more associated with media items, while for users reporting likelihood, portability may be more associated with device items.

The Agent Domain (AGE, EDU)

Research Question 4: The last research question asked participants to report demographic characteristics including the two mentioned in Hypothesis 4, positing users who are older and more educated would report the greater likelihood for choosing items with higher affordance scores. To examine this question, pairwise comparisons were attempted within these demographic categories. Recall from the sample group discussion above that most News Usage respondents fell into younger age ranges, and were generally spread across all undergraduate grade levels with only a few graduate-level participants. Respondents were most evenly spread across home environment, between dormitory/on campus; house or apartment off campus; and living with parents or family. Thus, the largest groups available for comparison by demographics were all populated by freshmen aged 18-20 in all three home conditions (n=18 living in a dormitory/on-campus, n=21 living off-campus in house or apartment, and n=25 living with parents/family). Other demographic groupings were too small (n<11) for comparisons to be considered reliable. For this reason, home environment was employed as an alternative to age and education in this analysis.

Figure 10 displays such comparisons for LUI and LUA; also included are these users' likelihood of using media items overall (LUM), and likelihood of using device items overall (LUD). For those living in dorms, three correlations were significant: LUI and LUA, r=.811, p<.0001; LUM and LUA, r=.645, p=.0038; and LUM and LUI, r=.728, p=.0006. For those living off-campus but not with parents or family, four significant correlations emerged: LUI and LUA, r=.593, p=.0046; LUM and LUA, r=.834, p<.0001; LUM and LUI, r=.769, p<.0001; and LUD and LUA, r=.692, p=.0005. For those living

with parents/family, five significant correlations emerged: LUI and LUA, .865, p<.0001; LUM and LUA, r=.860, p<.0001; LUM and LUI, r=.879, p<.0001; LUD and LUA, r=.544, p=.0049; and LUD and LUI, r=.476, p=.016.

Pairwise Correlations: LUA, LUI by A1 Age=0, A2 Education=0, A3 Home= Dorm

Variable	by Variable	Correlation	Count	Lower 95%	Upper 95%	Signif Prob	Plot Corr
LUI	LUA	0.8119	18	0.5556	0.9273	<.0001*	
LMU	LUA	0.6457	18	0.2560	0.8548	0.0038*	
LMU	LUI	0.7281	18	0.3958	0.8918	0.0006*	
LDU	LUA	0.4448	18	-0.0279	0.7549	0.0644	
LDU	LUI	0.2492	18	-0.2464	0.6414	0.3187	
LDU	LMU	-0.2789	18	-0.6598	0.2161	0.2625	

Pairwise Correlations: LUA, LUI by A1 Age=0, A2 Education=0, A3 Home=Off-Campus

Variable	by Variable	Correlation	Count	Lower 95%	Upper 95%	Signif Prob	Plot Corr
LUI	LUA	0.5930	21	0.2168	0.8158	0.0046*	
LMU	LUA	0.8347	21	0.6301	0.9309	<.0001*	
LMU	LUI	0.7692	21	0.5054	0.9016	<.0001*	
LDU	LUA	0.6928	21	0.3726	0.8656	0.0005*	
LDU	LUI	0.3298	21	-0.1188	0.6666	0.1442	
LDU	LMU	0.3891	21	-0.0512	0.7027	0.0813	

Pairwise Correlations: LUA, LUI by A1 Age=0, A2 Education=0, A3 Home=Parents/Family

Variable	by Variable	Correlation	Count	Lower 95%	Upper 95%	Signif Prob	Plot Corr
LUI	LUA	0.8654	25	0.7146	0.9393	<.0001*	
LMU	LUA	0.8601	25	0.7043	0.9368	<.0001*	
LMU	LUI	0.8797	25	0.7427	0.9460	<.0001*	
LDU	LUA	0.5443	25	0.1900	0.7731	0.0049*	
LDU	LUI	0.4767	25	0.1005	0.7337	0.0160*	
LDU	LMU	0.2871	25	-0.1219	0.6127	0.1641	

Figure 10. Correlations are shown for News Usage respondents aged 18-20 who are freshmen, in the "home" conditions of dormitory, off-campus house or apartment, and living with parents/family.

These results indicate the importance of one's living environment, with the dormitory setting being perhaps the most restrictive (i.e., fewer and smaller significant correlations); media items appeared of greater interest to users than device items for both action and information goals. Strong correlation between LUI and LUA hints that the same items used for action are also often preferred for informational goals. This was not true among off-campus residents, for whom the correlation between action and information likelihood was weaker. Devices also emerged here as a significant designation. Thus, the off-campus setting may offer users greater degrees of freedom (fewer external limitations of dormitories or family settings). However, it would almost certainly be less supportive in terms of availability, because those who live off-campus would presumably need the financial resources to provide for themselves the environmental components commonly found in dormitories or at the family home. It may be for this reason that the off-campus domicile revealed a larger number of significant correlations (four instead of three), while the correlations themselves were weaker. The parents/family environment generated five significant correlations (this time, including devices in particular for both information and action likelihood) that were generally stronger and more highly significant than those in other domicile conditions. Thus, home environment does have significant influence for respondents in the youngest age group (18-20) and the lowest educational group (freshmen).

Graphical Representations

Results can be summarized graphically by producing overlay plots as shown in Figure 11. The first set displays likelihood scores plotted by APAR, then by APER, then by APOR. Plot 1 displays LUA and LUI scores by participation affordance, and one can

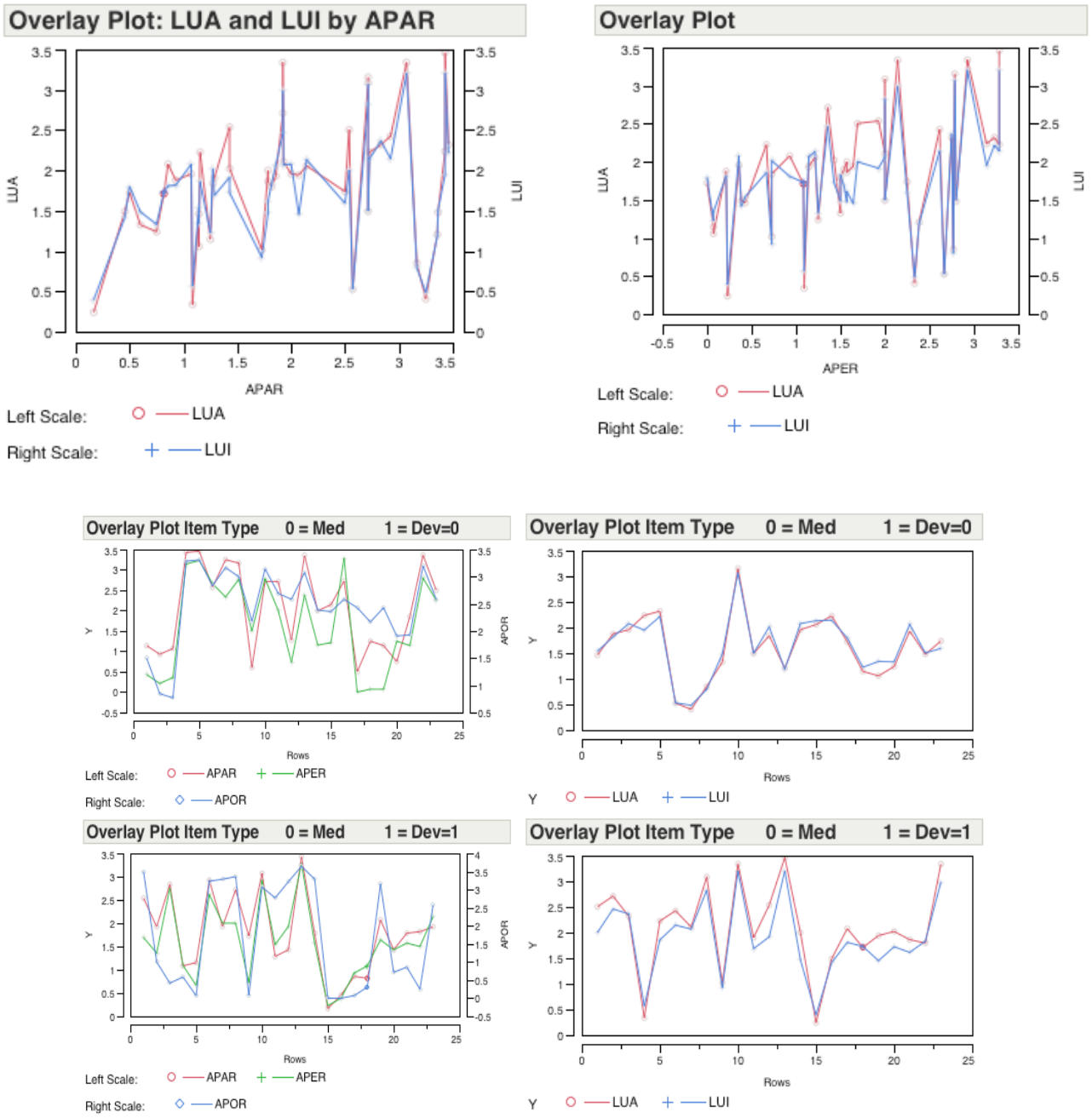

Figure 11. Overlay plots provide graphical representation of scores.

easily see how closely the two track together – perhaps indicative that in the opinion of news usage survey respondents, items chosen for action support (the red line) are also chosen often for information support, although not always to the same high degree. Plot 2 shows LUA and LUI scores by personalization affordance. Once again, the plot appears

to indicate only a small differential between the pattern of LUA scores (represented by the red line) and LUI scores (the blue line), with action scores tracking somewhat higher than their informational counterparts. Plot 3 illustrates LUA and LUI scores by portability affordance and reveals the tightest tracking of all.

The second set illustrates affordance and likelihood scores over the 23 media items and 23 device items separately. Plot 1 shows how scores track together for media items. It appears to indicate that when a media item's portability score is low, its participation and personalization scores also take a dip. For devices (Plot 2), portability scores appeared less influential –portability scores near the center of the plot are quite high, when participation and personalization scores are low. Toward the bottom range of the axis, scores for all variables converge more closely. The final plots display likelihood scores for media and devices.

To further examine significant correlations revealed by pairwise comparison, two sets of regression models were created – one to examine likelihood of usage for action goals and another to examine likelihood of usage for information goals using the backward elimination method so models could be reduced to include only factors making a significant contribution. Addressing Hypothesis 1, specifying Y=LUA, the overall model's significant predictors accounted for 94.1 percent of variance in LUA with LUI and interactions between APAR and APER and APER and APOR contributing (R^2=.941, $F(3,46)=226.179$, $p<.0001$).

When sorted by Item Type = Media, the combination of significant predictor variables in the reduced equation (LUI and APER) accounted for 98 percent of the variance in LUA (R^2=.98, $F(2,23)=504.793$, $p<.0001$). For Device items, the overall

model revealed LUI and APOR accounted for 95.2 percent of variance in LUA, (R^2=.952, F(2,23)=202.356, p<.0001).

Least Squares Effect Screening: Y=LUA

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	3	25.013237	8.33775	226.1797
Error	42	1.548261	0.03686	**Prob > F**
C. Total	45	26.561498		<.0001*

Parameter Estimates

Term		Estimate	Std Error	t Ratio	Prob>|t|
Intercept		-0.067569	0.086513	-0.78	0.4392
LUI		1.1094465	0.042746	25.95	<.0001*
(APAR-1.93613)*(APER-1.62708)		-0.118646	0.044321	-2.68	0.0106*
(APER-1.62708)*(APOR-2.08247)		0.0829394	0.036932	2.25	0.0300*

Figure 12. Regression modeling for Y=LUA.

Least Squares Effect Screening: Y=LUI
Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	3	19.117520	6.37251	239.2801
Error	42	1.118544	0.02663	**Prob > F**
C. Total	45	20.236064		<.0001*

Parameter Estimates

Term		Estimate	Std Error	t Ratio	Prob>|t|
Intercept		0.2329847	0.064375	3.62	0.0008*
LUA		0.8218011	0.032724	25.11	<.0001*
(LUA-1.86153)*(APAR-1.93613)		0.1877934	0.057694	3.26	0.0022*
(LUA-1.86153)* (APOR-2.08247)		-0.125279	0.048603	-2.58	0.0135*

Figure 13. Regression modeling for Y=LUI

To address Hypothesis 2 (i.e., specifying Y=LUI), the first regression model examined likelihood of information usage overall, again employing the backward elimination personality without using the item type (media or device) as a "by" factor. The resulting mode accounted for 94% of variance in LUI (R^2=.944, F(3,42)=239.268, p<.0001). Significant predictor variables included LUA (t=25.11, p<.0001), and interactions between LUA and APAR (t=3.26, p=.0022) and LUA and APOR (t=-2.58, p=.0135). When examining media items only, the equation for LUI produced a model with significant factors that together accounted for 98 percent of the variance in LUI (R^2=.981, F(2,22)=497.65, p<.0001). Significant contributors were APER (t(2,22)=-4.28, p=.0003; and LUA, t(4,22)=31.54, p<.0001. For Device Items, 97.3% of variance in LUI (R2=.973, F(4,22)=166.58, p<.0001) was accounted for by the contributions of APER (t(4,22)=2.98, p=.008; APOR, t(4,22)=-3.74, p=.0015; LUA, t(4,22)=15.48, p<.0001; and interaction between LUA and APAR, t(4,22)=2,49,p=.023.

CHAPTER V

DISCUSSION AND SUMMARY

Theoretical Implications

This research made a first, exploratory effort at juxtaposing ecological affordance theory with traditional uses and gratifications approaches, to see how such a combination might help to identify or explore phenomena involving modern media, devices and users. The researcher offered a new theoretical framework in Chapter II to serve as a basis for this exploration; it and the research itself amount to just the kind of "probing around," McLuhan encouraged, employing "seemingly disparate elements … imaginatively poised" (1967/2001, p.10). The small scope and preliminary, exploratory nature of the design represents only a starting point in this effort and cannot hope to achieve the "startling discoveries" (p. 10) McLuhan envisioned from such probative efforts. Yet, results taken as a whole and within the particular context of this study's purpose, goals and limitations, are promising.

At the first and most fundamental level, generation of mean scores for user likelihood and media/device affordance is informative all on its own. When these lists are sorted and compared according to their various scores, it is readily apparent that likelihood scores and affordance scores track together when both sets of scores are sorted by the particular goal condition. The importance of item type is also clearly evident, in that both kinds of items appear to be associated in various combinations with particular model domains. This indicates the method employed for this study lives up to its task, namely, attempting to answer Blumler and Katz' call for not just another list of presumed media-related needs, but rather, a sorting out of needs" on some valid theoretical basis.

This preliminary comparison at a glance also generally supports the study's first two hypotheses, that users with action or informational goals are more likely to choose items scoring high in participation affordance or personalization affordance, respectively. Likewise, Hypothesis 3 as alternatively addressed is generally supported in that items' portability affordance does appear to enhance (or constrain) users' choices: items with higher likelihood scores tend to have higher portability affordance scores as well. Recall, however, that sampling issues prevented full examination of age and education as important variables; this should be addressed in future studies to ensure these important characteristics are fully incorporated.

Visual inspection, however, does not seem adequate for the present task. The theoretical framework proposes particular types of relationships between model domains beyond simple sorting of concepts into groupings. Results of tests for relationships (i.e., correlations) revealed which components (variables) appear related as well as the degree or strength of the relationship. So, while visual inspection evaluates organization and concept placement, review of correlations generally support coimplications (Michaels and Carello, 1981) implied in the ecological framework. In every form of overall multivariate pairwise comparison (that is, when looking at all 46 items without dividing by item type), the likelihood score being examined turned out to be significantly or nearly significantly correlated with its companion affordance score as associated in Figure 3. When examining the smaller groups of media items or device items only (N=23), device items were more highly correlated with their associated affordance categories; media items however, were not significantly correlated when examined alone. This finding offers important guidance for future development of ecological perspectives; devices are

found to play an important role in likelihood of usage at all levels – but media items themselves appear to be highly interchangeable in the user's eyes, for support of either or both goal types (action, information). This result informs future iterations and applications of affordance theory so that they better illustrate the differing roles of media items vs. device items. Thus, in terms of the entire theoretical approach as originally structured, results suggest that for these respondents, relationships depicted in the framework (i.e., lines, arrows, overlapping shaded areas, etc.) as well as its basic concept categorizations, offer promise for further development.

The Participation metric appears to have some influence over users' choices when action is the goal particularly for media items, however, this connection appears weaker than expected in terms of theoretical components. Participation appears to function in tandem with Personalization and Portability more so than in stand-alone fashion as indicated by correlations (with Participation being more highly correlated with Personalization than with Portability). One possibility is that highly personalizable media and devices do a better job of supporting participatory usage – which seems a common sense conclusion, but would be worthy of further, objective study.

Participation performed most strongly as a predictor in the regression models that examined overall likelihood for action across all items. This suggests using caution when applying future adaptations of the new ecological framework, to make sure consideration of media items vs. device items does not obscure or overlook results at the whole-model level. Regression modeling also supported the theoretical framework's assertion that all domains must be considered together, as mutual influencers on one another. This is evidenced by findings that Participation was not the only influencer of action usage.

Personalization retained significance in overall action models and in modeling action-oriented choices of media items as well. Portability was a significant contributor in both overall action models and in the model specific to action-oriented choices for devices as well. Thus, very much in keeping with ecological theory and with this theoretical framework's structure as proposed, all three metrics must always be viewed in relation to one another and in relation to concept domains – even while recognizing that one or another metric alone (in this case, Participation), may still be appropriately and independently associated with one or another theoretical domain (in this case, Action).

Correlations and regression models also support Hypothesis 2 in relation to the ecological framework being employed. For the overall and device-item regressions, Personalization was more highly correlated with informational uses than any other Pew metric. Participation and Portability both offered independent influence of their own, and they appeared in significant cross-effects. This is highly consistent with findings for LUA, and indicates that once again, an item's scores for Participation and Portability as well as Personalization are important to users seeking information-about.

In the Perceptual/Personalization domain, just as in the Action/Participation domain, likelihood for action usage and likelihood for information usage were highly correlated with one another – which is not surprising, given that both kinds of scores address media and device likelihood as evaluated by the same group of users. Theoretically speaking, this is consistent with the indivisible nature of perception and action – they are entwined phenomena that cannot be fully or strictly compartmentalized. Thus, results obtained in this study reinforce the basic ecological tenet that while one factor or another may have primary influence in some situations, all factors must be

considered in all situations in order to fully understand what is going on. False or arbitrary separations between concepts and components would be at odds with both underlying theory, and with the preliminary and exploratory results herein.

That being said, however, results confirm that when one likelihood score is removed from regression equations examining the other likelihood score, then at least for this group of users, all three Pew metrics still make important contributions. Participation emerged as a significant independent effect in both Y=LUI models, for example, and Personalization gave significant contribution to Y=LUA on its own and as a cross-effect with Participation.

Of all the theoretical framework's components, the Environmental domain presented the greatest challenge for study, in large part due to methodological and sampling issues as discussed below in the section on Limitations. The ecological framework and associated Research Question 3 posited that higher levels of item knowledge and usage would be associated with greater likelihood for choosing items scoring high in Portability affordance. Knowledge and usage levels were so high among all respondents, however, that this theoretical assumption could not be adequately tested in the present study. Further development and application of ecological approaches must be better focused in this regard, for example, by seeking comparisons between groups with more marked variation in knowledge and usage levels. This refinement of underlying theoretical approaches could be extremely useful in generational or intercultural studies of usage likelihood, for example.

Results assessing the role of Portability itself, however, as expected on the basis of underlying theory, indicated that Portability is generally well placed in the theoretical

framework and appropriate for inclusion in the Environmental domain as an enhancer (or constrainer) of activity in the Action and Perceptual domains. Intriguing differences emerged between the evaluations of affordance scorers and those of students offering likelihood scores, in that category scorers indicated stronger association between portability and media items. Likelihood scorers, however, associated portability more strongly with device items. This could be accounted for by differences in the two groups of respondents. Future studies should examine this further to clarify the distinction between portability of media items and portability of device items.

Demographic assessment of respondents (i.e., agents) in relation to likelihood of usage again encountered sampling issues as described below, because respondents were quite homogeneous in age, gender, race and educational level – again yielding too narrow a range of variety to support full comparison between older and younger, more educated or less educated, etc. The home environment offered the most diversity, with respondents spread more evenly across all home conditions – and in the case of this characteristic, living environment clearly made a difference in the degree of associations reflected in the model. This is just as one would expect both from the theoretical standpoint of the ecological framework, and from the standpoint of plain old common sense. Future refinement of the ecological approach should include more detailed examination of differing home environments, and would benefit from inclusion of socioeconomic characteristics (because home environment seems so closely tied to income in particular). As was the case with knowledge and usage levels, future studies with larger and more diverse respondent groups would also help clarify and describe the impact of age, education, gender and race on likelihood of usage.

Limitations

The findings of this study must be viewed in light of important limitations, mostly having to do with the exploratory (i.e., preliminary and non-predictive) nature of the study and its goals. Predictions to larger groups from these results are were not intended and not appropriate given the convenience sampling methods employed – so in all cases, results can be said to hold only for these few respondents this particular study.

Causality also cannot be claimed, and was never the researcher's goal. Findings of correlation between variables, and findings that one variable contributes to the variation of another factor, indicate relationships – not causes. Thus, for all results, one may say that relationships exist to weaker or stronger degrees, and directionality (in the case of correlations) can also be ascertained. None of this means, however, that these relationships cause differences to occur. Future studies will require larger and randomly selected samples, and specific tests for causation that take into account more potentially causative factors than were considered here.

Convenience sampling itself is a limitation in its own right, evidenced by the narrow range of demographic difference between respondents in some characteristics. Future studies should fully address this issue with sampling methods that are suitable for prediction (i.e., randomly generated) and thus more closely resembling the normal distribution. It is important to note studies like this one – initial, exploratory efforts to examine new theoretical territory – often begin with small samples and methodologies geared more toward evaluating theoretical concerns than predicting future phenomena. Small steps such as this seem an appropriate beginning for building theoretical approaches and methodological designs to support prediction and practical applications.

Future Research Directions

The survey used here was designed to build on uses and gratifications' inherent strength, namely, illuminating the user's cognitive activity in regard to news media (Blumler & Katz, 1974; McQuail & Gurevitch, 1974; McQuail, 2002; Bryant & Zillman, 2002). It is recognized, however, that self-reported data alone may not capture all ecological aspects of interest, however, because surveys, interviews, focus groups and the like require respondents to remember, recall, verbally describe, explain, etc. – in other words, participants are forced by the nature of such designs engage in information-processing activities of strictly mentalistic (Michaels & Carello, 1981; Elliot, 1974) kinds. Notably, uses and gratifications scholars also call for methodological improvement in this area (Elliot, 1974; Rosengren, 1974; McQuail & Gurevitch, 1974; McQuail, 2002) to better incorporate environmental influences. Such methods address only one domain of this new theoretical approach – the Perceptual System domain.

Ecological research requires a method for incorporating coimplications between Perception, Action and Environmental (Michaels & Carello, 1981) domains. Unobtrusive observation such as used by Hutchins (1995) and Vicente and Burns (1996) is useful because it allows study of "cognition in the wild," (p. 269) or observation of agents freely perceiving and acting in their own surroundings, capturing both behaviors and verbalizations (arising from information-processing mental processes) for analysis. When such methods and the researchers who employ them are completely embedded (Vicente & Burns, 1996) in the subject's natural environment, however, some problems can occur. Practical limits constrain how many people and environments can be observed; ethical considerations also remain paramount (Babbie, 2007; Wimmer & Dominick, 2006).

Thus, one valuable future direction for research would involve development of suitable media laboratory facilities and methods. The right experimental settings and approaches could approximate subjects' media environments in the three model dimensions with minimal confounding factors (Wimmer & Dominick, 2006; Shavelson, 1996); in this way, all theoretical domains including the environment can be more fully examined.

Aside from future applications already mentioned in relation to sampling methods, goals, and comparison of more diverse groups, opportunities abound for further application of the researcher's ecological framework to different kinds of media-related phenomena. This dissertation has noted several studies focused on adaptive environments or environmental components that could improve the lives of Alzheimer's patients and others who are challenged to maintain or support the perception-and-action cycle. It is easy to see how media content and media-related devices alike could be developed and studied with these kinds of applications in mind. Developers of content and devices would also benefit from future studies that provide more detailed understanding of the differences (or similarities) between the affordances that *providers* think they are offering, and the usages or effectivities that *users* feel they are actually receiving from any given media or device item.

University planners in particular may also find value in future applications of the ecological perspective to studies of college students' engagement with news. Among college students in particular, Tanner (2010, December) wrote, "one of the often asked questions by incoming freshmen is whether the dorms they will be living in have broadband connectivity for their computers. In some cases, this will be a 'deal breaker' if

the college cannot provide the necessary connectivity (Shepard, 2003)" (2010, December, p. 39).

Tanner found that young people "use the Internet to access their information. They are power users, creating, sharing and researching things that are important to them, and they know how to get information when they need it. Internet browsers bring a world of information to Millennials. Search engines help them locate information efficiently, and spreadsheets, databases, and concept maps help them to organize, interpret and use information in new ways (Apple Canada, 2004). Blogging and tagging have also become widely popular mechanisms to share and search for relevant information (Kavis, 2007)" (2010, December, p. 41). These are exactly the kinds of preferences and choices the newly proposed ecological framework can help to explore.

Finally, media users themselves can reap the benefits of continuing study from this theoretical perspective. Applying ecological theory offers enhancements to understanding that cannot be gleaned from traditional, computational approaches alone. Expanding theoretical underpinnings has the potential to also expand users' opportunities for action support, information support and environmental fine-tuning, by helping to create media content and technologies that offer higher levels of affordance for many different kinds of goal-directed activities. These directions should be considered only as the first beginnings for exploring new vistas of modern media phenomena, guided by this McLuhanesque infusion of ecological theory into examination of users' engagement with news.

APPENDIX A

CATEGORY SCORING INSTRUMENT

Dissertation Research: Category Scoring Sheet

Welcome to the Category Scoring Sheet!

Thank you for volunteering to complete the News Usage Category Scoring sheet online via SurveyGizmo.com. This survey will collect data (your category scoring answers) for my dissertation research. My research goal is to investigate what preferences guide college students' engagement with news – that is, the information they rely on in the course of their daily lives.

To participate in the category scoring, you must not be currently enrolled at UL Lafayette and you must at least 18 years old. Each participant may take the category coding survey only once.

The questions will ask you to rate how well certain items perform in three different categories. The scoring sheet takes less than thirty minutes to complete – and you can complete it online anytime at your convenience, in the location of your choice. All you need is a computer with an Internet connection.

Your participation does not pose any risk, discomfort or inconvenience other than that normally encountered when spending a few minutes at your computer, using the Internet. Your participation is completely voluntary. To stop participating, simply navigate away from the online survey page or close your Web Browser at any time.

Your privacy is protected because no names or other identifying information will be collected.

If you have questions about my dissertation research or about this category scoring survey, please send me an email at fergusondt@gmail.com or call me at 337-280-5887 and I will be happy to talk with you.

This project has been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS.

This project has also been reviewed by the University of Louisiana at Lafayette Institutional Review Board. Questions or concerns about rights as a research subject should be directed to UL's IRB office at irb@louisiana.edu or by phone at 337-482-6489.

By clicking "I Agree" you certify that you are NOT currently enrolled in school, but you ARE at least 18 years old, and that you have not taken this survey before.
( ) I Agree, Take Me to the Survey
( ) I Do Not Agree, Get Me Out of Here

About You

Before we get started with the survey, please tell me a little bit about yourself by answering these first few questions.

1) Please choose the answer that best describes your age.

( ) under 18
( ) 18-20
( ) 21-23
( ) 24-26
( ) 27-29
( ) 30+

2) Please choose the answer choice best describes your education level.

( ) High school graduate
( ) Some college
( ) Bachelor's Degree
( ) Master's Degree
( ) PHD/Other Terminal Degree

3) Please choose the answer that best describes your gender.

( ) Male
( ) Female

4) Please choose the answer that best describes your race.

( ) Asian/Pacific Islander
( ) Black/African-American
( ) Caucasian
( ) Hispanic
( ) Native American/Alaska Native
( ) Other/Multi-Racial
( ) Decline to Respond

Category Scoring Instructions

Each question below shows a list of items that you are asked to score. The scores indicate how well you think each item provides certain kinds of opportunities for users. Please use the definitions included with each question to help you score each item.

Category Scoring 1: Participation

5) For each type of NEWS MEDIA listed below, please indicate how well you think the item offers users chances to PARTICIPATE. "Participation" means that the item you are scoring offers users opportunities to DO SOMETHING beyond reading, listening or viewing. Printed newspapers, for example, offer readers the opportunity to "participate" by filling out a crossword puzzle. The online version of the same newspaper might offer users opportunities to "participate" by posting comments, submitting photos, etc.

	Not at all participatory	Somewhat participatory	Participatory	Very participatory	Extremely participatory	I don't use this item, so I can't evaluate it	I don't know what this item is
Printed newspapers	( )	( )	( )	( )	( )	( )	( )
Printed news magazines	( )	( )	( )	( )	( )	( )	( )
Printed books	( )	( )	( )	( )	( )	( )	( )
Online newspapers	( )	( )	( )	( )	( )	( )	( )
Online news magazines	( )	( )	( )	( )	( )	( )	( )
Online books	( )	( )	( )	( )	( )	( )	( )
Broadcast radio news	( )	( )	( )	( )	( )	( )	( )
Satellite radio news	( )	( )	( )	( )	( )	( )	( )
Internet radio news	( )	( )	( )	( )	( )	( )	( )
Broadcast television news	( )	( )	( )	( )	( )	( )	( )
Cable/Satellite television news	( )	( )	( )	( )	( )	( )	( )
TV News Channel web pages	( )	( )	( )	( )	( )	( )	( )
User-generated news online	( )	( )	( )	( )	( )	( )	( )
News blogs online	( )	( )	( )	( )	( )	( )	( )

Facebook or Myspace	( )	( )	( )	( )	( )	( )	( )
Flickr or PhotoBucket	( )	( )	( )	( )	( )	( )	( )
Twitter	( )	( )	( )	( )	( )	( )	( )
Foursquare	( )	( )	( )	( )	( )	( )	( )
E-mail	( )	( )	( )	( )	( )	( )	( )
Instant messages or chat rooms	( )	( )	( )	( )	( )	( )	( )
Online forums or message boards	( )	( )	( )	( )	( )	( )	( )
Internet search engines	( )	( )	( )	( )	( )	( )	( )
Personalized home web page (Yahoo, AOL, etc.)	( )	( )	( )	( )	( )	( )	( )

Category Scoring 2: Participation

6) For each type of DEVICE listed below, please indicate how well you think the device offers users chances to PARTICIPATE. "Participation" means that the device you are scoring offers users opportunities to DO SOMETHING beyond reading, listening or viewing. A land line telephone, for example, offers users the opportunity to "participate" in a spoken conversation with another person. A cellular telephone may offer users the chance to "participate" via text messaging as well as verbal conversations.

	Not at all participatory	Somewhat participatory	Participatory	Very participatory	Extremely participatory	I don't use this item so I can't evaluate it	I don't know what this item is
Television set with antenna	( )	( )	( )	( )	( )	( )	( )
Television set with basic cable	( )	( )	( )	( )	( )	( )	( )

Television set with premium cable	( )	( )	( )	( )	( )	( )	( )
Television set with satellite service	( )	( )	( )	( )	( )	( )	( )
Digital or High-Definition Television Set or Converter Box	( )	( )	( )	( )	( )	( )	( )
Video or DVD recording device	( )	( )	( )	( )	( )	( )	( )
Video or DVD playback device	( )	( )	( )	( )	( )	( )	( )
Portable movie viewing device	( )	( )	( )	( )	( )	( )	( )
Portable music listening device	( )	( )	( )	( )	( )	( )	( )
Still camera	( )	( )	( )	( )	( )	( )	( )
Video camera	( )	( )	( )	( )	( )	( )	( )
Dial-up Internet connection	( )	( )	( )	( )	( )	( )	( )
Hand-held e-reader or tablet device	( )	( )	( )	( )	( )	( )	( )
Cable or satellite Internet connection	( )	( )	( )	( )	( )	( )	( )
Wireless	( )	( )	( )	( )	( )	( )	( )

network							
Desktop computer	( )	( )	( )	( )	( )	( )	( )
Laptop computer	( )	( )	( )	( )	( )	( )	( )
Land line telephone service	( )	( )	( )	( )	( )	( )	( )
Basic cellular telephone, calling, texting, photos	( )	( )	( )	( )	( )	( )	( )
Feature cellular phone, basics plus Internet connectivity	( )	( )	( )	( )	( )	( )	( )
Smart phone, such as an iPhone, Android, Blackberry, etc.	( )	( )	( )	( )	( )	( )	( )
Internet cellular phone service	( )	( )	( )	( )	( )	( )	( )
Wired network	( )	( )	( )	( )	( )	( )	( )

Category Scoring 3: Personalization

7) For each type of NEWS MEDIA listed below, please indicate how well you think the item offers users chances to PERSONALIZE their usage experience. "Personalization" means that the item you are scoring offers users opportunities to CHANGE THINGS according to their individual preferences. Satellite television services, for example, may offer subscribers the opportunity to "personalize" their experience via usage controls, channel guide options, etc.

	Not at all	Somewhat	Personalizab	Very	Extremely	I don't	I

	personalizable	personalizable	le	personalizable	personalizable	use this item, so I can't evaluate it	don't know what this item is
Printed newspapers	( )	( )	( )	( )	( )	( )	( )
Printed news magazines	( )	( )	( )	( )	( )	( )	( )
Printed books	( )	( )	( )	( )	( )	( )	( )
Online newspapers	( )	( )	( )	( )	( )	( )	( )
Online news magazines	( )	( )	( )	( )	( )	( )	( )
Online books	( )	( )	( )	( )	( )	( )	( )
Broadcast radio news	( )	( )	( )	( )	( )	( )	( )
Satellite radio news	( )	( )	( )	( )	( )	( )	( )
Internet radio news	( )	( )	( )	( )	( )	( )	( )
Broadcast television news	( )	( )	( )	( )	( )	( )	( )
Cable/Satellite television news	( )	( )	( )	( )	( )	( )	( )
TV News Channel web pages	( )	( )	( )	( )	( )	( )	( )
User-generated news online	( )	( )	( )	( )	( )	( )	( )
News blogs online	( )	( )	( )	( )	( )	( )	( )
Facebook or Myspace	( )	( )	( )	( )	( )	( )	( )
Flickr or PhotoBucket	( )	( )	( )	( )	( )	( )	( )
Twitter	( )	( )	( )	( )	( )	( )	( )
Foursquare	( )	( )	( )	( )	( )	( )	( )
E-mail	( )	( )	( )	( )	( )	( )	( )

Instant messages or chat rooms	( )	( )	( )	( )	( )	( )	( )
Online forums or message boards	( )	( )	( )	( )	( )	( )	( )
Internet search engines	( )	( )	( )	( )	( )	( )	( )
Personalized home web page (Yahoo, AOL, etc.)	( )	( )	( )	( )	( )	( )	( )

Category Scoring 4: Personalization

8) For each type of DEVICE listed below, please indicate how well you think the device offers users chances to PERSONALIZE their usage experience. "Personalization" means that the device you are scoring offers users opportunities to CHANGE THINGS according to their individual preferences. A land-line telephone for example, may offer users the opportunity to "personalize" their usage by setting the ring volume, using the speaker phone, etc.

	Not at all personalizable	Somewhat personalizable	Personalizable	Very personalizable	Extremely personalizable	I don't use this item so I can't evaluate it	I don't know what this item is
Television set with antenna	( )	( )	( )	( )	( )	( )	( )
Television set with basic cable	( )	( )	( )	( )	( )	( )	( )
Television set with premium cable	( )	( )	( )	( )	( )	( )	( )
Television set with satellite	( )	( )	( )	( )	( )	( )	( )

service							
Digital or High-Definition Television Set or Converter Box	( )	( )	( )	( )	( )	( )	( )
Video or DVD recording device	( )	( )	( )	( )	( )	( )	( )
Video or DVD playback device	( )	( )	( )	( )	( )	( )	( )
Portable movie viewing device	( )	( )	( )	( )	( )	( )	( )
Portable music listening device	( )	( )	( )	( )	( )	( )	( )
Still camera	( )	( )	( )	( )	( )	( )	( )
Video camera	( )	( )	( )	( )	( )	( )	( )
Dial-up Internet connection	( )	( )	( )	( )	( )	( )	( )
Hand-held e-reader or tablet device	( )	( )	( )	( )	( )	( )	( )
Cable or satellite Internet connection	( )	( )	( )	( )	( )	( )	( )
Wireless network	( )	( )	( )	( )	( )	( )	( )
Desktop computer	( )	( )	( )	( )	( )	( )	( )
Laptop computer	( )	( )	( )	( )	( )	( )	( )
Land line	( )	( )	( )	( )	( )	( )	( )

telephone service							
Basic cellular telephone, calling, texting, photos	( )	( )	( )	( )	( )	( )	( )
Feature cellular phone, basics plus Internet connectivity	( )	( )	( )	( )	( )	( )	( )
Smart phone, such as an iPhone, Android, Blackberry, etc.	( )	( )	( )	( )	( )	( )	( )
Internet cellular phone service	( )	( )	( )	( )	( )	( )	( )
Wired network	( )	( )	( )	( )	( )	( )	( )

Category Scoring 5: Portability

9) For each type of NEWS MEDIA listed below, please indicate how well you think the item offers PORTABILITY. "Portability" means that the item you are scoring offers USAGE ON THE GO according to the user's individual habits or routines. A printed book, for example, is "portable" to the extent that someone can carry it around and read it almost anywhere.

	Not at all portable	Somewhat portable	Portable	Very portable	Extremely portable	I don't use this item, so I can't evaluate it	I don't know what this item is
Printed	( )	( )	( )	( )	( )	( )	( )

newspapers							
Printed news magazines	( )	( )	( )	( )	( )	( )	( )
Printed books	( )	( )	( )	( )	( )	( )	( )
Online newspapers	( )	( )	( )	( )	( )	( )	( )
Online news magazines	( )	( )	( )	( )	( )	( )	( )
Online books	( )	( )	( )	( )	( )	( )	( )
Broadcast radio news	( )	( )	( )	( )	( )	( )	( )
Satellite radio news	( )	( )	( )	( )	( )	( )	( )
Internet radio news	( )	( )	( )	( )	( )	( )	( )
Broadcast television news	( )	( )	( )	( )	( )	( )	( )
Cable/Satellite television news	( )	( )	( )	( )	( )	( )	( )
TV News Channel web pages	( )	( )	( )	( )	( )	( )	( )
User-generated news online	( )	( )	( )	( )	( )	( )	( )
News blogs online	( )	( )	( )	( )	( )	( )	( )
Facebook or Myspace	( )	( )	( )	( )	( )	( )	( )
Flickr or PhotoBucket	( )	( )	( )	( )	( )	( )	( )
Twitter	( )	( )	( )	( )	( )	( )	( )
Foursquare	( )	( )	( )	( )	( )	( )	( )
E-mail	( )	( )	( )	( )	( )	( )	( )
Instant messages or chat rooms	( )	( )	( )	( )	( )	( )	( )
Online forums or message boards	( )	( )	( )	( )	( )	( )	( )
Internet search engines	( )	( )	( )	( )	( )	( )	( )
Personalized home web	( )	( )	( )	( )	( )	( )	( )

page (Yahoo,
AOL, etc.)

Category Scoring 6: Portability

10) For each type of DEVICE listed below, please indicate how well you think the device offers PORTABILITY. "Portability" means that the item you are scoring offers USAGE ON THE GO according to the user's individual habits or routines. A laptop computer, for example, is "portable" to the extent that users can carry it around and use it in different places.

	Not at all portable	Somewhat portable	Portable	Very portable	Extremely portable	I don't use this item so I can't evaluate it	I don't know what this item is
Television set with antenna	( )	( )	( )	( )	( )	( )	( )
Television set with basic cable	( )	( )	( )	( )	( )	( )	( )
Television set with premium cable	( )	( )	( )	( )	( )	( )	( )
Television set with satellite service	( )	( )	( )	( )	( )	( )	( )
Digital or High-Definition Television Set or Converter Box	( )	( )	( )	( )	( )	( )	( )
Video or DVD recording device	( )	( )	( )	( )	( )	( )	( )
Video or DVD	( )	( )	( )	( )	( )	( )	( )

playback device							
Portable movie viewing device	( )	( )	( )	( )	( )	( )	( )
Portable music listening device	( )	( )	( )	( )	( )	( )	( )
Still camera	( )	( )	( )	( )	( )	( )	( )
Video camera	( )	( )	( )	( )	( )	( )	( )
Dial-up Internet connection	( )	( )	( )	( )	( )	( )	( )
Hand-held e-reader or tablet device	( )	( )	( )	( )	( )	( )	( )
Cable or satellite Internet connection	( )	( )	( )	( )	( )	( )	( )
Wireless network	( )	( )	( )	( )	( )	( )	( )
Desktop computer	( )	( )	( )	( )	( )	( )	( )
Laptop computer	( )	( )	( )	( )	( )	( )	( )
Land line telephone service	( )	( )	( )	( )	( )	( )	( )
Basic cellular telephone, calling, texting, photos	( )	( )	( )	( )	( )	( )	( )
Feature cellular phone, basics plus Internet connectivity	( )	( )	( )	( )	( )	( )	( )
Smart	( )	( )	( )	( )	( )	( )	( )

phone, such as an iPhone, Android, Blackberry, etc.							
Internet cellular phone service	( )	( )	( )	( )	( )	( )	( )
Wired network	( )	( )	( )	( )	( )	( )	( )

Thank You!

That's it! Thank you for sharing your opinions by taking this Category Scoring Survey.

APPENDIX B

NEWS USAGE SURVEY INSTRUMENT

Dissertation Research: News Usage Survey

Welcome to the News Usage Survey!

Thank you for volunteering to complete the News Usage Survey online via SurveyGizmo.com. This survey will collect data (your survey answers) for my dissertation research. My research goal is to investigate what preferences guide college students' engagement with news – that is, the information they rely on in the course of their daily lives.

To participate in the research, you must be currently enrolled at UL Lafayette and at least 18 years old. You may take the survey only once. The survey questions will ask you how likely you are to use particular kinds of news content, channels and delivery technologies for achieving different kinds of goals.

The survey takes less than 30 minutes to complete – and you can it online anytime at your convenience, in the location of your choice. All you need is a computer with an Internet connection.

Your participation does not pose any risk, discomfort or inconvenience other than that normally encountered when spending a few minutes at your computer, using the Internet.

There are some benefits to your voluntary participation. First, you will get the opportunity to help build knowledge and understanding about the ways in which college students use and gather news and information. Also, after you complete the survey you will have an opportunity to submit your email address for inclusion in a prize drawing for a $50 gift certificate from the University Bookstore; $50 in cash; or a parking spot on or near campus (1 semester). Your participation in the prize drawing is also voluntary; the email addresses submitted will not be included in any data set, nor will they be shared or distributed; instead, all email addresses will be destroyed after the prize drawing has been completed and participants notified.

Your participation is completely voluntary. To stop participating, simply navigate away from the online survey page or close your Web Browser at any time.

If you have questions about my dissertation research or about this survey, please send me an email at fergusondt@gmail.com or call me at 337-280-5887 and I will be happy to talk with you.

This project has been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research subject should be directed to the chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS.

This project has also been reviewed by the University of Louisiana at Lafayette Institutional Review Board. Questions or concerns about rights as a research subject should be directed to UL's IRB office at irb@louisiana.edu or by phone at 337-482-6489.

By clicking "I Agree" you certify that you are a currently enrolled student who is at least 18 years old, that you give your informed consent for voluntary participation, and that you have not taken this survey before.
( ) I Agree, Take Me to the Survey
( ) I Do Not Agree, Get Me Out of Here

About You

Before we get started with the survey, please tell me a little bit about yourself by answering these first few questions.

1) Please choose the answer that best describes your age.

( ) under 18
( ) 18-20
( ) 21-23
( ) 24-26
( ) 27-29
( ) 30+

2) Please choose the answer choice best describes your school class level.

( ) Freshman
( ) Sophomore
( ) Junior
( ) Senior
( ) Graduate Student
( ) I am not currently enrolled in school

3) Please choose the answer that best describes your present home environment.

( ) I live in a dormitory/on-campus
( ) I live in a house or apartment/off-campus
( ) I live with my parents/family

4) Please choose the answer that best describes your gender.

( ) Male
( ) Female

5) Please choose the answer that best describes your race.

( ) Asian/Pacific Islander
( ) Black/African-American
( ) Caucasian
( ) Hispanic
( ) Native American/Alaska Native
( ) Other/Multi-Racial
( ) Decline to Respond

Instructions: Action Questions

Thanks for telling me a little bit about yourself. Now, let's get to the survey! The first two questions ask what kinds of resources you are most likely to use to support ACTIONS such as cooking, gardening, exercising, driving, shopping, playing sports or music, having conversations, etc. For example, if you want to cook breakfast, you might use resources like cookbooks, recipe magazines or cooking shows on television to help complete the ACTION of cooking breakfast. The first question asks how likely you are to use different kinds of news media in support of action goals. The second question asks how likely you are to use different kinds of devices in support of action goals. For each of these questions, please indicate how likely you are to use each item listed in support of ACTIONS.

Action Question One

6) How likely are you to use each type of NEWS MEDIA listed below, when your goal is more powerful, faster, more delicate and/or more effective ACTIONS?

	Not at all likely	Somewhat likely	Likely	Very Likely	Extremely Likely	I don't have this item available to me	I don't know what this item is
Printed newspapers	( )	( )	( )	( )	( )	( )	( )
Printed news magazines	( )	( )	( )	( )	( )	( )	( )
Printed books	( )	( )	( )	( )	( )	( )	( )
Online newspapers	( )	( )	( )	( )	( )	( )	( )
Online news magazines	( )	( )	( )	( )	( )	( )	( )
Online books	( )	( )	( )	( )	( )	( )	( )

Broadcast radio news	( )	( )	( )	( )	( )	( )	( )
Satellite radio news	( )	( )	( )	( )	( )	( )	( )
Internet radio news	( )	( )	( )	( )	( )	( )	( )
Broadcast television news	( )	( )	( )	( )	( )	( )	( )
Cable/Satellite television news	( )	( )	( )	( )	( )	( )	( )
TV News Channel web pages	( )	( )	( )	( )	( )	( )	( )
User-generated news online	( )	( )	( )	( )	( )	( )	( )
News blogs online	( )	( )	( )	( )	( )	( )	( )
Facebook or Myspace	( )	( )	( )	( )	( )	( )	( )
Flickr or PhotoBucket	( )	( )	( )	( )	( )	( )	( )
Twitter	( )	( )	( )	( )	( )	( )	( )
Foursquare	( )	( )	( )	( )	( )	( )	( )
E-mail	( )	( )	( )	( )	( )	( )	( )
Instant messages or chat rooms	( )	( )	( )	( )	( )	( )	( )
Online forums or message boards	( )	( )	( )	( )	( )	( )	( )
Internet search engines	( )	( )	( )	( )	( )	( )	( )
Personalized home web page (Yahoo, AOL, etc.)	( )	( )	( )	( )	( )	( )	( )

Action Question Two

7) How likely are you to use each type of DEVICE listed below, when your goal is more powerful, faster, more delicate and/or more effective ACTIONS?

	Not at all likely	Somewhat likely	Likely	Very likely	Extremely likely	I don't have this item available to me	I don't know what this item is
Television set with antenna	( )	( )	( )	( )	( )	( )	( )
Television set with basic cable	( )	( )	( )	( )	( )	( )	( )
Television set with premium cable	( )	( )	( )	( )	( )	( )	( )
Television set with satellite service	( )	( )	( )	( )	( )	( )	( )
Digital or High-Definition Television Set or Converter Box	( )	( )	( )	( )	( )	( )	( )
Video or DVD recording device	( )	( )	( )	( )	( )	( )	( )
Video or DVD playback device	( )	( )	( )	( )	( )	( )	( )
Portable movie viewing device	( )	( )	( )	( )	( )	( )	( )
Portable music	( )	( )	( )	( )	( )	( )	( )

listening device							
Still camera	( )	( )	( )	( )	( )	( )	( )
Video camera	( )	( )	( )	( )	( )	( )	( )
Dial-up Internet connection	( )	( )	( )	( )	( )	( )	( )
Hand-held e-reader or tablet device	( )	( )	( )	( )	( )	( )	( )
Cable or satellite Internet connection	( )	( )	( )	( )	( )	( )	( )
Wireless network	( )	( )	( )	( )	( )	( )	( )
Desktop computer	( )	( )	( )	( )	( )	( )	( )
Laptop computer	( )	( )	( )	( )	( )	( )	( )
Land line telephone service	( )	( )	( )	( )	( )	( )	( )
Basic cellular telephone, calling, texting, photos	( )	( )	( )	( )	( )	( )	( )
Feature cellular phone, basics plus Internet connectivity	( )	( )	( )	( )	( )	( )	( )
Smart phone, such as an iPhone, Android, Blackberry, etc.	( )	( )	( )	( )	( )	( )	( )
Internet cellular	( )	( )	( )	( )	( )	( )	( )

phone service							
Wired network	( )	( )	( )	( )	( )	( )	( )

Instructions: Information Questions

The next part of this survey asks what kinds of resources you are most likely to use to support your INFORMATIONAL NEEDS such as learning new things, forming opinions, keeping up with current events, satisfying curiosity, etc. For example, if you want to learn about nutrition, you might use resources like textbooks, Internet search engines, articles in health magazines, etc. to help gather INFORMATION about nutrition. The next question asks how likely you are to use different kinds of news media in support of informational needs. The final question asks how likely you are to use different kinds of devices in support of informational needs. For each of these questions, please indicate how likely you are to use each item listed in support INFORMATIONAL NEEDS.

Information Question One

8) How likely are you to use each type of NEWS MEDIA listed below, when your goal is to find more and/or different kinds of INFORMATION?

	Not at all likely	Somewhat likely	Likely	Very Likely	Extremely Likely	I don't have this item available to me	I don't know what this item is
Printed newspapers	( )	( )	( )	( )	( )	( )	( )
Printed news magazines	( )	( )	( )	( )	( )	( )	( )
Printed books	( )	( )	( )	( )	( )	( )	( )
Online newspapers	( )	( )	( )	( )	( )	( )	( )
Online news magazines	( )	( )	( )	( )	( )	( )	( )
Online books	( )	( )	( )	( )	( )	( )	( )
Broadcast radio news	( )	( )	( )	( )	( )	( )	( )
Satellite radio news	( )	( )	( )	( )	( )	( )	( )
Internet radio	( )	( )	( )	( )	( )	( )	( )

news							
Broadcast television news	( )	( )	( )	( )	( )	( )	( )
Cable/Satellite television news	( )	( )	( )	( )	( )	( )	( )
TV News Channel web pages	( )	( )	( )	( )	( )	( )	( )
User-generated news online	( )	( )	( )	( )	( )	( )	( )
News blogs online	( )	( )	( )	( )	( )	( )	( )
Facebook or Myspace	( )	( )	( )	( )	( )	( )	( )
Flickr or PhotoBucket	( )	( )	( )	( )	( )	( )	( )
Twitter	( )	( )	( )	( )	( )	( )	( )
Foursquare	( )	( )	( )	( )	( )	( )	( )
E-mail	( )	( )	( )	( )	( )	( )	( )
Instant messages or chat rooms	( )	( )	( )	( )	( )	( )	( )
Online forums or message boards	( )	( )	( )	( )	( )	( )	( )
Internet search engines	( )	( )	( )	( )	( )	( )	( )
Personalized home web page (Yahoo, AOL, etc.)	( )	( )	( )	( )	( )	( )	( )

Information Question Two

9) How likely are you to use each type of DEVICE listed below, when your goal is to find more and/or different kinds of INFORMATION?

	Not at all likely	Somewhat likely	Likely	Very likely	Extremely likely	I don't have this item available to me	I don't know what this

							item is
Television set with antenna	( )	( )	( )	( )	( )	( )	( )
Television set with basic cable	( )	( )	( )	( )	( )	( )	( )
Television set with premium cable	( )	( )	( )	( )	( )	( )	( )
Television set with satellite service	( )	( )	( )	( )	( )	( )	( )
Digital or High-Definition Television Set or Converter Box	( )	( )	( )	( )	( )	( )	( )
Video or DVD recording device	( )	( )	( )	( )	( )	( )	( )
Video or DVD playback device	( )	( )	( )	( )	( )	( )	( )
Portable movie viewing device	( )	( )	( )	( )	( )	( )	( )
Portable music listening device	( )	( )	( )	( )	( )	( )	( )
Still camera	( )	( )	( )	( )	( )	( )	( )
Video camera	( )	( )	( )	( )	( )	( )	( )
Dial-up Internet connection	( )	( )	( )	( )	( )	( )	( )
Hand-held	( )	( )	( )	( )	( )	( )	( )

e-reader or tablet device							
Cable or satellite Internet connection	( )	( )	( )	( )	( )	( )	( )
Wireless Network	( )	( )	( )	( )	( )	( )	( )
Desktop computer	( )	( )	( )	( )	( )	( )	( )
Laptop computer	( )	( )	( )	( )	( )	( )	( )
Land line telephone service	( )	( )	( )	( )	( )	( )	( )
Basic cellular telephone, calling, texting, photos	( )	( )	( )	( )	( )	( )	( )
Feature cellular phone, basics plus Internet connectivity	( )	( )	( )	( )	( )	( )	( )
Smart phone, such as an iPhone, Android, Blackberry, etc.	( )	( )	( )	( )	( )	( )	( )
Internet cellular phone service	( )	( )	( )	( )	( )	( )	( )
Wired network	( )	( )	( )	( )	( )	( )	( )

Thank You!

Thanks again for your voluntary participation! If you would like to enter your email address into the Prize Drawing for $50 gift certificate to the University Bookstore, $50 in cash, or a Parking Space for next semester, please send an email to fergusondissertation@gmail.com. Your email address will then be entered into the prize drawing. Results of the drawing will be emailed to everyone who enters, so watch your in-box to see if you win a prize!

APPENDIX C

PERMISSION TO REPRINT FIGURES REQUESTS

Michaels, Claire <claire.michaels@uconn.edu> 6:08 PM (1 minute ago)

to me, Claudia

Alice--
You have my permission.
I am sure Claudia will give you hers.
Regards,
Claire

Claire Michaels
CESPA/Department of Psychology
University of Connecticut U-20
406 Babbidge Rd.
Storrs, CT 06269
USA

From: "Alice C. Ferguson" <fergusondt@gmail.com<mailto:fergusondt@gmail.com>>
Date: Saturday, June 8, 2013 6:14 PM
To: Claire Michaels <claire.michaels@uconn.edu<mailto:claire.michaels@uconn.edu>>, Claudia Carello <claudia.carello@uconn.edu<mailto:claudia.carello@uconn.edu>>
Subject: Requesting Permission to Adapt An Illustration from Direct Perception

Claudia Carello <claudia.carello@uconn.edu> 10:02 PM (15 hours ago)

to me, claire.michaels

Alice,

You have my permission as well.

Claudia

==========

Professor of Psychology
Director, Center for the Ecological Study of Perception and Action
406 Babbidge Road, U-1020
University of Connecticut
Storrs, CT 06269-1020

==========

Requesting Permission to Adapt An Illustration from Direct Perception

Alice C. Ferguson <fergusondt@gmail.com> 5:14 PM (0 minutes ago)

to claire.michaels, claudia.carello

Hello Dr. Michaels and Dr. Carello,

Please consider the attached request for your permission to adapt and reprint a figure from your book, *Direct Perception.*

I would like to include the adaptation in my doctoral dissertation, *New Models of News for Young Adult Users: Applying Ecological Psychology to the Study of News Consumption Among College Students*. I plan to defend this summer at the University of Southern Mississippi, School of Mass Communication and Journalism, under the direction of my committee chair, Dr. Fei Xue.

The request I am attaching includes additional details and shows the adapted figure as I would like it to appear in my dissertation, if your permission is granted.

Thank you very much for taking a moment to consider this request. Please feel free to reach me with any questions at this email address, or by phone at 337-280-5887, or via Facebook (Alice Ferguson).

Sincerely,
Alice Ferguson
Doctoral Student, University of Southern Mississippi
Instructor of Advertising, University of Louisiana-Lafayette
337-280-5887

Request for Permission Michaels and Carello.pdf
317K View Download

To: Dr. Claire F. Michaels, Research Professor, and
Dr. Claudia Carello, Professor
Department of Psychology
406 Babbidge Road Unit 1020
University of Connecticut
Storrs, CT 06269-1020
claire.michaels@uconn.edu
claudia.carello@uconn.edu

RE: Request for Permission to Adapt and Reprint

Dear Dr. Michaels and Dr. Carello,

I am writing to ask your permission to adapt and reprint the Schematic of Coimplicative Relations that appears on Page 145 of your wonderful book, *Direct Perception*. Please allow me to include the adapted version (attached) in Chapter 1 of my dissertation, *New Models of News for Young Adult Users: Applying Ecological Psychology to the Study of News Consumption among College Students*.

This adaptation appears in my dissertation's theoretical discussion, leading up to presentation of a new theoretical model I am proposing. That new model juxtaposes ecological theory with traditional uses and gratifications theory, and with the Pew Research Center's modern news metrics – Participation, Personalization and Portability.

Please let me know your decision via email at the address shown below. Of course, should you grant permission, I will update the yellow-highlighted "pending permission" wording.

Thank you in advance for your consideration, and please let me know if I can provide additional information to aid your decision-making. I look forward to hearing from you at your earliest convenience.

Sincerely,

Alice C. Ferguson, Doctoral Student, University of Southern Mississippi
Instructor of Advertising, University of Louisiana at Lafayette
215 Kees Circle
Lafayette LA 70506
fergusondt@gmail.com
337-280-5887

RE: Request for Permission to Reprint Inbox x

Anderson, Kathleen Anne <kaander@illinois.edu> Jun 14 (1 day ago)
to me

Dear Ms. Ferguson,

Thank you for your inquiry. The figure, "A schematic diagram of a general communication system" is from the UIP title, THE MATHEMATICAL THEORY OF COMMUNICATION by Shannon & Weaver. You do not require formal permission to reproduce the figure in your doctoral dissertation, provided the following credit line is included.

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I am also in receipt of your request to reprint a figure from THE PROCESS AND EFFECTS OF MASS COMMUNICATION by Wilbur Schramm in your doctoral dissertation. Please note the University of Illinois Press is no longer the copyright holder as rights reverted to the author. For permission to reproduce this material, you will need to contact the following individual directly.

Mary Schramm Coberly
613 Skyline Drive
Ft. Collins, CO 80512

I am unable to provide a telephone number or email address for Mary Schramm Coberly.

Please let me know if you have any questions.

Best regards,
Kathleen

Kathleen Anderson
Rights & Permissions/Awards Manager
University of Illinois Press
1325 S. Oak Street

APPENDIX D

INSTITUTIONAL REVIEW BOARD APPROVALS

Human Subjects Research Application
The University of Southern Mississippi
Institutional Review Board
irb@usm.edu

Place your cursor in gray boxes and begin typing. The boxes will expand as needed.

Name Alice Diana Cade Ferguson Phone 337-280-5887

E-Mail Address fergusondt@gmail.com Campus ID # w154623

Mailing Address (address to receive information regarding this application):

Street 215 Kees Circle City Lafayette State LA Zip Code 70506

College/Division Arts and Letters Dept. School of Mass Communication and Journalism

Department Box # 5121 Phone 601-266-4258

Title NEW MODELS OF NEWS FOR YOUNG ADULT USERS: APPLYING ECOLOGICAL PSYCHOLOGY TO THE STUDY OF NEWS CONSUMPTION AMONG COLLEGE STUDENTS

Funding Agencies or Research Sponsors N/A

Grant Number (when applicable) N/A

○ New Project
◉ Dissertation ○ Thesis
○ Renewal or Continuation: Protocol #
○ Change in Previously Approved Project: Protocol #

Researcher Name (type) Alice Diana Cade Ferguson DATE August 24, 2012

Advisor Name (if applicable) (type) Dr. Fei Xue

Department Chair Name (type) Dr. Christopher Campbell

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.6820 | Fax: 601.266.4377 | www.usm.edu/irb

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

The risks to subjects are minimized.
The risks to subjects are reasonable in relation to the anticipated benefits.
The selection of subjects is equitable.
Informed consent is adequate and appropriately documented.
Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
Appropriate additional safeguards have been included to protect vulnerable subjects.
Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
If approved, the maximum period of approval is limited to twelve months.
Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: **12092501**
PROJECT TITLE: **New Models of News for Young Adult Users: Applying Ecological Psychology to the Study of News Consumption Among College Students**
PROJECT TYPE: **Dissertation**
RESEARCHER(S): **Alice Diana Cade Ferguson**
COLLEGE/DIVISION: **College of Arts & Letters**
DEPARTMENT: **School of Mass Communication & Journalism**
FUNDING AGENCY/SPONSOR: **N/A**
IRB COMMITTEE ACTION: **Expedited Review Approval**
PERIOD OF APPROVAL: **02/19/2013 to 02/18/2014**

Lawrence A. Hosman, Ph.D.
Institutional Review Board

THE UNIVERSITY OF SOUTHERN MISSISSIPPI
INSTITUTIONAL REVIEW BOARD

ADVERSE EFFECT REPORT

This form should be used to report single adverse effects. Incident reports (i.e., reports of problems involving the conduct of the study or patient participation, including problems with the recruitment and/or consent process and any deviations from the approved protocol) should be described in a letter. Return this form to the IRB Coordinator, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406-0001.

Principal Investigator:		Phone:	
IRB Approval #:			
Study Title:			
Adverse Effect (3-4 words):			
Date of Adverse Effect:			

Additional details/description of effect and treatment, if any. (A detailed report ay be attached.)		
Adverse effect appears to be (check one):	☐ Directly related to the research ☐ Indirectly related to the research ☐ Unrelated to the research	
Research involved the use of a:		
Was use of procedure intended to directly benefit subject?	Yes	No
Was subject enrolled at a USM site?	Yes	No
Has this type of adverse effect been reported before?	Yes	No
Is this type of effect likely to occur again?	Yes	No
Is the effect adequately described in the protocol and consent form?	Yes	No
*If not, are changes needed in the protocol and/or consent form?	Yes	No
** If so, a modification application should accompany this report		
What other agencies (e.g., sponsors) have been notified of this adverse effect?		
Signature of Principal Investigator	Date	

Proposal Number: SP13-23 USM

The University of Louisiana at Lafayette Institutional Review Board

APPLICATION FOR REVIEW OF RESEARCH INVOLVING HUMAN SUBJECTS

	RESPONSIBLE FACULTY OR STAFF SUPERVISOR / INVESTIGATOR	NAME OF INVESTIGATOR(S)
Name	Dr. Fei Xue, advisor, USM	Alice Diana Cade Ferguson
Department	School of Mass Comm & Journalis	Communication
Campus Address	118 College Drive Box 5121	Box 43650/Burke-Hawthorne Rm 101
Phone	601-266-5652	337-280-5887
email	fei.xue@usm.edu	fergusondt@gmail.com

This Application is for a:

☐ **Thesis**

☒ **Dissertation**

☐ **Research Project**

TITLE OF PROPOSAL/PROJECT: New Models of News for Young Adult Users: Applying Ecological Psychology tot eh Study of News Consumption Among College Students

In making this application, I certify that I have read and understood the guidelines and procedures developed by The University of Louisiana at Lafayette for the protection of human subjects and that I will comply with both the letter and the spirit of the university's policies. I further acknowledge my responsibility to report any significant changes in the protocol involving human subjects and to obtain written approval from the Institutional Review Board for these changes prior to making these changes. I understand that IRB approval extends for one year, and if the project continues beyond the date of approval, then I will notify the IRB and request a renewal.

☒ By checking this box, I, Alice Diana Cade Ferguson, am herby signing my name. Date: March 3, 2013

I certify that as faculty advisor I have read and approve of the research described in this application and will provide guidance and support to the student as needed.

☒ By checking this box, I, Fei Xue, am hereby signing my name. Date: March 14, 2013

I certify that as Graduate School Dean I have been provided an opportunity to review the research proposed in this application and I approve the research described in this application, as acceptable for graduate student research.

☐ By checking this box, I, type graduate dean name, am hereby signing my name. Date: _____

This proposal has been reviewed and approved by The University of Louisiana Lafayette Institutional Review Board for compliance with the Code of Federal Regulations 45 CFR 46, Protection of Human Subjects and as amended.

☒ By checking this box, I, Nicole Müller, IRB Chair, am hereby signing my name. Date: March 14th, 2013

SP13-23 USM Approval form (exempt).doc
8/23/01

MEMORANDUM **The University of Louisiana at Lafayette**

[redacted] **Institutional Review Board**

IRB 00001474 **FWA00000758**

to: **Dr. Fei Xue & Ms Alice Ferguson, Mass Comm. & Journalism, USM**

from: **Nicole Müller, DPhil, Professor, IRB Chair**

re: **Approval of Proposal (SP13-23 USM) "**New models of news for young adult users: Applying ecological psychology to the study of news consumption among college students.**"**

date: **March 14th, 2013**

Your application for IRB review of the study at the Level of: _XX__exempt has been approved by the U.L. Lafayette Institutional Review Board.

Congratulations, you may begin collecting data.

Yearly reviews of IRB Status are not done for Exempt proposals. If, however, there are any changes in your data collection procedures, treatments, or subject population, please inform the IRB Chair in writing since substantive changes in the project will need to be reviewed. (Form accompanies this approval)

If there is any type of injury to any participant of this research you must notify the IRB within 24 hours. Failure to inform the IRB of injury to participants is grounds for suspension of the research.
When your project is complete, please contact the IRB chair to document the completion of the study using the enclosed form.

We wish you well with your project. If you have any questions about revisions and the need for re-review, please call me at 482-6489, or e-mail me at nmueller@louisiana.edu .

from the desk of:
Nicole Müller, DPhil
Professor, Communicative Disorders
University of Louisiana at Lafayette
P.O. Box 43170
Lafayette, LA 70504-43170
(337) 482-6489 email: nmueller@louisiana.edu

SP13-23 USM Approval form (exempt).doc
8/23/01

Original Proposal Number **SP13-23 USM**

The University of Louisiana at Lafayette
ANNUAL REVIEW OF APPROVED RESEARCH INVOLVING HUMAN SUBJECTS

Please e-mail one scanned (pdf) e-copy of the signed form to Nicole Müller, Chair, UL Lafayette IRB (CODI, PO Box 43170). If you can't scan the signed copy, please e-mail a copy of the completed Word file, and send one paper copy of the signed form. If you have questions or wish to check the status of your proposal, please contact Dr Müller at 482-6489, or at nmueller@louisiana.edu.

RESPONSIBLE FACULTY OR STAFF SUPERVISOR/INVESTIGATOR:
_____

DEPARTMENT AND CAMPUS ADDRESS:
_____
Phone_____
email: _____

NAME OF INVESTIGATOR(S):(if different)
_____

DEPARTMENT AND CAMPUS ADDRESS:
_____
Phone:
email:

TITLE OF PROJECT:
DATE OF ORIGINAL APPROVAL:
STATUS OF PROJECT: _____ Data Collection Complete
_____ Data Collection Continues (Complete next section.)

If there were any changes in your human subjects protocol, any complaints or problems or extenuating circumstances, please attach a written description to this form.

If you are unable to initial any of the following or if you have any doubts about certifying the following, please attach a written description of the situation to this form.
In requesting a renewal of IRB approval for this project, I certify that

(Initial in the space provided.)

(1) The human subjects protocol is the same as in the approved study named above. _____
(2) There have been no ill effects suffered by the subjects due to their participation in the study. _____
(3) There have been no complaints by the subjects or their representatives related to their participation in the study. _____
(4) There has been neither a change in the research environment nor new information which would indicate greater risk to human subjects than that assumed when the protocol was initially reviewed and approved._____
(5) the most current consent form accompanies this form. _____
(6) Education forms for all researchers have been submitted for this project _____

Number of subjects in original application. _____
Number of subjects run to date _____
Expected completion date _____

I certify that this project has been conducted according to the methods previously approved by the U. L. Lafayette IRB. I have read and understood the guidelines and procedures developed by The University of Louisiana Lafayette for the protection of human subjects and that I will comply with both the letter and the spirit of the University's policies. I further acknowledge my responsibility to report any changes in the protocol involving human subjects and to obtain written approval from the Institutional Review Board for significant changes prior to making these changes. I understand that IRB approval extends for one year, and if the project continues beyond the date of appoval, then I will notify the IRB and request a renewal.

_____
Signature(s): Principal Investigator(s)/Faculty Sponsor *Student* *Date Signed*

This proposal has been reviewed and approved by The University of Louisiana Lafayette Institutional Review Board for compliance with the Code of Federal Regulations 45 CFR 46, Protection of Human Subjects and as amended.

_____
Approved: UL Lafayette-IRB *Date Approved*

Approved ULLafayette IRB 11/17/2000/ rev 7/2002

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