The *eLiterate Revolution*:

From Orality to New Media – Literacy as Communication Technology

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ABSTRACT

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This thesis explores the potential theoretical contribution from the history of communications to literacy research in the field of educational studies. The relation between literacy and new media is examined from a history of communications perspective that treats literacy as communication technology. This thesis shows that current debates about literacy practices in the context of new media (eLiteracies) are grounded in, and continue to reflect, older debates concerning technology, literacy, culture, and society. Current research focuses predominately on the cultural, social, and ideological aspects of literacy (print or digital). This thesis asserts that prevailing theoretical models of literacy, notably the ideological model – one of the most influential theoretical frameworks in contemporary literacy research – are insufficient to effectively investigate relationships between literacy and new media technologies because they neglect technological dimensions that shape communication and literacy practices. The guiding research question this thesis addresses is: In what ways might the understanding of earlier shifts in communication technologies inform that of the transition from print literacy to eLiteracies?

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For Pascal,

l'homme de ma vie.

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Introduction

The literature review for this thesis covers diverse areas of inquiry. I begin with the educational literature on literacy and new media. The main findings taken away from this body of literature are: (1) Prevailing literacy frameworks, in isolation, are not proving entirely useful in furthering research efforts to understand new types of literacy brought about by new media technologies; (2) As a result, a trend toward reformulated and/or hybrid models has emerged; and (3) New theories and multidisciplinary research efforts are needed.

Contemporary theoretical perspectives

A review of the various new literacies discourses highlights that stand- alone literacy frameworks are not proving effective in the context of new media which places new demands on reading and writing, affords new possibilities for production, consumption and use of media, and imposes new requirements for what it means to be literate (Buckingham, 2000, 2006; Coiro, Knobel, Lankshear, and Leu, 2008). For example, while there are many critical literacy frameworks, one enduring model has been Freebody and Luke's (2003) 'four roles' model[1]. In their most recent revision of this longstanding framework, the role of the critical reader and writer involves four aspects: (1) breaking the code of texts; (2) interpreting and re-creating texts (spoken,

[1] Formerly referred to as the four-resource model (Luke & Freebody, 1997, 1999).

written, and visual); (3) using texts functionally; and (4) critically analyzing and transforming texts (Comber and Simpson, 2001; Larson and Marsh, 2005).

But, as some point out, simply re-fashioning well-accepted models of inquiry cannot remedy challenges new media pose. David Buckingham (2000) highlights the "need to take account of the diverse ways in which audiences use and interpret the media, and the social contexts in which they do so (p.97). Jay Lemke (2006) argues that, in the context of new media, critical literacy should be re-conceptualized so that it is viewed "not just as critique, but as a resource for the creation of alternative practices, values, and lifestyles"(p. 13).

Lankshear and Knobel (2004) suggest that Freebody and Luke's revised framework is unsuccessful in addressing literacy practices associated with new digital technologies because it continues to focus on textual *analysis* rather than textual *production* that new media make possible. They, in turn, have adapted Freebody and Luke's four-part framework. Taking into account aspects of new media production, their four roles model hinges on: 1) text designer, 2) text bricoleur, 3) text mediator, and 4) text jammer (Larson and Marsh, 2005).

As one leading literacy theorist, Brian Street (2006) confirms, "extensions, adaptations and new hybrid forms [of literacy models] are emerging" (p. 14). Based on my review of new literacies discourses, I found that contemporary approaches to examine literacy in the context of new media, herein referred to as *eLiteracies*, draw eclectically from critical, sociocultural, and social semiotic traditions of inquiry.

The critical paradigm, for instance, sees literacy as a potential source of oppression as well as a tool for empowerment and social change. Grounded in the fields of critical pedagogy, semiotics, and cultural studies, this perspective links literacy to social change. Developed, in part within the Frankfurt School, this paradigm critiques normalizing discourses and emphasizes the need for critical analysis of prevailing political and cultural ideologies, authoritarianism, and social inequalities in relation to normative schooling (Freire, 1971, 2003; Giroux, 2003; McLaren, 2003; Shor, 1992, 1996).

The sociocultural paradigm sees literacy as a phenomenon embedded in social values, traditions, and experiences. Rooted in the fields of linguistics, anthropology, and sociology, this paradigm holds that literacy is a social practice that can only be understood when examined within its historical, social, political, economic and cultural contexts. (Barton, Hamilton, and Ivanic, 1999; Cook-Gumperz and Gumperz, 1978; Cope and Kalantzis, 2000; Heath, 1983, 2000; Street, 1993, 1995, 1998, 2001, 2009).

This paradigm is also credited for introducing the now widely recognized notion of 'multiple literacies' (The New London Group Manifesto, 1996; Gee, 2000, 2003), which is a multiplicity of literacy discourses. This movement is concerned with issues related to access, critical engagement, power, identity, and the recognition that there are many legitimate forms of literacy. The concept of multiliteracies "begins with the assumption that people confront and negotiate the everyday world using a diversity of literacies with which to decode the multiple and densely layered environment of symbolic and iconic, cultural and social semiotic meaning systems" (Luke, 2000, p. 429).

For instance, Barbara Comber (Comber and Simpson, 2001) brings the ethnographic methods of the sociocultural perspective with the multiliteracies concept and with critical literacy practices to bear on early childhood literacy research (Larson and Marsh, 2005). Similarly, Anne Haas Dyson (1997, 2002), maintains that young children transform and reshape cultural material from various semiotic modes, social practices, and ideological tensions. She therefore draws from semiotic, sociocultural, and critical traditions of inquiry.

Finally, the social semiotic paradigm sees literacy as 'multimodal' forms of representation and communication. This paradigm is concerned with how meaning is produced, understood, and conveyed in all representational modes through all types of signs. Grounded in the fields of communications and linguistics, the semiotics orientation to literacy explores how signs are used in specific contexts emphasizing the significance of historical and cultural contexts and the diversity of interpretations (Kress & van Leeuwen, 1996; Kress, 2003).

Many theorists and practitioners are emphatic that the multimodal nature of contemporary hyper- texts demands a new understanding of reading, writing, grammar, text, and literacy. They argue that being literate in the new media requires a 'fluency', in a wide range of technological modes (Burnett and Myers, 2006; Hodge and Kress, 1988; Lemke, 2006; Kress and van Leeuwen, 2001; Evans, 2005; Has Dyson, 1997, 2002; Whitehead and Quinlan, 2002). For this reason, some researchers like critical literacy theorist, Jay Lemke (2006) combine critical and semiotic (multimodal) perspectives to investigate critical multimedia literacy.

Current methodological developments

The blending of these theoretical paradigms also entails the merging of several methodological frameworks. Literacy theorist, Gunther Kress (2003), who formulated the influential multimodality theory of literacy, sees the need to complement his conceptual framework with the strengths of the ideological model of literacy that grounds the sociocultural paradigm. This model of literacy from the sociocultural paradigm examines the relation between literacy, culture, and power.

In the same way, Street (2006), who developed the ideological model, foresees the uniting of approaches between the 'social practices' concept of his framework and Kress' idea of multi modality, both at the conceptual level as well as the applied level: "exploring the relationship between 'texts' and 'practices' might similarly provide a sound starting point for new approaches" (p. 14).

And there are, of course, integrated models of inquiry that reach beyond these main paradigms. The Film Education Working Group (1999)[2], for example, has crafted a typology for new literacies which merges core principles from media literacy, visual literacy, critical literacy and information literacy. This framework identifies three broad categories common to print, visual, electronic, and digital forms of literacy: 1) authors and audiences, 2) messages and meanings, and 3) representations and reality.

> These new literacies have as a central focus the development of students' engagement with texts and their concern for the meaning-making process, the constructed process of authorship, and questions about how texts represent social realities. They differ in their relative emphasis on the reader, the text, and the socio-historical and political contexts in which interpretations take place (Hobbes, 2008, p. 245).

[2] See Hobbes (2008).

The blending of diverse perspectives addresses some shortfalls of relying on any single perspective or theory to investigate eLiteracies. However, working with integrated approaches is challenging for many researchers because over the past several decades literacy inquiry has become increasingly specialized. For instance, those working in the area of New Literacy Studies (my initial area of focus) have little exposure to the complimentary areas of early childhood literacy, media literacy, or information literacy. To work effectively with blended frameworks and concepts, researchers will need to become proficient with branches of inquiry that extend beyond the parameter of their respective paradigms.

In summary, the re-working of Freebody and Luke's (2003) 'four-roles' model in critical literacy research illustrates the tendency to address problematic aspects of theoretical models that stem from the era of print literacy, with reformulated interpretations that seem better suited to new media technologies. The theoretical and methodological landscape has evolved into fusions of multiple literacy paradigms (Hobbes, 2008; Janks, 2000; Kress, 2003; Street, 2006). However, as this thesis will argue, trying to address the shortcomings of prevailing theoretical frameworks by relying on hybrid models that combine but do not necessarily address the deficiencies of the major paradigms may not yield effective approaches to understanding eLiteracies.

New media or new technologies?

At the outset, the new media literacy scholarship seemed comprehensive enough to tackle the subject of literacy and new media. However, when I presented my proposal to my thesis committee, two of my committee members, Professor Sandra

Weber (Dept. of Education, Child Studies) who has written extensively about children and technology and Professor Johannes Strobel (Educational Technology, now at Purdue University) asked on several occasions whether the proposed research focused on new media or technology. I am thankful they asked for this clarification because it forced me to explore the new media literature.

Defining new media

According to *New media: A critical Introduction*, "the unifying term 'new media' actually refers to a wide range of changes in media production, distribution and use" (Lister, Dovey, Giddings, Grant, and Kelly, 2009, p. 13). For these scholars, new media encompasses: (1) innovative ways for people to communicate with one another (social network sites, blogs, chatrooms, discussion forums, podcasts, avatar-based interaction); (2) new ways to experience the world (augmented reality, massive multiplayer online role playing games (MMORPGs), virtual simulations); (3) new forms of representation (Facebook, avatars, personal web pages, zines, and virtual social worlds such as Second Life); and (4) inventive ways to produce and consume media (fanfiction, teletubing, reality TV, and multimedia editing).

"'New media' has gained currency as a term because of its useful inclusiveness. It avoids, at the expense of its generality and its ideological overtones, the reductions of some of its alternatives" (p. 12). The term 'digital', for example, while an accurate descriptive label, "it presupposes an absolute break (between analogue and digital) where […] none in fact exists. Many digital new media are reworked and expanded versions of 'old' analogue media" (p. 10).

The *Handbook of New Media* (Lievrouw and Livingstone, 2006) defines new media as

> information and communication technologies and their associated social contexts, and specifically […] as infrastructures with three components: the *artefacts or devices* used to communicate or convey information; the *activities and practices* in which people engage to communicate or share information; and the *social arrangements or organizational forms* that develop around those devices and practices (p. 2).

As exemplified in the above quote, contributors to the Handbook reject "definitions of new media based solely on particular technical features, channels or content" in favour of a working definition that takes into account technological, socio-political, and economic elements (p. 2).

Drawing parallels

In my review of the new media literature, I found that many trends and challenges under discussion in new media studies (NMS) have parallels with those that pertain to the discourse on the relationship between literacy and new media in educational studies.

(i) *Like new media literacies, the term 'new media' in the NMS literature refers to a range of phenomena*. As Lister, et al. (2009) point out, "while a person using the term 'new media' may have one thing in mind (the Internet), others may mean something else (digital TV, new ways of imagining the body, a virtual environment, a computer game, a blog)" (p. 12).

Even within specific branches of literacy inquiry, there is no single agreed upon definition of literacy, let alone eLiteracies (Coiro, Knobel, Lankshear, and Leu, 2008). Critical literacy theorists, Henry Giroux (2003) and Peter McLaren (2003), for instance,

note that while critical theory serves as a common theoretical foundation "there is no singular, normative version of critical literacy" (Larson and Marsh, 2005p. 40). Thus, the wide range of meaning the umbrella terms of 'new media' and 'new media literacies' encompass makes agreement on definitions next to impossible (Lievrouw, A. & Livingstone, 2006).

(ii) *Both areas of inquiry are fragmented*. Lievrouw and Livingstone (2006) point to the "Balkanization" of new media studies "into dozens of specialized, non-communicating academic niches" (p. 1). This mirrors the problem in educational studies where 'multiliteracies' have developed in isolation with no cross-pollination in research between the various tenets of literacy inquiry occurring despite compatible interests (Tyner, 1998; Buckingham, 2006). My personal experience also confirms that literacy studies, in the field of education, have become increasingly fragmented. Researchers tend to specialize within a specific branch of inquiry (e.g., New Literacy Studies, critical literacy), often with minimal awareness of other related areas (e.g., Language Arts, Information literacy, Early childhood literacy, media literacy). Consequently, there is little integration amongst potentially complementary bodies of literacy scholarship[3].

[3] My personal experience includes: two reading courses devoted to the theme of literacy and technology in preparation of this thesis; guest lectures for the course 'Literacy and Development' (ESTU 642c/4, 2009), Educational Studies Master's Program, Concordia University; and my assistance with research for a special topics course 'Children's Media Literacy: Issues and Research' (CHST 645A/4, 2008), in the Child Studies Master's Program, also at Concordia University under the direction of Professor Sandra Weber.

(iii) *New media, like eLiteracies, are defined by preceding technologies*. In NMS new media are typically defined in relation to mass media. Discussions addressing the relationship between new media and culture stem from earlier debates in media studies concerning the effects of technology and media on human mentality, culture and society (Lister, *et al*., 2009; Poster, 2006). In educational studies, eLiteracies are defined in relation to print literacy. Discourses surrounding relationships between culture, literacy, and the purposes and uses of new media are similarly based on earlier debates concerning the effects of literacy attainment on individual higher order cognitive abilities and societal and economic progress.

Hence, the theories that developed in response to earlier technologies of mass communication and print are not necessarily suitable now. For instance, Lievrouw and Livingstone (2006) state

> Our main conclusion is that new media require us to reconsider the longstanding dependence within media research on theories and phenomena of mass society [….] Research that formerly examined audiences, reception and effects must now account for users and uses, interactivity, reconfiguration, and reciprocity (p. 2, 3).

(iv) *Both fields of inquiry stress the need for multidisciplinary research efforts.*

According to the *Handbook of New Media* (Lievrouw and Livingstone, 2006)

> The inextricably linked phenomena of information, communication and mediation are no longer the sole province of communication research and a few related specialties; today they are the focus of intense interest and study across the social sciences, arts and humanities. Multidisciplinary approaches are thus essential in new media studies, even thought they pose theoretical and methodological challenges and bring hitherto distinct fields into conjunction (and sometimes confrontation) with each other (p. 3).

Many maintain that literacy or 'fluency' in and with the new media calls for new theories to examine, understand, and explain the nature of literacy in the context of new media (Buckingham, 2006; Coiro, Knobel, Lankshear, and Leu, 2008; Kress, 2003; USC Annenberg School Center for the Digital Future, 2004; Whitehead and Quinlan, 2002). However, in the field of educational studies, research does not yet truly reflect this identified need. For instance, as can be seen from the examples of hybrid models discussed earlier, Kress and Street are both looking to other models *within* their scope of inquiry which they deem compatible and complementary to their own respective frameworks. This, however, does not address the need for new theories. I*ntra*-disciplinary re-mixes are common amongst the various hybrid literacy frameworks.

Backing up to move forward

My literature review of new media scholarship unexpectedly led to the field of Orality and Literacy Studies[4], an older interdisciplinary area of inquiry that began in the classics and serves as the theoretical background to media studies as well as media ecology studies [5] (Gibson, 2006). In this stream of inquiry, literacy has consistently been viewed and analyzed as a *communication technology* that fundamentally changes human thought, alters societies and cultures thereby advancing intellectual and

[4] Orality is a key concept and subject of investigation across fields ranging from classics, archaeology, religion, history, philosophy, and communication studies to comparative literature and anthropology. Literacy has long been a key theme of research in ancient history (Thomas, 1992; Harris, 1989), in the classics (Parry, 1928/1937, 1971; Lord, 1964; Havelock, 1976, 1991), and in the history of ideas (Gibson, 2006). The vast and complex literature from these areas has been brought together under the umbrella of orality and literacy studies within the history of communications.

[5] Media ecology is an interdisciplinary field of media theory concerned with the examination of communication systems as environments.

scientific development (Havelock, 1963, 1982, 1986, 1991; Gibson, 2005, 2006; Innes, 1951/2008; McLuhan, 1962, 2003; Olson, 1994; Olson and Cole, 2006; Ong, 1991). Current new media literacy scholarship is silent on this steam of knowledge.

The tradition of understanding literacy as communication technology began with classicist Eric Havelock's theories concerning the transition from orality to alphabetic literacy in ancient Greece. Havelock's hypotheses concerning this first major shift in modes of communication were taken up and expanded upon by Canadian economic historian and communications theorist, Harold Innes, and media theorist, Marshall McLuhan, and other early media scholars as an approach for understanding revolutionary shifts in communication technology.

This stream of inquiry that developed and matured within the communications field is not present in educational studies literature. The fact that the seminal ideas of Innes and McLuhan who drew from Havelock's theories to formulate their own hypotheses concerning major transitions in communication technologies and the effects of literacy are notably absent in educational literature.

In the orality and literacy studies scholarship, I found that many questions and hypotheses relating to the shift from orality to literacy and its impact on cognitive processes, social behavior, and cultures in the ancient Western world seemed highly relevant to the transition from print literacy to hypertext that is currently a focus of so much discussion in the educational literature.

In short, I realized that a much older (and controversial) debate regarding the effects of technology and literacy on oral cultures was strikingly similar to contemporary

discussions of the effects of new media on contemporary society and literacy practices. This prompted me to back up in order to move forward.

To revisit older findings from the field of the history of communications to shed some new light on the relationship between literacy and new media is in keeping with the methodological stance of leading critical new media scholars, Lister, Dovey, Giddings, Grant, and Kelly (2009) who stress the need to study new media from a historical perspective in order to move their field forward. They deem it necessary to return to a body of theories that seemingly made little sense fifty years ago, but which today seem very pertinent to those who seek to understand new media. This thesis suggests that a similar reasoning applies to the study of eLiteracies. Indeed, several theories of literacy long-rejected in educational studies appear today very relevant in relation to both print and new media when considered from a historical communications perspective that my thesis takes.

The review of literature presented in this introduction, along with my key findings that emerged from media studies and the more recent field of new media studies, and recent research in orality and literacy studies, has led me to believe that the potential knowledge contribution from the history of communications to literacy research in the field of education is yet to be realized. The history of communications encompasses orality and literacy studies, media studies, media ecology studies, and new media studies.

Thesis argument and approach

Current research focuses predominately on the cultural, social, and ideological aspects of literacy (print or digital). This thesis asserts that prevailing theoretical models of literacy, notably the ideological model– one of the most influential theoretical frameworks in contemporary literacy research (Kim 2003) – are insufficient to effectively investigate relationships between literacy and new media technologies because they neglect technological dimensions that shape communication and literacy practices.

New media necessitates an interdisciplinary inquiry in the search for new theories to examine, understand, and explain eLiteracies (Buckingham, 2006; Coiro, Knobel, Lankshear, and Leu, 2008; Kress, 2003; Whitehead and Quinlan, 2002; USC Annenberg School Center for the Digital Future, 2004). Paradoxically, literacy studies, and by extension new media literacy research, are in fact already grounded in orality and literacy studies, a multidisciplinary area of inquiry in the field of communications arguably well positioned to offer guidance.

This thesis explores the potential theoretical contribution from the history of communications to literacy research in the field of educational studies. The relation between literacy and new media is examined from a history of communications perspective that treats literacy as communication technology. The guiding research question this thesis addresses is: In what ways might the understanding of earlier shifts in communication technologies inform that of the transition from print literacy to eLiteracies?

Thesis structure

Chapter I, "Tracing the path backwards" and Chapter II, "Aligning ideas, making connections" collectively show that current debates about literacy practices in the context of new media are grounded in, and continue to reflect, older debates concerning technology, literacy, culture, and society. Key findings presented in Chapter I result from my review of the new media literature and orality and literacy literature. Chapter II establishes theoretical links between orality and literacy studies, media studies, cultural studies, and literacy inquiry in educational studies.

Chapter III, "The *eLiterate Revolution*" takes an in-depth look at classical research that informed Innes' 'bias of literacy theory' and Havelock's three-part theory of ancient literacy. Drawing upon these theories, I take the Greek archetype as a model to understand and hypothesize about the transition from print-based literacy to eLiteracies currently underway.

"The way forward' closes this thesis with a few suggestions, examples, and questions for future research of eLiteracies.

"[I]t is precisely our sense of the 'new' in new media which makes history so important – in the way that something so current, rapidly changing and running toward the future also calls us back to the past".

(Lister, Dovey, Giddings, Grant, and Kelly, 2009, p. 65).

Tracing the path backwards

Chapter I

Key findings

The first two key findings that follow result from my review of the new media literature. The first finding, 'New media, old debate', situates a central discussion concerning the effects of new media within in a former debate between Canadian literary and media theorist, Marshall McLuhan and British cultural and media theorist Raymond Williams about the effects of mass communications. The second finding, 'Cultural analyses of new media are not enough' examines why Williams' cultural interpretation of technology and media that continues to frame contemporary approaches to technology in media studies and cultural studies is increasingly being challenged in the new media scholarship for failing to adequately capture the technological and physical aspects of new media culture and technologies. The final finding, 'Media studies, literacy studies – common roots', results from tracing the origins of McLuhan's *Electronic Revolution* back to classicist Eric Havelock's *Literate Revolution* in ancient Greece in the orality and literacy studies literature.

Finding No. 1 – New media, old debate

In the most recent edition of *New Media: A critical introduction*, Lister et al., (2009) clarify that "new media are not simply new media but also new technologies. For this reason, "the question of the place of technology in culture has again become central" (p. 329). In their opinion, "the debates about new media, what it is, what it might be, what we would like it to be, rehearse many positions that have already been established within media studies and critical theory" (p.77).

A central debate in new media studies (NMS) emanates from an earlier dispute between Marshall McLuhan and Raymond Williams (Poster, 2006, Gibson, 2005). Although these two icons wrote about mass communications during the 1960s and 1970s, "their analysis of the relationships between technology, culture and media continues to resonate in contemporary thought" (Lister et al., 2009, p. 77).

McLuhan argues that media shape culture[6]. He advances three major claims concerning media: (i) Media change our physical and sensory relationship to our environment; (ii) It is the nature of media more than the content of the communication that shape society, and (iii) The technological world becomes the natural world once society becomes fully saturated in a media. He believes that media bring about radical physical, mental, and cultural change. "McLuhan's arguments are at the core of claims that 'new media change everything'" (p. 77).

Conversely, Williams (1974, 1977) argues that culture and society shape technology and media. The main premises he advances are: (i) Technologies are

[6] McLuhan makes no distinction between technology and media as he views both as extensions of the human body and senses (Baudrillard, 1997; Poster, 2006).

historically and socially shaped; (ii) There is nothing inherent in the nature of a media technology that is responsible for the way a society uses it; and (iii) Technology and media have no direct effects on culture. Williams believes that technology and media are incapable of forging social, cultural, or physiological change. His arguments underlie the claims that new media change nothing; they simply take forward existing practices (Lister et al., 2009).

" The question of whether technology is an agent which causes social and cultural change (technological determinism) formed the crux of the debate between McLuhan and Williams" (p. 323). McLuhan insists that we must look deeper than media content to the technological *effects* of media and how they impact culture and how we think. Williams is adamant that "the idea of 'technological effect' must be dropped altogether in favour of an account of social change that concentrates on the intentions and purposes of the groups who use technologies in the act of changing things" (p. 327).

Williams won the debate hands-down. Dismissed as a "crude technological determinist", McLuhan's theories of media were widely discredited (p. 80). As a result, "the cultural approach to technology became normalized" and "continues to frame the media and cultural studies approach to technology today" (pp. 380, 328). New media continue to be understood "as fully social institutions which are not reducible to their technologies" (p.10).

Finding No. 2 – Cultural analyses of new media are not enough

Cultural analyses of new media are increasingly being challenged. Some assert that a purely cultural reading of new media is inadequate because it fails to account for the technological and physical aspects of new media technologies and culture (Bolter and Grusin, 1999; de Kerchove, 1997; Latour, 1993; Poster, 2006; Sterling, 1999). For Lister et al. (2009), the problem with Williams' account of technology is that it attends "simply to the social constructedness of technological phenomena" (p. 406). In their judgement, Williams' "theory of technology, which accounts for [technology] *solely* as a social formation made up of diverse social purposes, is *false* if it is taken as the claim that *such purposes are all that technology is*" (p. 407). For them, the "physical properties of technologies are real. They change the environments and ecologies, natural and social, in which they exist" (p. 14).

Bruno Latour (1993), a leading figure in the related interdisciplinary field of Science and Technology Studies (STS), similarly argues that a culturalist reading of technology is not enough: "any adequate answer to the question 'what is technology?' must address it both from the cultural and the physical dimensions" because "reality comprises cultural, physical and technological phenomena" (cited in Lister *et al*, 2009, pp. 407, 408). For Latour, technologies provide environments where social and cultural interactions can take place. Thus, "social networks, the environments in which humans act, are already technological, physical, *and* cultural" (p. 99).

In contrast to Williams who concentrates on the cultural dimensions of technological phenomena, "McLuhan stresses the physicality of technology, its power to

structure or restructure how human beings pursue their activities, and the manner in which extensive technological systems form an environment in which human beings live and act" (p. 85). Those who see new media as change-drivers creating new environments and ways of perceiving and relating to these settings find McLuhan's physical analysis more appropriate than that of Williams. For this reason, "McLuhan's ideas have undergone a renaissance – literally a rebirth or rediscovery – in the hands of contemporary commentators, both popular and academic, on new media" (p. 73).

> [I]t is clear that the physicalist basis of McLuhan's theses, if not the specific theses themselves, offers the prospect of a framework within which cyberculture […] may be examined. […] such a basis is not merely a product of theorising about electronic technologies in the 1960s but is actually a core element of contemporary cyberculture. The contemporary centrality of such theorising is further demonstrated, in the popular realm, by the magazine *Wired* canonising McLuhan as its 'patron saint', and in the increasing amount of new media research being done around McLuhan (p.329).

In addition to Williams' cultural interpretation of technology and media being challenged, his reading of McLuhan's theoretical work concerning the deterministic effects of media is being questioned. Lister, *et al*. (2009) develop the case that Williams and McLuhan are working with different understandings of causality, and therefore have different explanations of the deterministic effects of media.

According to Lister et al., (2009), the issue of the effects of new media is "one of the main sources of the present clash of discourses around the significance of new media" (p. 78). Not surprisingly, McLuhan and Williams "continue to underwrite much contemporary debate around the issue of technological determinism" (p.329). Williams critiques McLuhan most strongly for his assertion that technology acts as an autonomous agent that brings about cultural and social change. Recent criticism of

Williams' stance is that it fails to recognize fundamental changes in human behaviour, social relations, lifestyles, ways of communicating and functioning that new media technologies are bringing into being (Bolter and Grusin, 1999; Latour, 1993; Poster, 2006; Sterling, 1999).

Finding No. 3 – Media studies, Literacy studies – common roots

McLuhan's theories of media are based on Havelock's theory of ancient literacy (Gibson, 2005; Havelock, 1991). By tracing the source of McLuhan's theories of media back to Havelock's theory of ancient literacy I was able to identify the foundational area of orality and literacy studies common to both media studies and literacy studies.

Havelock and cultural and religious historian and philosopher, Walter Ong are largely credited for establishing orality and literacy studies[7]. Central to this body of research are two theses: (1) Shifts in technology have revolutionary effects on societies and cultures; and, (2) The alphabet is a technology that restructures human thought (Gibson, 2005, 2006).

The first pillar of Havelock's (1963, 1982, 1986) theory of literacy in ancient Greece is the premise that shifts in communication technologies are not abrupt, but unfold over a very long time with far-reaching effects that can only be understood with

[7] The writings of Havelock and Ong, whose original writings I have worked from, are mostly known to contemporary researchers in educational studies through secondary sources. Notable secondary sources include: *The psychology of literacy* (Scribner and Cole, 1981); *The literacy myth: Literacy and social structure in the 19th century* (Graff, 1979); *Way with words* (Heath, 1983); *Literacy in theory and practice* (Street, 1984); *Social Literacies* (Street, 1995); "Orality and literacy: From *The Savage Mind* to *Ways with Words"* (Gee, 1986); and "The legacies of literacy: From Plato to Freire through Harvey Graff" (Gee, 1988).

historical distance. In his ground-breaking work *Preface to Plato,* he (1963) argues that the introduction of the phonetic alphabet (~700 BCE) transformed Greek culture from an oral to a literate society. He refers to the invention of the phonetic alphabet system as the 'Greek Revolution' because words could be sounded out without knowing the language and, compared to other non-phonetic writing systems, little context was needed which greatly simplified the difficult task of learning a language. Havelock (1963, 1991) pinpoints the actualization of Greek literacy as having occurred with the Athenian enlightenment that took place during the 5th Century BCE. The wave of cognitive and social changes that ensued, he argues, paved the way for the advancements that led to Western civilization (Thomas, 1992).

The second pillar of Havelock's theory is that new modes of communication do not replace previous forms. Rather they co-exist. In *The Muse learns to write*, Havelock (1986) asserts that the uniqueness of Greek literacy is the lengthy transition period from oral to literate communication. "The partnership between ear and eye was unique, and has remained so to this day" (p. 126).

> Havelock (1986) had argued that there was 'a long period of resistance to the use of letters' following the invention of the phonetic alphabet, so that the transition from orality to literacy took centuries longer than previous scholars had supposed. 'During this transitional period, oral habits of communication and instruction persisted alongside and in tension with the new modes of thought brought on by literacy (Gibson, 2005, p. 3).

Havelock and other classicists (Parry, 1971; Whitman, 1958) view oral poetry as the primary vehicle of communication in ancient pre-literate Greece (Gibson, 2006). The original functional use of poetry was to store cultural information for re-use and to establish and teach tradition (Havelock, 1986). Homer's oral epics the *Iliad* and the

Odyssey, for example, provided a way of preserving and conveying social habits, customs, and conventions (Parry, 1971; Foley, 1999). After a long period of co-habitation, the technology of the alphabet eventually supplanted the technology of memory systems. “The language of the Greek epic and drama gradually gave way to the language of theoretical analysis. Plato was the driving force” (Havelock, 1986, p. 15).

The third and final pillar to Havelock’s theory is that modes of communication impact thought processes. According to Havelock, the phonetic alphabet laid the foundation for abstract, analytical thought.

> Equipped with an optimal writing system, that is, one capable of preserving in writing everything that could be said orally, the stage was set for the evolution of a new, now literate, form of discourse and hence of thought. The literate mode depended not on stated memorability but on stated principles, on explicit definitions of terms, on logical analysis and detailed proofs (Olson, 1994, p. 36).

Havelock (1984) argues that the transition from oral to literate patterns of communication prompted “changes in vocabulary, syntax, and in basic categories of human thought” (p. 24). Oral syntax, for example, “describes an action, but not principles or concepts” (p. 24). “Literacy, that would eventually replace oral memory, is a reflexive syntax of definition, description, and analysis” (p. 25).

Havelock’s *Literate Revolution*

Havelock refers to the tension between the oral tradition of communication and instruction and the “artificial memory” of written texts in ancient Greece as the “collision of cultures” (p. 71).

> Havelock, relying on the work of Milman Parry on Homeric verse[8], developed the argument that the use of writing to preserve information permitted a radical discontinuity with the oral poetry which had been used for that purpose. He saw Plato's attacks on the poets in the Classical Greek period as a manifestation of the rivalry between these competing traditions (Olson, 1994, p. 36).

The 'Literate Revolution' refers to the 'tipping point' (Gladwell, 2002) in Ancient Greece where the Homeric state of mind gives way to the Platonic state of mind. That is, literacy transcends orality as the dominant means of communication and information storage (Brockmeier & Olson, 2009). The significance of this, argues Havelock (1963, 1991), was a shift from an oral-based form of education to a literate, written one.

The technologizing of the spoken word

According to Ong (1991), there are two types of cultures – oral and literate. Or, more precisely, primary oral cultures (relatively) untouched by writing and literate cultures dominated by reading and writing. Ong believes that there are fundamental differences between these two types of cultures, beginning with thought processes. Because people from oral and literate cultures think differently, he argues that they also have different ways of understanding and experiencing the world, different ways of communicating, different mental abilities, skills, and ways of organizing knowledge.

Building on Havelock work, Ong advances the premise that modes of communication impact thought processes. For instance, since primary oral cultures have no written texts, they are unable to re-read to recover lost thought. With no way to

[8] Classicist Milman Parry (1902-1935), showed that the *Iliad* and the *Odyssey* are oral works that developed over several centuries through generations of poets. His findings entirely changed the study of Homer that had previously assumed that these were literate works written by one poet (Gibson, 2006).

"backloop" outside the mind, thought moves forward slowly in order to retain processed information, or "the just said" (p. 40). Conversely, re-reading written materials provides a way to recapture lost thought. This "backward scanning" allows thought in literate cultures to leap forward quickly (p. 104).

If people from oral and literate cultures think differently, as Ong and Havelock argue they do, then a shift from one mode of communication to another, i.e., from primary orality to literacy, would logically lead to changes in thought processes. According to Ong and those whose work he relies upon (Havelock, 1986; Lord, 1964; Luria, 1976; Parry, 1971; Vygotsky, 1986), people in oral cultures think in terms of practical situations. As people gain some literacy abilities they begin to mix concrete or situational thinking with abstract, categorical thinking, suggesting that, in the transition from orality to literacy, the restructuring of the thought processes takes place in stages.

In *Orality and Literacy: The Technologizing of the Word*, Ong (1991) argues that the transition from primary orality to writing and literacy brings about the internalization of thought which alters thinking and speech (Bingham, online, n.d.).

> Writing has to be personally interiorized to affect thinking processes. Persons who have interiorized writing not only write but also speak literately, which is to say that they organize, to varying degrees, even their oral expression in thought patterns and verbal patterns that they would not know of unless they could write (Ong, 1991, p. 56).

For Ong, writing separates thoughts from their sources of origin. This crucial detachment**,** or distancing, allows for the existence, examination, and questioning of discourse and greater objectivity than is possible with the spoken word. Writing also

allows for the development of a more precise and expanded vocabulary. "All thought, including that in primary oral cultures, is to some degree analytic: it breaks its materials into various components. But abstractly sequential, classificatory, explanatory examination of phenomena or of stated truths is impossible without reading and writing" (p.8).

Ong's (1991) over-arching thesis is that writing is a technology that transforms thought and expression that leads to analytical thought. "Compared to natural oral speech, writing is completely artificial"(Ong, 1982, p. 1). That is, "writing (and especially alphabetic writing) is a technology" (p. 81). According to Ong, the phonetic alphabet "is by far the most adaptable of all writing systems in reducing sound to visible form"(p.4). Hence, for him, alphabetic literacy represents the technologizing of the spoken word (Mizrach, online).

Akin to Havelock, Ong (1984) also views the creation of the phonetic alphabet as a major force that brought about a literate society in ancient Greece. He too argues that writing and literacy have far-reaching effects that slowly, yet surely, change non-literate cultures. "The introduction of writing into a culture changes thought processes, the forms and the genres of verbal expression, political and family and other social structures, religious beliefs and organizations, economic life, the nature of education, and much else" (p. 184).

From the *Literate Revolution* to the *Electronic Revolution*

"[I]n the 1960s the hypothesis was pushed forward that the major features that characterize our own 'modern' societies, our sciences, and our psychology are simply

by-products first of alphabetic writing and later printing" (Olson, 1994, p. 36). McLuhan was profoundly influenced by Havelock's overarching thesis that revolutionary shifts in technology usher in new states of mind and fundamentally transform culture and social organization. Following Havelock, McLuhan ties Western progress to the alphabet, the printing press, and the ever-increasing spread of literacy (Brockmeier and Olson, 2009).

> McLuhan (1962) was, of course, among the first to explore the relations between communication technologies, particularly the alphabet and the printing press, and the "galaxy" of intellectual, artistic and social changes that occurred with the Greeks and again at the end of the Middle Ages (Olson, 1994, p.5).

"McLuhan used Havelock's *Literate Revolution* as a model for the *Gutenberg Revolution* and the *Electronic Revolution*" (Gibson, 2005, p.2). He associated the invention of the printing press with "the introduction of linear thinking" and the constricted mindset of modernity (Havelock, 1986). The *Gutenberg Revolution* refers to the transition from written script to print and the negative psychological and social effects ensued as a result of the printing press (Gibson, 2005; Olson, 1991; Thomas, 1992). McLuhan linked the emergence of networked electronic communication to the re-introduction of non-linear, 'mosaic', ways of thinking and collective mindsets of pre-literate oral cultures. The *Electronic Revolution* describes the transition from print to hypertext, the return to spontaneous communication, and the transformative effects of media on our physical and sensory relationship to the world (McLuhan, 2003).

Havelock's theories concerning the transition from primary orality to literacy were taken up and expanded upon by McLuhan and other early media scholars as a way

to understand revolutionary shifts in communication technology (Gibson, 2006, Innes, 1951; Ong, 1991).

Summary of findings

The question of whether or not new media are capable of forging social, cultural, or physiological change is a continuation of a conversation that began in media studies and cultural studies in the 1960s between McLuhan and Williams surrounding technology, culture, and the effects of mass communications. McLuhan's concern is with the physical properties of media and how they change our thinking, our environment and our relation to it. Williams' concern, on the other hand, lies with the cultural dimensions of media and the uses and purposes of technological phenomena. McLuhan's assertion that media act as autonomous agents that bring about radical mental, cultural, and social change led to the wide rejection of his theories of media. Consequently, cultural approaches to understanding and analysing technology and media became institutionalized.

However, a theoretical sea-change appears underway in New Media studies, and related fields of Science and Technology Studies, Cyberculture Studies and Technoculture Studies. Cultural readings of new media are increasingly being viewed as unsuitable for understanding and explaining the fundamental changes new media technologies are introducing because they do not recognize the physical and technological aspects of our electronically networked world. As a result, McLuhan's long-rejected ideas about media and their impact on culture and society are being reconsidered in light of new media.

Havelock's argument that changes in communication technologies alter thought and transform cultures and societies laid the groundwork for understanding literacy as a communication technology. Havelock viewed the introduction of phonetic alphabet as the critical factor in the formation of a literate Greek population because it was simpler to learn and more precise in capturing the spoken word than other non-phonetic writing systems. Thus, for Havelock, the phonetic alphabet and alphabetic literacy marks a turning point in human cognition and intellectual progress.

Havelock's thesis that the phonetic alphabet brought about the transition in ancient Greece from oral ways of preserving and conveying knowledge to the use of writing, conceptual ways of thinking and organizing information and a literate tradition that permitted the cumulative growth of knowledge is based on his theory of literacy.

Havelock's theory of literacy, which media theorists expanded upon, rests on three key premises: (1) Shifts in communication technologies are revolutionary but slow to unfold; (2) New and old modes of communication co-exist for a very long time before one supplants another as a dominant means of communication; and (3) Modes of communication affect thought processes.

Working from Havelock's thesis that radical changes in communication technologies are accompanied by changes in ways of thinking that reconfigure culture and social organization, McLuhan develops his theoretical framework to explain succeeding epic shifts communication technologies and the colossal effects that ensued in their wakes. He associates the wide distribution of standardized printed texts, larger literate populations, and linear cause-and-effect constrained thinking to the invention of

the printing press. Correspondingly, he ties innovative non-linear thinking to the appearance of dynamic (many-to-many) electronic communication networks.

Havelock's (1963) *Preface to Plato* and McLuhan's (1962) *The Gutenberg Galaxy* uprooted conventional assumptions about media. These landmark publications also "gave new impetus and perspective to the serious study of literacy" in numerous disciplines (Olson, 1994, p. 38)[9].

[9] Olson also includes the extended essay "The consequences of literacy" by Goody and Watt (1963/1968) as the third major publication that flipped conventional positions concerning media and literacy.

Aligning ideas, making connections

Chapter II

This chapter situates what is known in educational studies as the autonomous and ideological models of literacy within a broader discussion about communication technologies, literacy, media, culture and society. Theoretical linkages between literacy theorist, Brian Street, (whose theoretical framework grounds the sociocultural literacy paradigm) and Raymond Williams are considered. The connection between Marshall McLuhan and Eric Havelock (who are associated with the autonomous model of literacy) and the scholarship that developed as a result of this connection is further discussed. This chapter concludes by considering the significance of these linkages and their implications for future research of eLiteracies.

The Williams-Street connection

My effort to understand McLuhan's theories of media, and Williams' counterarguments was crucial to finding a little known link between literacy studies and media studies. Historian Rosalind Thomas (1992) traces the intellectual origin of what literacy theorist Brain Street later termed the 'autonomous model of literacy' back to McLuhan: "methods of communication (i.e., literacy) are matters of technology only" (p. 24). Thomas' line of thought triggered one connection, then another.

While the major claims concerning media advanced by McLuhan were unfamiliar to me, those of Williams resonated with Street's critical sociocultural approach to literacy (my original starting point). In substituting the term *media* with the term *literacy*, I found Street's theoretical framework to be grounded in Williams' premises concerning the social shaping of technology and media.

Williams argues that "media can only take effect through already present social processes and structures and will therefore reproduce existing patterns of use and basically sustain existing power relations"(Lister et al., 2009, p.78). Street (1995) formulated the ideological model of literacy in opposition to the autonomous model to explain the relationship between literacy and power.

> I use the term 'ideological' to describe this approach, rather than less contentious or loaded terms such as 'cultural', or 'sociological', etc., because it signals quite explicitly that literacy practices are aspects not only of 'culture' but also of power structures. The very emphasis on the 'neutrality' and 'autonomy' of literacy by many writers is ideological in the sense of disguising this power dimension (p. 161).

Williams argues that technologies are historically and culturally shaped and cannot be separated from questions of *practice* (e.g., use, content). For him, "a medium is only part of a wider practice, a material that is worked upon to achieve human purposes pursued in determining social contexts; a means to an end" (Lister *et al*., 2009, p. 89). His 'social shaping of technology' thesis calls for "an examination of (1) the reasons for which technologies are developed, (2) the complex of social, cultural, and economic factors which shape them, and (3) the ways that technologies are mobilised for certain ends"(p.86).

For Street (2003), "literacy practices refers to the broader cultural conception of particular ways of thinking about and doing reading and writing in cultural contexts" (p. 79). Street connects literacy practices to larger social agendas like Williams links cultural practices to larger social objectives. For example, he claims that, during the 1970s in Iran, "literacy was taught in the context of national policies, themselves the product of specific ideological and literary traditions" (p. 71).

Williams' thesis that culture shapes media led to Street's premise that culture shapes literacy practices. Williams' assertion that its how media are used that matters sets the background for Street's argument that it is the uses and purposes of literacy that counts. In addition, Williams' viewpoint that media are tools of social control supports Street's perspective that literacy is a tool of power that can be used to establish social hierarchy and maintain the status quo.

The ideological model of literacy is associated with anthropology, partly because of its extensive use of 'ethnographic' methods to examine local literacy practices across different cultural contexts[10]. However, while Street (1984) borrows from anthropological methodology, his theoretical framework is, in fact, indebted to British Cultural Studies, in general, and Williams' work in particular (see Appendix A: Literacy practices in Iran).

[10] Street's use of ethnographic methodology has been called into question (see Buckingham, 2000; Collins and Blot, 2002).

The McLuhan-Havelock connection

McLuhan's thesis that media shape culture' sprang from Havelock's premise that modes of communication, i.e., literacy, shape culture. Correspondingly, McLuhan's assertion that media change our thinking processes developed from Havelock's thesis that changes in modes of communication alter thought processes.

To the best of my knowledge, literacy researchers in educational studies have missed the theoretical link between McLuhan and Havelock and the scholarship that developed as a result of this connection.[11] One reason for this is that two distinctly different steams of inquiry developed from Havelock's theories.

The first stream served as the theoretical platform to media studies and media ecology studies, and matured within the field of communications (Gibson, 2005). In this stream, literacy has consistently been viewed and analyzed as a communication technology that fundamentally changes human thought, and alters societies and cultures by advancing intellectual and scientific development (Havelock, 1963, 1982, 1986, 1991; Gibson, 2005, 2006; Innes, 1951/2008; McLuhan, 1962, 2003; Olson, 1994; Olson and Cole, 2006; Ong, 1991).

The second stream of inquiry (partially) informed the early cognitive orientation to literacy which began within the fields of psycholinguistics, cognitive psychology, and linguistic anthropology and later matured within the field of educational studies (Gee, 1986). In this stream, literacy is understood as: (1) a set of skills that lead to higher order cognitive abilities and social and economic progress; (2) a social practice and an

[11] A notable exception is the work of Canadian educator David Olson who has followed, and contributed to, both lines of inquiry for several decades.

ideological construct; (3) a discourse; (4) a tool for empowerment and social change; and (5) multimodal forms of representation and communication. Analyses of literacy from these multiple viewpoints have been similarly wide-ranging.

Because two distinctly different branches of thought have developed from Havelock's work, i.e., literacy as communication technology and literacy as an ideological construct, the literature on literacy and cognition is markedly confusing. My review of orality and literacy studies research clarified that, while Havelock's work exerted some influence on the 1st generation of cognitive literacy research in education, his theory of literacy does not seem to have been wholly understood in educational.

Some work lost precision in literacy studies. For example, the crucial distinction that Havelock and others (Langer, 1987; Ong, 1991) attribute to the linguistic importance of the *phonetic* alphabet appears to have vanished. Other works have been misinterpreted. Some of the empirical research that challenged early literacy scholarship, for instance, has often measured different parameters because these researchers used different understandings of the concept of orality across disciplines (Ong, 1991; Olson, 1994; Olson and Cole, 2006).

Havelock's theory of literacy has only partially been brought forward. As noted in key finding no. 3, Havelock's major premise that McLuhan, and other communication and media (Innes, 1951, 2008; Ong, 1991) theorists built upon is that shifts in communication technology take a long time to unfold and understand. Ong (1991) writes: "we only realized the effect of writing during the classical period when viewed from the electronic revolution [….] Contrasts between electronic media and print have

sensitized us to the earlier contrast between writing and orality" (p. 3). The need for historical perspective to grasp the effects of changes in communication technologies, the most important aspect of Havelock's work, has been lost to researchers in educational studies.

Finally the seminal work of Canadian communications theorist Harold Innes has been completely overlooked in educational studies. In *The bias of communication*, Innes (1951/2008) argues that "the communication technology that predominates in a culture produces a mental 'bias' that makes it difficult for users to comprehend communication embedded in alternative modes of communication" (Gibson, 2006, p. 303). Innes cautions that dominant technologies like writing produce biases that blind us to thought patterns and conventions of technologies unfamiliar to us.

As mentioned earlier, the stream of inquiry that developed within the communications field that views literacy as a communication technology is not present in educational studies literature. The fact that the ideas of McLuhan, and Innes, and other theorists who drew from Havelock's theories to formulate their own hypotheses concerning literacy and the transition from print-based to electronic-based communications are notably absent in educational literature. One explanation as to why those in education are not aware of the Havelock-McLuhan connection is that Havelock's theories are associated with the autonomous model of literacy which has been supplanted by more recent critical, sociocultural, and social semiotic approaches to literacy inquiry.

Another reason orality and literacy research is not well understood or known in educational studies is that original publications are rarely cited, and when they are, they are usually limited to a few early works. As a result, the refinement and/or revision of ideas that developed over time have not been taken into account in the educational literature. In sum, misinterpretations abound – the veneer has taken on a life of its own.

Significance of the Williams– Street link

As discussed in my key finding no. 1, a central debate in New Media Studies (NMS), and related areas (Science and Technology Studies (STS), Cyberculture Studies and Technoculture Studies) revolves around the effects of new media. The question of whether or not literacy is an agent of change (social, cultural, and cognitive) was at the heart of the debates in literacy studies from the 1960s through to the 1980s. Like Williams and the fields of media studies and cultural studies that espoused Williams' views and rejected McLuhan's theories of media (primarily) on the grounds of technological determinism, literacy studies cast aside the theories of Havelock and his followers for their broad sweeping claims, and their views on the deterministic effects of literacy, in particular (Basso, 1980; Daniel, 1986a, 1986b : Heath, 1983; Resnick and Resnick, 1977 ; Scribner and Cole, 1977, 1978; Gee, 1986).

However, as noted in my key finding no. 2, a growing number of theorists are rejecting cultural readings of new media for their refusal to acknowledge the technical and physical dimensions of these new technologies and the ways in which the capacities of new media are fundamentally changing daily life. If literacy researchers looked to this new direction in NMS as a potential source of guidance for understanding eLiteracies,

they might reason, as I have, that approaches to literacy deriving from culturalism in the Williams tradition (e.g., the ideological model) may be of limited value in shedding light on literacy in an ever-increasing technological world.

Like Williams' cultural analysis of media and technology that *purposely* does not address the technological aspects of new media, Street's ideological model, which continues to strongly influence literacy research, does not take the technological dimensions of new media cultures and eLiteracies into consideration.

The concept of technological determinism can be interpreted in many ways and is not limited to simple cause-and-effect inferences (Ellul, 1954; Habermas, 1970; Lyotard, 1984). The basis of Williams' critical reading of McLuhan's sense of deterministic effects of media that was instrumental in giving his theories of media such a black eye is also being questioned. Why is this important?

Beginning in the 1960s, theories the cognitive effects of literacy and the far-reaching social and cultural changes that followed became highly criticized by some historians, a new generation of anthropologists and literacy researchers concerned with the culturally specific manifestations of literacy in given societies (Thomas, 1992). The first major study that challenged the cognitive effects of literacy was conducted by Sylvia Scribner and Michael Cole amongst the Vai peoples of Liberia (1977, 1978, 1981). (See Appendix B: The Vai peoples of Liberia).

> With the publication of Scribner and Cole's (1981), *The psychology of literacy*, the theory that literacy could account for the broad-based social and psychological changes set out in the revolutionary writings of Havelock, McLuhan, Goody and Watt, and Ong, was, at least in many people's eyes, laid to rest (Olson, 1994, p. 20).

Scribner and Cole's study, along with Street's 1980 study of literacy practices in Iran and his critique of Walter Ong (1991) and Jack Goody (1987) in *Social Literacies* (1995), were instrumental in discrediting the work of pioneering orality and literacy theorists within the educational domain (Olson and Cole, 2006)[12]. Havelock's "hypothesis that the technology of the phonetic alphabet was a determining, casual factor in Greek culture and human cognition has been widely critiqued and challenged" (Gibson, 2005), as has Ong's thesis that writing transforms thought and expression (de Saussure, 1959; Daniel, 1986a, 1986b; Street, 1995).

Yet, the research methodologies, findings, and conclusions from several landmark studies addressing the effects of literacy conducted in education, psychology, and linguistics are widely criticized in orality and literacy scholarship, particularly for their lack of historical perspective (Goody, 1987; Latour, 1993; Olson, 1994; Olson and Cole, 2006; Ong, 1991; Thomas, 1992). For example, "Goody rejects as naïve the hypotheses regarding the consequences of literacy which Scribner and Cole test and subsequently refute" (Olson, 1994, p. 41). Goody challenges their simplistic premise that the cognitive implications of literacy can be identified merely by investigating clear, direct and observable effects on a given individual that has become literate. Goody, along with Eisenstein (1979), Havelock (1993), Innes (1951/2008), Ong (1991) and Thomas (1992) maintain that the implications of a resource such as writing cannot be determined solely by looking at how learning to write may affect an individual at a

[12] Classicist Eric Havelock and cultural and religious historian and philosopher, Walter Ong are largely credited for establishing orality and literacy studies (Gibson, 2006; Olson and Cole, 2006).

specific point in time. Ong (1991) points to the vast scale of effects that historian Elizabeth Eisenstein attributes to the invention of the printing press as a case in point:

> Even a cursory glance at Elizabeth Eisenstein's two volumes, *The Printing Press as an Agent of Change* (1979), makes abundantly evident how diversified and vast the particular effects of print have been. Eisenstein spells out in detail how print made the Italian Renaissance a permanent European Renaissance, how it implemented the Protestant Reformation and reoriented Catholic religious practice, how it affected the development of modern capitalism, implemented western European exploration of the globe, changed family life and politics, diffused knowledge as never before, made universal literacy a serious objective, made possible the rise of modern sciences, and otherwise altered social and intellectual life (Ong, 1991, p 117).

As Olson (1994) points out, theories of literacy emanating from orality and literacy studies "were offered as explanations of historical changes in cognition associated with the exploitation of literate technologies [….] Such hypotheses, being historical ones, are not readily put to psychological test" (pp. 38, 39).[13]

If Street based his theoretical framework on Williams' premises, as this thesis argues he does, then it is legitimate to ask if critical sociocultural interpretations of literacy fully understood the work of Havelock and Ong and those concerned with the cognitive and societal effects of literacy brought about by changes in communication technologies. If they did not, and this thesis suggests this is indeed the case, then it is also valid to question the longstanding and automatic rejection of theories concerned with the effects of literacy. Given the theoretical links this thesis establishes between orality and literacy studies, media studies, cultural studies, and literacy inquiry in

[13] Later generations of literacy researchers' criticisms of the work of Havelock and others (Ong, Goody and Watt) associated with the early cognitive literacy paradigm are numerous and beyond the scope of this thesis. So also are criticisms of educational research in orality and literacy scholarship.

educational studies, the argument that McLuhan's approach to understanding media is better suited to investigate new media phenomena than the customary cultural approach suggests that some older discredited theories may similarly be more appropriate than current critical sociocultural approaches to examine new and emergent forms of eLiteracies.

Conclusion

Contrary to popular belief, Street's critical sociocultural approach to literacy inquiry and the ideological model he formulated in opposition to the autonomous model is not rooted in anthropology but in British cultural studies and is theoretically informed by Raymond Williams' social shaping of technology thesis.

Havelock's theories of literacy are associated with the autonomous model of literacy that began to fall out of favour in the 1960s and is now considered by many to be outdated and irrelevant. His theories that influenced research in media studies also partly informed the early 20th century cognitive approach to literacy inquiry in education. However, there has been very little integration of research amongst these two streams of thought.

Today, researchers in education are largely unacquainted with the branch of research that developed in the communications field that treats literacy as a communication technology. Marshall McLuhan's theories of media and his hypotheses concerning literacy, that also have ties to Havelock's theories of ancient literacy and the autonomous model, are relatively unknown within educational studies. Other important

work such as Harold Innes' bias of literacy theory, that in my judgment is highly relevant to the relation between literacy and new media, is similarly unheard of.

Questions of whether or not new media and eLiteracies are agents of change stem from, and continue to reflect, debates that began in the 1960s in media studies about mass communications and in literacy studies about print literacy. Following these debates, culturalist interpretations of technology and media became institutionalized in the humanities and social sciences, in large part due to the immense influence of Williams' position on technology's relation to culture and society. The idea of the effects of technology and media were dismissed on the grounds that, "the effects [they] will have on society depend on who controls the technology, who is allowed to understand how it works, and who decides where and how it will be used" (Mizrach, online, p. 12). Critical sociocultural interpretations of literacy similarly gained legitimacy, largely due to the standpoint advanced by Street, Scribner, and Cole on literacy's relation to culture and society, i.e., that literacy is an ideological construct. In keeping with the cultural post-Williams tradition, the effects of literacy in education studies were likewise rejected.

Many tenets of literacy inquiry take their cue from British cultural studies and critical theory (Buckingham and Sefton-Green, 1994; Buckingham, 2000, 2006; Evans, 2005; Giroux, 2003; Hobbs, 2008; Lemke, 2006; Lievrouw and Livingstone, 2006). As a result, current research focuses predominately on the cultural, social, and ideological aspects of literacy (print or digital). But, the problematic aspect of culturalist interpretations of new media as outlined in this chapter may explain, in part, why

approaches presently being used to investigate eLiteracies in the educational field are not proving as fruitful as some had anticipated. Following those who caution against focusing only on the social constructedness of new media, this thesis suggests that attending simply to the sociocultural and ideological aspects of eLiteracies may prove problematic going forward.

The term *revolution*, though convenient and fashionable, is one that can mislead if it is used to suggest the clear-cut substitution of one means of communication by another. The Muse never became the discarded mistress of Greece. She learned to write and read while still continuing to sing.

(Havelock, 1986, p 23).

The *eLiterate Revolution*

Chapter III

Old theories, new insights

This chapter begins with an in-depth look at classicist Milman Parry's (1971) research on Homer's poetry (the primary vehicle of communication and education in ancient Greece prior to literacy) that underlies Harold Innes' bias of literacy theory and Eric Havelock's theory of ancient literacy. Recent research in philosophical and classical literature on Parry's findings confirms the accuracy of hypotheses about changes in communication technologies and literacy put forth by Innes and Havelock and "suggests the thesis that literacy produced major cognitive changes is much more accurate than critics have allowed" (Gibson, 2005, p.15). The evidence presented in this chapter also supports McLuhan's assertion that the medium or media through with communication takes place matters: it is part of the message. Against this background, this chapter takes Havelock's Greek archetype of the *Literate Revolution* as a model to understand the current transition from print literacy to eLiteracies. Hypotheses of the *eLiterate Revolution* underway conclude this chapter.

Innes' bias of literacy theory

Historian and communications theorist Harold Innes argues that human mentality is shaped by the dominant form of communication which produces a bias that restricts users versed in one mode of communication to recognize and access another mode of communication that, while familiar, is nonetheless alien.

Parry determined that the epic poems the *Iliad* and *Odyssey* were not written creations, but traditional oral narrations set down in writing (Brockmeier and Olson, 2009; Gibson, 2005).

> Parry (1928-1937/1971) theorized that the formulaic patterns of organization in Homer's epics were too complicated to have been created by one person. The epics, he argued, must be derived from an oral tradition to which generations of poets contributed over centuries [….] Parry showed that Homeric verse was a total structure built up by weaving stock expressions (which he called 'formulas'), into intricate patterns (Gibson, 2005, p. 7).

Contrary to written narratives that tend to have sequential plot structures (reflecting a linear thought process), oral narratives disregard temporal sequencing (Ong, 1991). Today, oral narrative compositions of Homer's time would most closely approximate contemporary film making. For instance, the story line in many films today are rarely told in a linear fashion and can begin at any point in the plot (typically the end) and randomly leap around the narrative using mechanisms such as parallel storylines, flashbacks or flash forwards to piece together a coherent story.

The memorization processes, along with the goals and purposes of memory were entirely different for oral and literate cultures. Unlike literate memorization that aims for absolute verbatim repetition of written texts, oral memorization seeks to recall and retell a story (Ong, 1991). For this reason, oral narrations are structured mnemonically

(i.e., rhythms and rhymes) and use complex sequencing structures which help facilitate recall (Lord, 1964; Ong, 1991; Parry, 1971). Cedric Whitman (1958), for instance, showed that mnemonic ring patterning in Homer's *Iliad* helped poets to mentally organize interconnecting episodes into an A-B-C-B-Ã sequence. "After the middle of the composition, the previously mentioned order reiterates in reverse, so that the concluding passage returns full circle to the initial formula" (Gibson, 2006, p. 302).

The combined use of formulas (e.g., themes, proverbs, character types), along with recurrent patterns (e.g., ring patterning) and rhythms (e.g., songs, rhymes) provided cataloging systems for mentally organizing and storing materials that could be remembered and fully re-iterated in the same manner, or re-told selectively for various purposes (Caruthers, 1990; Foley, 1990; Lord, 1964; Jousee, 1978; Peabody, 1975). Themes were knit together creating related episodes that eventually composed grand stories (Ong, 1981). The manner in which a story was told varied depending on the underlying patterning system, human memory, and audiences (Carruthers, 1990; Foley, 1990; Lord, 1964; Ong, 1981, 1991; Yates, 1966).

Audiences accustomed to this form of storytelling were familiar with these themes and patterns that, in and of themselves, served as codes that added additional levels of meaning (Foley, 1990). Audiences of ancient Greece were "partly responsible for creating meaning" (Gibson, 2005, p. 11), as well as for remembering parts of a story they had heard before (Ong, 1991). Filling in the blanks with understanding that was plainly obvious to audiences of the time, but not written down, completed the communication (Foley, 1999).

The fact that centuries of classical scholarship had failed to detect formulaic patterns of oral communication in Homer's poetry and the implicit messages these patterns of communication conveyed to ancient Greek audiences, as identified in Parry's research, led Innes to conclude that those without the right 'cultural capital'[14] would be blind to communication in media other than their own (Gibson, 2005, 2006).

Plato and the merging of technologies

The collection of Platonic dialogues is generally recognized as the start of the literate tradition in the Western world (Hamilton and Cairns, 1963; Havelock, 1963). However, a number of studies in philosophy (Brumbaugh,1989; Notomi, 1999; Pritzl, 1999; Thesleff, 1999) have now validated that the dialogues are also not simply written texts, as has long been presumed, but are also "products of the interplay and merging of oral and literate styles of communication" (Gibson, 2005, p. 14). With respect to form

> orally shaped structuring operates at three levels of magnitude: (a) words and phases, (b) themes involving recurrent sequences, and (c) typologies that encompass chains of themes and entail a consistent series of episodes. If the discourse in a composition manifests these typical kinds of structures at any one of these three levels of organization, then scholars today pronounce a text *oral-derived* or *traditional* (p. 8).

These studies "have confirmed that the Platonic dialogues manifest the typology that classicists identify as the oral traditional story pattern" (p. 9). Through a comparative analysis of the *Sophist* and the *Apology*, Gibson demonstrates that while the content in these two dialogues differ, their overall structure is the same: "in the

[14] The term 'cultural capital', coined by Pierre Bourdieu (1986), refers to the inherited social, cultural, ideological, or economic values of given groups or classes of peoples.

background, the discourse moves through the same sequence of topics and ideas as the conversation unfolds" (p. 11). She posits that,

> what are called 'definitions' in Plato's philosophical discourses are analogous to themes in epic poetry [….] the Form of the definitions serves as the organizing framework for the sequence of topics in the discourse […] the words and phrases are slotted into this sequence (p. 10).

Like Homer's epic poetry, Plato's the *Sophist* and the *Apology* make use of recurring traditional themes and patterning techniques. For example, Gibson's comparative case study shows that the sequence of topics used to explain the definition for imitation (mimesis) by the stranger in the *Sophist*, has the same ordering that characters in the *Apology* adhere to whenever they speak about the topic of imitation. She also shows that the same ring composition pattern Whitman (1958) identifies in the *Iliad* continues to be used in both of Plato's dialogues.

The conversational style of the platonic dialogues is neither accidental nor a question of a writing style; it is reflective of the merging of technologies. As with Homeric verse, Plato's dialogues "are not strictly products of the technology of the alphabet – they are, at the same time, the outcome of an ancient technology that existed prior to *and* during the transition from memory to written record" (p. 14). As such, they belong as much to the oral tradition as they do the literate. Thus, not only did 20th century classicists not detect traditional oral patterns of communication in Homeric verse, until quite recently, they similarly missed the formulaic oral forms contained in the dialogues. In light of this new evidence, Gibson (2005) argues that,

> the fact that Havelock and other early media ecologists did not discern the traditional [oral] forms in Plato is consistent with the theory that there is a

> profound cognitive bias produced by literacy. That scholars from a culture dominated by the technology of writing had difficulty tuning into oral-derived communication techniques is exactly what the theory leads us to expect. *Moreover, it suggests the thesis that literacy produced major cognitive changes is much more accurate than critics have allowed*. That Havelock and others found no formulaic patterns in Greek philosophical works, even though they were looking for them, is itself a powerful demonstration that the theory concerning the cognitive bias produced by literacy – at least in the Western philosophical tradition – is essentially correct (p. 15, emphasis mine).

The significance of new evidence

The identification of orally-derived communication techniques in the Platonic dialogues is important for several reasons which have implications for the future research of eLiteracies.

(i) First, the evidence presented in this chapter validates Innes' 'bias of literacy' theory. According to Innes' overarching 'bias of communication' thesis, we can only recognize ways of communicating that are familiar to us. Logic dictates that an argument that applies to the past, which has been verified with historical distance of more than 2500 years, can provide a suitable and sound platform to hypothesize about the future. If we generalize from Innes' theory, attempts to understand eLiteracies by researchers belonging to the era of writing and print literacy are almost certainly futile. Our bias to print literacy and the constraint this technology imposes on the way we think and process information suggests that new media-based communication methods would be no more readily visible to us than oral-based communication techniques embedded in written texts were to classicists of our period looking back in time.

Furthermore, even if we are able to decipher the communication patterns of 'digital natives', the message would in all likelihood be only partly received. As 'digital

immigrants', those of us belonging to preceding technology simply lack the appropriate cultural knowledge needed to read the implicit coding embedded in communication conventions unique to new media technologies (Prensky, 2003[15]; Buckingham, 2000, 2006). Without the right 'cultural capital', we cannot fully access the different levels of messaging contained in new media communication patterns and are therefore unable to place information in context, nor entirely understand its significance. This is not to say that those belonging to the era of written and print literacy cannot become functional in these new technologies, but our ability to become truly literate in and with new media will remain restricted due to the ways our indigenous technologies shape how we understand and interpret the world around us (Innes, 1951/2008; Gibson, 2006*)*.

(ii) Second, the evidence Gibson compiles, along with the conclusions she draws, partially validates aspects of Havelock's theory of ancient literacy: i.e., that: (1) new and old modes of communication co-exist for a prolonged period before one supplants another as a dominant means of communication.; and that (2) shifts in communication technologies are not abrupt, but unfold over a very long period of time.

What the work presented in this chapter does do not validate is the more controversial aspect of Havelock's theory of literacy. As discussed in my third key finding, Havelock bases his theory on three premises. The first two are outline in (ii) the preceding paragraph. The third premise is that modes of communication impact thought processes. From Havelock's first seminal work, *Preface to Plato* (1963), through to the

[15] Marc Prensky (2003) is credited for coining the terms 'digital natives' and 'digital immigrants'. The former term refers to young people who have grown up with new communication technologies; while the latter term refers to those who have not.

last work of his life, “The oral-literate equation: a formula for the modern mind” (1991), Havelock consistently maintained that the effects of literacy on human mentality can only be understood with historical perspective.

In light of recent research that confirms the accuracy of hypotheses concerning changes in communication technologies and literacy put forth by Havelock and Innes, in her concluding quote Gibson (2005) writes: “This suggests the thesis that literacy produced major cognitive changes is much more accurate than critics have allowed” (p.15) [16]. While Gibson does not seem to clarify why she makes this statement, I believe she is posing the question: If other key aspects of Havelock’s theory of ancient literacy are confirmed, can the remaining tenet continue to be dismissed, even though it remains unconfirmed? Gibson’s inference that Havelock’s ‘effects of technology’ argument may not be so easily dismissed suggests that Havelock’s theory of literacy that is widely rejected, but not well understood in educational studies, warrants appropriate investigation.

(iii) Third, the findings from studies presented in this chapter support McLuhan’s idea that “the ‘content’ of any medium is always another medium” (McLuhan, 1968 as cited in Lister, et al. 2009, p. 82). The fact that “Plato’s dialogues are rooted in oral tradition” means that what is stated in writing conveys only part of the message (Gibson, 2005, p. 11). Discovering oral-derived communication techniques encased within the dialogues – Plato’s didactic tool *par excellence* –

> shows that we cannot fully understand the philosophy by considering only what is said in the content of the argument. We need to understand the form in which

[16] See page 54.

> it is said. Only by understanding the form in conjunction with the content is it possible to get a sense of the range of meanings encapsulated in the traditional medium. Thus, *the medium is the message* (Gibson, 2005, p. 14).

Thus, the full meaning of a message can only be understood if both *what* is communicated and *how* it is communicated are considered in parallel. The medium, in and of itself, produces and circumscribes meaning. In our attempt to observe and understand eLiteracies, then, attention needs to paid to the form of eLiteracies, i.e., the mode of communication carrying the message, as much as what is communicated and how.

(iv) Fourth, Plato's hybrid dialogues suggest a new generation of hybrid literacy. In Havelock's (1963) argument, Plato's writings mark the end of the oral tradition. Havelock sees Plato as 'the tipping point' in ancient Greek culture where writing and literacy *transcend* oral poetry as the dominant mode of communication, the principal didactic tool, and the conventional way to preserve and pass on history, values, and knowledge. But according to the findings discussed in this chapter, Plato's dialogues do not represent the end of the long transition to literacy as Havelock ascertained, but a point along the way.

Plato's early writings no longer signify a clear cut break with oral tradition. As previously discussed, "Havelock, […] developed the argument that the use of writing to preserve information permitted a radical discontinuity with the oral poetry which had been used for that purpose" (Olson, 1994, p. 36). According to Havelock, the apex of this shift is found in *The Republic* in Plato's famous rejection of the poets. "He saw Plato's attacks on the poets in the Classical Greek period as a manifestation of the rivalry

between these competing traditions" (p. 36). But as is now clear, there was no radical break with oral tradition. The "collision of cultures" (Havelock, 1963, p.71) continued to play out in the dialogues.

The fact that oral-derived communication patterns are present in these writings means that "Plato's dialogues are a hybrid medium" (Gibson, 2005, p. 3). If we use the Literate Revolution as a model for understanding the eLiterate Revolution underway, then there is a strong possibility that eLiteracies, similarly, are not clear cut breaks from print-based literacy as many propose (Lankshear and Knobel, 2004; Larson and Marsh, 2008; Lemke, 2006; Kress, 2003; Gee, 2003). Instead of entirely new forms of literacy, we can anticipate that eLiteracies are a fusion of print and digital forms. In other words, it is not new forms of literacy we are attempting to understand, but a new generation of hybrid literacy.

(v) Finally, the prolongation of Havelock's 'Literate Revolution' is indicative of the *lengthy* transition from print literacy to eLiteracies currently unfolding. Havelock (1963) estimated that the shift from traditional oral modes of communication to alphabetic literacy took approximately 300 years to unfold. He referred to this changeover as "the fading of orality" (p. 45). But, as has been shown, the fading of the oralist period took much longer than Havelock realized. In light of research that has emerged over the past ten years, many scholars now estimate that the mixed oral/literate phase of the first major transition in communication technology persisted another 200 years longer, with the transition from an oral to literate culture ending in Aristotle's time (384-322 BCE) (Gibson, 2005).

Given the 'speed of light' changes new media technologies are introducing, it may be that this great shift is taking place much quicker than that of antiquity. Nonetheless, history does suggest that the change from print to new media-based communication will take far longer than current discourses envision. Again, if we take the Greek archetype as a benchmark, then we can expect that the transition from print literacy to eLiteracies will be a gradual one, perhaps several hundred years.

Conclusion

Evidence from earlier studies in classics on Homeric research that theoretically inform foundational research in orality and literacy, media studies and media ecology studies that Gibson brings together with recent studies in philosophical literature on the platonic dialogues confirms the soundness of Innes' (1951/2008) bias of literacy theory. Gibson's comparative research shows that the same oral methods of communication that were not discovered in the *Iliad* and the *Odyssey* until the early 20th century have now been identified in the dialogues.

Innes broadly argues that technologies shape thought patterns and ways of communicating. In his bias of literacy theory, people living in cultures that are predominantly literate are unable to recognize patterns of thinking and communicating associated with alternate technologies. The limitations which the technologies of writing and literacy place upon the literate mind impede the ability to distinguish unfamiliar thought patterns and forms of expression inherent to different communication technologies.

This same research that validates Innes' bias of literacy theory also confirms two of three premises of Havelock's theory of ancient literacy. Evidence that "orally shaped information persisted even into [Plato's] written texts (Harris, 1989; Thomas, 1992)" (Gibson, 2005, p. 4). supports Havelock's premises that shifts from one communication technology to another are not sudden and that both the ceding and emerging technologies continue to be employed for an extended period. Throughout the transition from oral memory to written text and beyond, oral ways of communicating, teaching, and preserving knowledge persisted in parallel with new literate ways. Havelock's final premise that modes of communication change thought processes remains unconfirmed.

Finally, the recognition that the dialogues are as much an oral medium as a written one aptly demonstrates McLuhan's theory that "the 'content' of any medium is always another medium" (McLuhan, 1968 as cited in Lister, et al. 2009, p. 82). The medium is at the same time a mode of communication and a carrier of meaning. Messages embedded in and conveyed through ancient oral-derived communication techniques, while invisible to literate audiences of other historical points in time, must now be added to what is clearly written the dialogues if one is to understand the full meanings and teachings the dialogues contain.

Hypothesizing the eLiterate Revolution

Following McLuhan who used Havelock's Literate Revolution as a model for understanding subsequent revolutionary shifts in communication technology, in this chapter I have taken the same Greek archetype to look forward and theorize about the transition from print-based literacy to eLiteracies. From this platform, the following conclusions are drawn:

1. Havelock's research on the transition from orality to literacy in ancient Greece revealed that this monumental change from one prevailing form of communication technology to another took centuries longer than classicists had originally determined. The discovery of oral communication methods in Plato's dialogues highlights that this transition was lengthier than originally determined. All of this suggests that the eLiterate Revolution is far from being a *fait accompli*. Based on the findings discussed above, we have not made the transition from print-based literacy to new media-based eLiteracies, but are in the *midst* of the shift that, if history is any indication, has only just begun.

2. Plato's hybrid dialogues suggest a new generation of extended hybrid eLiteracy. In the same way that these written classical works are not clear cut breaks with oral tradition but mixed creations of ancient memory systems and the technology of the phonetic alphabet, present modes of communication, i.e., eLiteracies, are not entirely new types of literacy brought about by new media. Rather, eLiteracies are fusions of preceding and emerging technologies. Further, the long period of co-habitation between oral and literate modes of

communication during the first great shift suggests that we are presently in an extended state of hybridization – between print-based literacy and new media-based eLiteracies.

3. The investigation of eLiteracies should attend as much to the medium or media through which communication takes place, as to what is being conveyed and how. As McLuhan cautions, the medium matters. It is part of the message.

4. Innes' theory essentially confirms that those who have not grow up with new media will never become fully literate in these newest communication technologies, regardless of impressive levels of proficiency some may achieve. But as Innes notes, our awareness of the distorting biases of ancient communication technologies may prepare us, at least in part, to better reflect upon media in contexts we do not understand (Eisenberg, 2006; Gibson, 2005, 2006).

The way forward

This thesis has made the case that the Greek archetype is far more useful to throw into relief the ways in which the nature of literacy, that is, communication technology, is changing in light of new media than are existing models that presently inform new media literacy scholarship.

Based on arguments advanced in the field of new media studies (Lister *et al*., 2009), approaches to investigate eLiteracies deriving from culturalism in the Williams tradition are importantly flawed. This thesis has linked the origins of the ideological

model of literacy to Williams' 'social shaping of technology' argument. This thesis has shown that this leading model of inquiry in educational studies shares the same theoretical limitations as Williams' critical sociocultural analyses of technological phenomena. Against this background, this thesis has asserted that the ideological model of literacy (and other models grounded in this framework) is ill-suited to investigate eLiteracies because it fails to recognize and address the technical and physical dimensions of new media technologies and the ways in which they are, in and of themselves, fundamentally changing daily life and literacy practices.

Communication and media studies that built on the Greek paradigm present new ways for literacy researchers to think about the relation between print-based literacy and eLiteracies. The theoretical contributions the history of communications (orality and literacy studies, media studies, media ecology studies, and new media studies) can offer literacy inquiry in educational studies is substantial but overlooked.

For example, an understanding of the contrasts between orality and literacy may yield interesting insights into various kinds of eLiteracies. Ong's (1991) work is particularly rich in this area. He argues that electronic communication ushered in a new phase of orality, similar to primary orality in some ways, yet distinctly different. He writes: "electronic technology has brought us into the age of 'secondary orality'. This new orality has striking resemblances to the old in its participatory mystique, its fostering of a communal sense, its concentration on the present moment, even its use of formulas" (p. 136). Are we finding residues of traditional mnemonic techniques in the various new media cultures of children and young people?

Ong (1991) maintains that the shift from an oral to a written mode necessitates moving from an oral sensory world to a visual one. Secondary orality, he argues, involves a return to an oral sensory world that is "based permanently on the use of writing and print" (p. 136). "[T]he intense interplay between speaker and audience" that characterizes traditional oral communication for him (p. 137) does seem to capture the essence of modern-day blogging.

McLuhan's work similarly offers valuable insights that can be applied to eLiteracy research. "Many of his ideas have been taken up and developed by a whole range of theorists with an interest in new media: Baudrillard, Virilio, Poster, Kroker, De Kerckhove" (Lister *et al*., 2009, p. 78). While examples McLuhan and Ong offer refer to the era of mass media communication, their ideas transfer aptly to the social virtual worlds that networked new media makes possible. For instance, the "affinity groups" that Gee (2003) refers to which develop "through shared endeavours, goals, and practices" (p. 212) align with the group-minded sense of tribalism that McLuhan and Ong associate with oral cultures. Virtual communities such as Second Life and Massive Multiplayer Online Role Playing Games (MMORPGs) replicate the physical, visual, and audio presence of oral cultures.

Finally, recent research in both orality and literacy studies and new media studies suggests that the effects of technology and media can no longer legitimately be ignored. Can the effects of literacy and eLiteracies, then, continue to be disregarded? The tradition of understanding literacy as communication technology began in the classics with Eric Havelock's theory of ancient Greek literacy. From the perspective of

orality and literacy studies, changes in communication technologies are accompanied by changes in ways of thinking that reconfigure culture and social organization.

If Havelock's yet-to-be-proven thesis that modes of communication change thought processes is correct, then patterns of communication with new media technologies will certainly differ from ways of communicating in writing and print. If "the transition from oral to literate patterns of communication prompted "changes in vocabulary, syntax, and in basic categories of human thought" (Havelock, 1984, p. 24), then we can expect that the shift from print to new media-based communication will lead to more than new words and expressions, syntax, and ways of organizing knowledge and information – but to new, still-evolving and yet-to-be-understood – modes of thinking, i.e., new ways of comprehending and interacting with the world.

It is difficult to ignore how the speech-like writing style of text messaging that combines letters and numbers to phonetically replicate written text has become a language in its own right that is so popular with young people. And it is also hard not to acknowledge that new media technologies are fundamentally re-shaping the environments in which we live – physically, socially, and culturally. Is reading and writing in and with new media restructuring the human mind, and if so, how? Are eLiteracies strengthening the faculties of abstraction, categorization, and reflection? So many questions, so few answers.

Will eLiteracies build on the foundation of print literacy, taking the literate mind forward to a new level? Will the transition from literacy to eLiteracies launch a new trajectory comparable to Havelock's Literate Revolution? The question, then, is perhaps

no so much: Will the shift from print to new media technologies change our thought process? But rather: *How* will new media change the way we think and communicate? Revolutions take time, and this one has only just begun.

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Appendix A: Literacy practices in Iran

Street (1995) first drew from Williams' work to inform his 1980s landmark study of literacy practices in Iran, one of the first major studies that served to start the long progressive shift in literacy research away from the cognitive paradigm.

> Searching for a research literature to help make sense of the complexity of the local uses and meanings of literacy in Iran, I was concerned to find instead that the development and educational accounts of literacy at that time – rooted in an autonomous model of literacy – tended to provide accounts of village life that ignored or demeaned local literacy practices. Turning to the anthropological literature, which was still dominated by the work of Jack Goody, whose *Literacy in Traditional Societies* (1968) I had with me in the field, I discovered that his theories of literacy simply reinforced notions of the 'great divide' between literacy and orality and deflected attention away from real literacy practices and their meanings for local lives. One set of literature which appeared to provide a more culturally sensitive and fine-tuned account of how people used literacy and what it meant to them in their everyday lives and social relations, was to be found however in the 'cultural studies' tradition, itself influenced by my discipline of anthropology but also more conscious of textual traditions and their social embeddedness. The work of Hoggart, Williams and others in the field, though located primarily in British working life, suggested insights and questions that may help illuminate the rich experience of literacy practices I was encountering in Iranian villages (p. 55).

Specifically, Street wanted to "consider whether some aspects of that British experience and critical tradition could be usefully applied in a very different cultural context but one where similar processes might be at work beneath the surface" (p. 55).

Appendix B: The Vai peoples of Liberia

One study that has drawn much attention was conducted by Sylvia Scribner and Michael Cole amongst the Vai peoples of Liberia (1977, 1978, 1981).Scribner and Cole investigated how mental functioning was affected by literacy acquired through formal schooling and through traditional ways of learning. Their findings showed that non-literate Vai peoples had the same cognitive abilities (e.g., problem-solving, categorization) as their literate counterparts. Any differences, they argued, were attributed to specific tasks or cultural factors – not cognitive effects. Scribner and Cole concluded that cognitive abilities typically associated with literacy attainment were more appropriately attributed to Western formal schooling, not literacy *per se*.