Abstract
The study of digital culture is a multi-disciplinary field that spans many different methodologies, frameworks and philosophies that explore the relationship between culture and technology. The following is a discourse in digital culture research using the philosophy of scientific revolution (Thomas S. Kuhn) as a key source for understanding the current state of the emerging field.

Information Revolution, Scientific Revolution
Electronic technology that developed out of the 20th century, enabled the cultural prevalence of mass media, in the form of cinema and television and later digital media which provides cultural researchers and philosophers complex new frontiers to explore. Marshall McLuhan in *The Gutenberg Galaxy*¹ and Martin Heidegger in *The Question Concerning Technology*² discuss the idea of media and technology as an extension of mankind that creates new capacity and influence, both intended and unintended, and have sought to understand them in a cultural as well as philosophical context. A core philosophical problem of technology is that, much as language transforms the world, so do the extensions of man, resulting in a change of meaning. Ernst Cassirer saw technology as an attempt at making sense of the world through symbolism and creating meaning through spontaneous action.³ In the digital context, this changing of meaning is profound and reaches far into everyday life from the creation of online communities to digital identities that function as citizens of the global village, effectively changing the way we identity with ourselves and the world around us. As McLuhan predicted, the digital age has brought about electronic interdependence and a change in cognitive and social organisation including the transformation of media structures, modes of communication and identity narratives.

The phenomenon of digital culture is a relatively new technological and cultural development that has created a new field of study. Digital culture derives from technological developments
in interactive media such as the Internet and web-platforms that enable Internet users to create online communities, relationships and digital identity construction and performance.\(^4\)

The study of digital culture is not limited to online analysis, but also factors in the offline user and the cultural environment. There is little synthesis (as yet), however, between methodological approaches and discourses of digital culture and digital identity research. There is no single and consistent discourse or body of ideas just as there is no single methodology that can always be depended on for an effective research tool.\(^5\) Digital culture is being studied in a plethora of different fields with methodologies deriving from art and philosophy, computer science, the humanities and social sciences e.g., ethnography (Christine Hine), psychology (Sherry Turkle), cultural anthropology (Michael Wesch), media semiotics (Jonathan Bignell), digital narratives (Ruth Page) and socio-linguistics (Jannis Androutsopoulos).

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This multifarious situation has its strengths and weaknesses. There are such a variety of approaches that sometimes confusion can result. On the other hand, the digital cultural analyst must recognise the limitations of any particular discursive framework. When there is no standard set of methods, phenomena or common body of belief to take for granted, researchers are forced to build their field »anew from its foundation«.\(^6\). Researchers in the field of digital culture can define their questions, tasks and objects of study to best suit their research subject.\(^7\) Questions such as »Is digital culture a cultural anomaly?« »Is it possible to pin down this new phenomena of the digital revolution and information age in a way which will lead to a scientific revolution?«, »Has the scientific revolution already happened with the emerging and increasingly-in-demand field of digital humanities?« »What methodological practices are best used in the analysis of digital culture?« In this essay I will discuss the philosophical and methodological problems that I have encountered in my research on digital culture and digital identity narratives.

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The current state of the study of digital culture shows many signs of a science in its early developmental stages – a science that has yet to build up a system of established methodological frameworks and a universally accepted paradigm. Thomas S. Kuhn, in *The Structure of Scientific Revolution*, a seminal work on the philosophy of science, defines a fully developed science as one in which all fields have evolved to build established methodological frameworks and universally accepted paradigm. Stinchcombe and Becker further define Kuhn’s idea of »paradigm« as »examples of the virtues scientific work might
have, in a combination that shows what work should look like in order to contribute to the discipline«.9

<5>
It would appear, however, that digital culture is potentially on track for its first universally received paradigm. An influential figure that has set a precedent for how digital communities and digital identity can be researched is MIT professor Sherry Turkle, who first wrote about digital culture and digital identity play in 1995. Turkle conducted psychoanalytical interviews and observed and analysed online communities with the pioneers of digital culture who existed on the pre-Internet, ARPANET10 MUD's (multi-user dungeons) which were text-based, online communities that first engaged in digital identity play in 1975.11 An interesting change in digital identity construction in online community and digital identity creation between then and now is the amount of factual information (real life facts) as opposed to fantasy-based and fictional information. Turkle explains how multi-user dungeons were themselves fantasy scenarios that gave people the opportunity to radically play with their identity. »In addition to virtual cross-dressing and creating character descriptions that deconstruct gender, MUDders gender-swap as double agents. That is, in MUDs, men play women pretending to be men, and women play men pretending to be women. Shakespeare’s characters play these games as well.«12 Turkle discovered that the ›MUDders‹ play with identity had therapeutic benefits with regard to building social confidence and discovering different aspects of themselves. »Online personae have something in common with the self that emerges in a psychoanalytic encounter. It, too, is significantly virtual, constructed within the space of the analysis, where its slightest shifts can come under the most intense scrutiny.«13

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The MUD communities and identities that played with online environments, communities, identities and relationships are in stark contrast to the social media platforms of today such as Facebook that base themselves on the premise of sharing factual, real information from the user. These platforms are driven, at least in part, by the lucrative industry of gathering and selling personal information on the Internet known as data mining. Data gathering and mining is used by many online businesses and is itself an emerging interdisciplinary field of computer science. »Data mining is the task of discovering interesting patterns from large amounts of data, where the data can be stored in databases, data warehouses or other information repositories. It is a young interdisciplinary field, drawing from areas such as
The early developmental stages of a discipline are also characterised, according to Kuhn by »continual competition between a number of distinct views of nature, each partially derived from, and all roughly compatible with the dictates of scientific observation and method«. An example of competing methodological practices that use very different approaches to the same issue in digital culture is the search for meaning through analysis of the online text itself versus the analysis of how individuals interact with and create online text. The analysis of the digital media text or cultural artefact is usually studied within a semiotic, literary and linguistic, structuralist framework. The study, however, of the individual who creates and participates in digital culture (for example the creation of digital identity narratives, sharing stories about the self) is often carried out using a psychoanalytic profile of the author of the text (pioneered by Sherry Turkle) and the field of cyber-psychology, anthropology and ethnography.

It may be too simplistic to define one analytical method as structuralist and the other as post-structuralist, as the particular paradigm used by a practitioner within their field is not heterogeneous or static and there is a lot of overlap e.g., structuralism in psychology and post-structural media semiotics. »In the contemporary diversification of audiences brought about by the proliferation of media and the new ways of interacting with them, there is a temptation to be over-optimistic about the extent to which individuals make meanings on their own terms and for their own individual purposes. It is tempting to assume that individual users of the media, simply because they are all different and belong to different sub-cultural groups in society, can subvert the meanings of media texts in ways that some audience researchers and other academic critics would like to value as radical or even revolutionary. This optimistic view is important because it challenges the assumptions of structuralist semiotic research that posits that fixed meanings are structured into texts and signs by universally known codes and a fixed repertoire of positioning the audience. It does not, however, challenge the more recent semiotic approach (progressively adopted in this book) which assumes that signs and texts have several meanings at once (polysemy), a kind of excess of proliferation of meanings which enables them to be used by audiences in different ways (multiaccentuality).«
Methodological and Philosophical Problems

Analytical methods for studying digital culture are constantly adapting to accommodate the changing demands of digital media texts and cultural artefacts. As the study of digital culture is in its early stages, researchers in the field struggle with using shared terms and concepts in addition to research methods, scientific structure or agreed upon paradigms. The term ›digital culture‹ refers not only to the study of information age culture and the sociology of the Internet, the same term is also used for very different fields of study under the umbrella term, ›digital humanities‹, which lumps together research in any field of the humanities with computers and computing (not just the Internet and computer networks). ›Digital heritage‹, meanwhile, deals with museums, libraries and archives, digitizing information and creating meta-data using computer technology for information presentation, storage and analysis.

There is a difference, however, between computer scientists and social scientists, sometimes referred to as ›digital humanists‹. »This has led to some difficulties in communication that have not yet been fully resolved. By and large, those doing informatics have not had practical humanities backgrounds (there are, of course, exceptions to this) and humanists, to a large extent, have used computers only for word processing and e-mail.«¹⁷ The confusion arising from using the term ›digital culture‹ to refer to completely different areas of research is only the tip of an iceberg of problems. »Everyone working within the new paradigm is marginal because there is not yet an established discipline and more mainstream sensibilities have usually been drawn to less chaotic intellectual fields.«¹⁸

The information age has triggered many innovative research methods and perspectives to develop theories, critiques and understandings of digital culture. New developments have been made in many different established fields to respond to the changing context of media use and cultural transformation. What was once studied and understood as the media producer and the media consumer (or audience) is no longer applicable following the introduction of Web 2.0 (user created Internet content). Interactive and social web-platforms have turned the once passive media audience into active media producers themselves.¹⁹ »Friedrich Nietzsche suggested that human beings, since ancient times, have felt the need to make marks to represent their lives and experiences, not simply as a reflection of private dreams or to communicate instrumental facts about survival, but as a kind of necessary
celebration of existence: an ›impulse which calls art into being, as the complement and consummation of existence, seducing one to a continuation of life‹.\textsuperscript{20} The idea of digital diasporas is often explored in the study of digital culture as a migration of meaning, with the shift in social meaning and understanding from the offline world to the online world. Social constructs such as community and self, narratives and language, media producers and consumers have all been explored in their primary offline meaning, then, in a secondary online meaning, to analyse particular aspects of the digital environment.

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The empirical analysis of meaning in cultural sciences has long had an assortment of approaches including the phenomenological, linguistic and hermeneutic and various forms of functionalism.\textsuperscript{21} Using the phenomenological approach to study digital culture and digital identity works well where digital artefacts are in an open and unrestricted observable place e.g., any web page that is in the public domain. Virtual, visual and media ethnographers who have studied the content of the Internet from a phenomenological approach have adapted their approach from traditional ethnographic field study methods. As virtual ethnographers, they are aware of the influence of preconditioned beliefs that effect both the use, analysis and interpretation of the use of technology. Virtual ethnography builds a potential foundation for the study of digital culture both in the offline and online context. »Beliefs about the Internet may have important consequences for the ways in which we relate to the technology and one another through it. Ethnography can therefore be used to develop an enriched sense of the meaning of the technology and the cultures which enable it and are enabled by it.«\textsuperscript{22} As there are many different and distinct ways of viewing online culture in the first place (particularly in multi-disciplinary methodological analysis) it is beneficial to outline the essence of the belief.

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Heidegger said »the essence of modern technology is by no means anything technological...it is technology itself that makes the demand on us to think in another way«.\textsuperscript{23} This belief about the relationship between technology and culture was very similar to the interpretations of the impact of technology on culture as understood by Ernst Cassirer and Marshall McLuhan. »The effects of technology do not occur at the level of opinions or concepts, but alter sense ratios or patterns of perception steadily and without any resistance. The serious artist is the only person able to encounter technology with impunity, just because he is an expert aware of the change in sense perception.«\textsuperscript{24} McLuhan regarded the electronic environment as almost impossible to see or recognize while at the same time all
engulfing and affecting, producing a kind of hypnotic trance that inhibits people from realising their dependence on their tools and prevents them from seeing that technology changes the way we view the world around us, as well as ourselves.

<14>

The reason why we choose to ignore the influence of our technology, McLuhan speculates, may be because of the extent that the ›electronic environment‹ transforms our experience that can be an inconvenient and uncomfortable truth. »What Heidegger called ›the essence of technology‹ infiltrates human existence more intimately than anything human could do. The danger of technology lies in the fundamental distortion of human actions and aspirations. Not that machines can run amok, nor even that we might misunderstand ourselves through a faulty comparison with machines. Instead, technology enters the inmost recesses of human existence, transforming the way we know and think and will.« 25 It is interesting to note that McLuhan and Heidegger did not live in the information age or information society 26 and yet were observant enough of their own technological and cultural landscape to predict trends and the extent to which technology would infiltrate everyday life in the future.

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The need for methodological frameworks, research paradigms and method itself may be an anachronism in the digital age and philosophy has put up many good anarchistic arguments in the case against method. Paul Feyerabend, in Against Method: Outline of an Anarchistic Theory of Knowledge, challenges the idea that scientific method is superior to any other form of knowledge. 27 »From this humanitarian point of view, Feyerabend supports his anarchistic account of science on the grounds that it increases the freedom of scientists by removing them from methodological constraints and, more generally, leaves individuals the freedom to choose between science and other forms of knowledge.« 28

An Interdisciplinary Comparison Study of Digital Identity Narratives

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Digital identity defined simply as an assumed online identity can be seen as the manipulation of a kaleidoscope of selves tailored to fit into different environments and roles online. 29 The timeless, pan-cultural idea of the story and the story teller are intertwined in digital identity narratives, where the storyteller may be the story itself. 30 Discourse analyses of digital identity narratives can put the text into context, both in micro-context (the online environment and digital culture) and macro-context (what is happening in the offline world).
Digital identity narratives can be ephemeral – more similar in time and space to spoken conversation than written communication, traditional story telling and literature genres. Following McLuhan, Meyrowitz says electronic media recalls simultaneity a key aspect of oral societies – action, perception and reaction again become prime forms of communication. But this electronic aurality is far different from that of old because it is not limited physically to time and space. The impression of experiencing distant events fosters a decline in power-instigated, print-supported, implicit hierarchies, thus imploding social structures. The written form of communication used online has been referred to as ›spoken written communication‹ or ›secondary orality‹ and has been explored by socio-linguists and digital narrative researchers such as Ruth Page in her work *Interactivity and Interaction: Text and Talk in Online Communities* and Jannis K. Androutsopoulos in *Sociolinguistics and Computer Mediated Communication*.

I am, in my doctoral thesis research, using three different methodologies to study the online phenomena of digital identity narratives:
- Cyberpsychology (the psychology of the Internet user),
- Literary analysis of digital identity narratives (including socio-linguistic),
- Virtual ethnography (and digital anthropology) for context building.

Each has its own paradigms and findings that may gain greater dimension and meaning when used in a comparative study. I have, in the past, found different methods useful to answer basic questions about digital identity narratives, questions such as ›Why is the story being told?‹, ›What is being said?‹, ›Who is telling the story?‹ and ›Where is it being said?‹ The question of why a particular digital narrative or text exists on the Internet is one of motivation – ›Why did the Internet user feel compelled to write this particular text or create this particular digital artefact.‹ The search for motivation behind human actions is well documented in psychology and psychoanalysis. Cyber-psychologists currently studying digital culture often use questionnaires and interviews of Internet users (of a particular website or social network) to ask the Internet user why they do what they do on-line.

The motivation of the Internet user, however, may just be a small part of the puzzle in the analysis of digital culture, which, when put into the context of both the online environment...
and the offline information era, can help build a paradigm or scientific revolution in the study of digital culture. Many sociologists use ›normal science‹ pejoratively as though it meant merely normal science. As though all of us could expect to produce scientific revolutions everyday. That is a total misreading of Kuhn, and foolishness as well. Individual scientists don’t make scientific revolutions. Those revolutions take a long time. Large numbers of people, working together, develop a new way of formulating and investigating the problems they are interested in, a way which finds a home in lasting institutions of scientific work.«  

<21>  
My three particular research methods were selected because they seem to answer some basic questions about digital identity narratives where story and storyteller merge even though the analysis of the text versus the analysis of the creator of the text may yield different interpretations. Although there are many other fields of research that deal with similar problems and use different terms, psychology, socio-linguistics and ethnography have all successfully expanded their research paradigms and methods to fill the current research voids and knowledge gaps in the culture of the digital age. By comparing three different ways that digital identity narratives are studied, a methodological framework might be created that will enable a more holistic and multi-dimensional interpretation of modern cultural artefacts that exist as a part of digital culture and perhaps be a small part of a larger movement to analyse and understand the modern day phenomena of digital culture.

Author’s Profile

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3 Hans Ruin: Technology as Destiny in Cassirer and Heidegger – Continuing the Davos Debate in Form and Technology: Reading Ernst Cassirer from the Present, under publication, Hoel ed.


7 Bignell 2002.

8 Scientific revolution as defined by Kuhn is when »...the communities rejection of one time-honored scientific theory in favor of another incompatible with it.« Kuhn 1996. Pg. 6.


10 The Advanced Research Projects Agency Network


14 Jiawei Han and Micheline Kamber: Data Mining Concepts and Techniques, San Francisco 2006. Pg. 39.

15 Kuhn 1996. Pg. 4.


Digital artifacts (also called virtual artifacts) and digital narratives are not just literary text but can include photographs, videos, music and any variation thereof in multi-media. However for the purpose of my study I have chosen a specific genre of digital identity narratives expressed through text and online journals (blogs).