Documenting Videogame Communities

Documenting Videogame Communities

A Study of Community Production of Information in Social-Media Environments and its Implications for Videogame Preservation

Olle Sköld

UPPSALA UNIVERSITET

Abstract

Sköld, O. 2018. Documenting Videogame Communities. A Study of Community Production of Information in Social-Media Environments and its Implications for Videogame Preservation. *Skrifter utgivna vid institutionen för ABM vid Uppsala universitet* 7. 164 pp. Uppsala: Department of ALM. ISBN 978-91-506-2676-6.

Drawing on the disciplines of library and information studies and archival studies, this study seeks to explore the production of information in online videogame communities and to elucidate how such insights can offer practical and conceptual support to the knotty issue of how to preserve those sociocultural aspects of videogames that exist 'beyond' the code and audiovisual data resources of the videogame itself. This is accomplished in two principal moves: (i) by delving into the current state of socioculturally-focused videogame preservation and; (ii) by inquiring into the production of information carried out by videogame communities in what arguably is one of their most important interfaces of interaction—discussion forums, wikis, and other social-media services. The study is based on four papers (I–IV). Paper I develops the theoretical framework of the study on the basis of practice theory and document theory. Papers II and III report on field-studies of videogame-community information production in the context of two processes of importance in community social life: memory-making (II) and knowledge production (III). Paper IV offers a qualitative systematic review of videogame-archiving literature, allowing Papers I–III to be situated in an archival context. The study employs multiple methods and encompasses several empirical sites of inquiry and was inspired by the framework of exploratory research and of 'bricolage' research strategies.

The results of the study add to the present state of knowledge on how information in the social-media environments of the large and influential present-day videogaming domain emerges as a result of community practices of production, and how videogame-community social life is entangled with information production in such spaces. The study also furthers archival inquiry on the topic of videogame preservation by providing a description and analysis of what information objects videogame-related social media plausibly hold, and by what communal practices and processes they have been brought into existence. Furthermore, the study examines the consequences of collecting community-produced social media and framing it as documentation of the sociocultural aspects of videogames—a key issue in videogames preservation.

Keywords: Videogames, Videogame preservation, Practice theory, Documents, Documentation, Memory-making, Knowledge production, Social media, ALM

Olle Sköld, Department of ALM, Box 625, Uppsala University, SE-75126 Uppsala, Sweden.

List of Papers

This thesis is based on the following papers, which are referred to in the text by their Roman numerals.

I   Sköld, O., 2013. Tracing Traces: A Document-Centred Approach to the Preservation of Virtual World Communities. *Information Research*, 18(3), no pag. [online] Available at: http://www.informationr.net/ir/18-3/colis/paperC09.html [Accessed 5 January 2018].

II Sköld, O., 2015. Documenting Virtual World Cultures: Memory-Making and Documentary Practices in the City of Heroes Community. *Journal of Documentation*, 71(2), pp.294–316.

III Sköld, O., 2017. Getting-to-Know: Inquiries, Sources, Methods, and the Production of Knowledge on a Videogame Wiki. *Journal of Documentation*, 73(6), pp.1299–1321.

IV Sköld, O., 2018. Understanding the 'Expanded Notion' of Videogames as Archival Objects: A Review of Priorities, Methods, and Conceptions. *Journal of the Association for Information Science and Technology*, 69(1), pp.134–145.

Reprints were made with permission from the respective publishers.

Contents

Acknowledgments

Doctor Banner, I presume. (the Hulk, 1992)

David, P.(w), Pérez, G.(a), Smith, T.(c), Rosen, J.(l), and Chase, B.(ed.). 1992. Future Imperfect. *Incredible Hulk.* Issue 1, December 1992, p. 48. New York, NY: Marvel Comics.

On a pitch-black November night, we were in the car on our way home from a 35-kilometer pizza-run deep into the Uppland countryside. My then three-year old son Frej and I sat in the back seat, speaking about Bruce Banner and the Hulk. I spoke of some detail, and Frej observed, after a moment of silence, that he hadn't "learned to talk like that ... yet." To Frej: don't worry son, you will. To the reader, a reflection: on the level of personal process, this is kind of what happens during the years from enrollment in the PhD program to the dissertation defense. One learns the job by learning to talk, write, think, and otherwise work in surely critical and imaginative, but almost always somewhat genre-bound ways. Because the apprentice exam that you are holding in your hands offers some indication that I've during the years as a PhD candidate grown to be a skilled enough practitioner to participate in the lines of scholarly talk and work, I'd like to mark the occasion by thanking the people that have made the writing of this book possible in a very tangible sense.

First off, Isto Huvila, Sanna Talja, and Sara Kjellberg—thank you for acting as guides and discussion partners. One of the biggest benefits of this particular supervisory-team roster has been the diversity of its members: you have all deftly and expertly and greatly, but in markedly different ways, contributed to the making of this study and its constituent papers. I would also like to recognize the efforts of Ola Pilerot, University of Borås, and J. Tuomas Harviainen, University of Tampere. Ola: the comments you provided during the mock-viva have helped to put this text in a much better shape than would otherwise have been possible, and I am grateful for your efforts. J.T., my information-studies-of-games co-advocate: thanks for your feedback and for our co-authoring projects during the PhD-candidate years. I am also grateful to the people who, in different roles and constellations, have discussed and hence bettered writings related to this research project, most notably the seminars at the Department of ALM, Uppsala University, and the Division of ALM, Lund

Abbreviations

ALM – Archival Studies, Library and Information Studies and Museums and
  Cultural Heritage Studies; or archives, libraries, and museums
AoIR – Association of Internet Researchers
BIOS – Basic Input/Output System
CoH – City of Heroes
CMW – Crystal Magic Weapon
CPU – Central Processing Unit
C64 – Commodore 64
DRM – Digital Rights Management
DS2 – Dark Souls II
FAQ – Frequently Asked Questions
FRBR – Functional Requirements for Bibliographic Records
HVSC – High Voltage SID Collection
HOTU – Home of the Underdogs
ICHEG – The Strong National Museum of Play hosts the International Center
  for the History of Electronic Games
IRC – Internet Relay Chat
I/O – Input/Output
KEEP – Keep Emulation Environments Portable
L2R – Learntoraid.com
LIS – Library and Information Studies
MMORPG – Massively Multiplayer Online Roleplaying Game
NES – Nintendo Entertainment System
OAIS – Open Archival Information System
PC – Personal Computer
PVW – Preserving Virtual Worlds
ROM – Read-Only Memory
SID – Sound Interface Device
SL – Second Life
The EN – The 'Expanded Notion' of Videogames (see Paper IV)
WoW – World of Warcraft

List of Tables

1. Introduction

A day on the Dark Souls Wiki

In the beginning of June, some years ago, there was a day like many others on the Dark Souls Wiki (the DSW). Almost three months had passed since the world-wide release of Dark Souls II, the videogame in current focus of the wiki. The site was still gripped with post-release fervor, and there was frequent activity all across its different spaces of interaction. I was in the DSW's in-site chat channel trying to hash out the workings of a multiplayer mechanic with another contributor when chat moderator Tokugawa logged on. Tokugawa announced that he was going to work on the wiki's spell articles, including the article for the spell Crystal Magic Weapon (CMW). After about 20 minutes, the following discussion took place:

> Tokugawa: Hold up just a second CMW lasts 90 seconds I'm assuming?
>
> Lenodi: Should be the same [duration] as the other [spells of the same kind]
>
> Tokugawa: O.o it's lasting longer than that [...] Either my stopwatch is off, or it lasts for 105 seconds

Ryu, another wiki contributor, offered to test the duration of CMW in his own copy of Dark Souls II, and reported back: "It lasted around 30 seconds for me?! O_o". After some discussion, Tokugawa and Ryu arrived at the conclusion that the duration of CMW was affected by the in-game character's intelligence statistic. Despite having discovered the relationship between CMW's duration and the numerals referencing the player character's intelligence, Tokugawa concluded, "Well I'll just go with 90 seconds [in the writing of CMW's article]."

Pending complexity and nuance, let us start of on a simpler note. Presently, people do lots of things with digital technology, and digital technology plays important parts in the everyday lives of many people. If we shift focus and start talking about such things that arise out of human interaction—society, culture—the same observation holds true: digital technology is impactful and meaningful in a wide range of social arenas. The pervasiveness of digital technology brings about a great prolificacy and diversity of digital materials produced by a variety of actors in a variety of settings using different tools and channels of transmission. While being easy to produce and to share if the right equipment is at hand, digital materials also have a set of characteristics that make them troublesome to keep and communicate over longer periods of time. Digital technology hence poses challenges to all efforts that find within their fields of operation the tasks of collecting, safeguarding, and providing access to materials not only currently, but also in the future. These challenges are of multiple and fundamental kinds and subsume the entire chain of preservational complexity: from what to save and how, to how to understand context and authenticity in relation to digital materials, to questions of metadata schemas and how to properly describe and make findable those materials that have been collected or delivered. The matter of how to make digital materials accessible in the future is centrally relevant to the ALM institutions and organizations, associations, or professions specifically assigned to keep, curate, and disseminate archives, collections, and other kinds of repositories. The reason why is apparent: sufficient efforts to preserve information of current goings-on are a prerequisite for future research and other initiatives aiming to discern what has happened outside the bounds of current times.

Videogames are an important instantiation of the general problem of preserving salient aspects of the (digital) present. Videogames and play with videogames are of preservational priority by virtue of their holding significance in contemporary life and by carrying considerable cultural and economic (Chapman, et al., 2017) and social and historical weight (Begy, 2015; Pötzsch and Šisler, 2016; Webber, 2016). However, the preservation of videogames is a difficult undertaking that brings forth a slew of issues of a technological, legal, collaborative, cultural, conceptual, practical and methodological nature (MacDonough, et al., 2016; McDonough, et al., 2010; Newman, 2012a). Videogames require preservational interventions if they are to be reasonably accessible and possible to grasp for future researchers, videogame developers, and other interested parties (Bachell and Barr, 2014; Guttenbrunner, et al., 2010; McDonough, et al., 2010). The successful resolution to the dilemmas of videogame preservation lies in research and development work dedicated to gradually resolving the challenges present. The study before you is an attempt in that direction. Drawing on the disciplines of library and information studies

14

(LIS) and archival studies, this study seeks to explore how videogame communities produce information[1] and to elucidate how such insights can offer practical and conceptual support to the knotty issue of how to preserve those sociocultural aspects of videogames that exist 'beyond' the code and audiovisual data resources of the videogame itself.[2] This is accomplished in two principal moves: (i) by delving into the current state of socioculturally-focused videogame preservation and; (ii) by inquiring into the production of information carried out by online videogame communities in what is arguably one of their most important interfaces of interaction—discussion forums, wikis, and other social-media services.[3]

Let us now return to the events taking place on the DSW and use it as a stepping stone to further explore the problem area this study addresses.[4]

1.1. Setting the stage I: videogames, videogame communities, and social media

> [T]here exists an abundance of player-generated, moderated and curated gaming information on the web, much of it exposed via social media channels including wikis, blogs, Facebook and Twitter. (Barr, 2014, p. 120)

Social media changed videogaming, as they changed many other things. Today, virtually every videogame of any appreciation and use has a number of social-media sites dedicated to it. These sites are of many varieties and serve different purposes for different actors, but in tandem they support the same

---

[1] Information is construed as information objects, e.g., "human sources, documents, document parts, document bundles, document repositories" (Talja and Hansen, 2006, p. 129). As will become apparent in Chapter 1: *Introduction* and explored in detail in Chapter 5: *Theory*, documents and documentation make up the instantiation of information in focus of the present study.
[2] It is problematic to draw boundaries between disciplines, and this is certainly the case concerning LIS and archival studies (cf. Latham, 2015, for an examination of the relationship between LIS and museum studies). Examples of the many points of contact between the disciplines include common concerns (the organization, description, facilitation of access to corpuses) and conceptual scaffolding (knowledge, memory, heritage; see Bates, 2015), and to some extent research outlets. It is not unusual for scholars to publish in both fields, and there are instances where LIS and archival studies, along with museum studies, are located within the same departments—see e.g., Uppsala University and Lund University in Sweden, and Oslo and Åkershus University College of Applied Sciences in Norway. There are of course also differences between LIS and archival studies that make distinctions between them not unproblematic, but feasible both in a text such as this and in terms of academic organization. These differences stem from among other things the intellectual traditions of the disciplines, the professional fields they bear connection to, and their partly varying conceptual vocabularies.
[3] See Section 1.5: *A note on terminology* for an introduction of key terms and concepts.
[4] The sequence of events presented in the vignette was observed during the sub-study that is reported in Paper III. User names have been anonymized.

general observation: in the current day, videogames and social media are interwoven in many, and complex, ways. Videogame retailers and developers use social media for marketing, for instance via advertisements placed on videogame wikis and discussion forums. Some videogame developers act in the borderland between product-promotion and inviting community participation, and utilize social media to showcase and discuss upcoming games and their features. Youtube and Twitch[5] are prominent examples of how sites with the option to monetize contributions, in combination with large numbers of consumers, have turned the production (and of course, hosting) of videogame-related social media into an industry by itself. Additionally, some videogames have integrated the functionalities of social-media services like Facebook or Twitter so as to offer the player a quick way of disseminating the results of gameplay or other information.

The activities of Tokugawa, Lenodi, and Ryu, and the communal wiki-project they were working on, bring forth yet another aspect of how videogames and social media are enmeshed with each other; and this is the aspect to which the study now turns. Videogame play (whether online of offline) and videogame communities are to a significant extent intertwined with the use and production of information on, and participation in, the social-media environments related to the game of relevance (Barr, 2014; Newman, 2008; Newman, 2012a; Pearce, 2011). The array of social media available—forums, blogs, wikis, Twitter—are the daily theaters where gameplay procedures and the social processes of videogame communities (Nardi, 2010; Newman, 2011; Taylor, 2006), tasks of organization and management (Chen, 2012; Vesa, 2013; Warmelink, 2014), narrative activities and experience sharing (Harrison, 2009; Wirman, 2007), knowledge production (Barr, 2014; Steinkuehler and Duncan, 2008; Golub, 2010), information trading (Harviainen and Hamari, 2015)[6], among other important interactions and communications (e.g., Boellstorff, 2008; Pearce, 2011) in the videogame domain are negotiated and carried out.

This brief outline of how videogames and social media are positioned toward each other shows that social media fill several important roles in videogame play and videogame-community social life—both in the capacity of sites of storage and dissemination, and as sites of interaction and information production. The intersection of community-produced social media and videogames hence promises to be a highly interesting field of inquiry for LIS research directed by one of the canonical motors of the discipline: to inquire into the processes by which information emerges, and to nuance the understanding

---

[5] Twitch (2017) is a "social video platform" that facilitates live broadcast of video—a 'stream'—along with live viewer interaction via chat. Videogames constitute a major type of content on the site.

[6] Although the following studies fall outside the scope of the present one, it should be observed that videogames have been previously explored from different perspectives stemming from LIS. Examples include Harviainen and Savolainen (2014), Harviainen and Vesa (2016), and Jørgensen (2013).

of the roles of this information within its contexts of production and use (e.g., Hartel, 2010; McKenzie and Davies, 2010; Sundin, 2011). Once again, the scenario taking place on the DSW can serve as an illuminating example. The simple exchange between Tokugawa, Lenodi, and Ryu has several components of interest for the information scholar. These components include the activities of the contributors involved; the community-set aims and priorities that informed their approaches and conclusions; the characteristics of the two platforms in play—the wiki as a tool of work, of communication and of information storage, and the videogame as source material in the investigations of the wikis' contributors—among others. Together they provoke questions regarding the nature of the communal activities through which information in the influential and widely used spaces of videogame-related social media is produced, the underpinnings that shape and support these activities, and the role of social media in videogame communities.

1.2. Setting the stage II: archival matters

> Videogames are disappearing. […] No really, they are. (Newman, 2012a, p. 1)[7]

Here, the opportunity arrives to tie the juxtaposition of information in community-produced social media, videogames, and LIS inquiry into the archival sphere via the matter of videogame preservation. As has already been argued, videogames are archival objects with a heritage status that is often attributed to their cultural, economic, social, historical and scholarly importance. Although there are exceptions, videogames are of generally low preservational priority in the contexts of the videogame-development industry and traditional archives, libraries, and museums (Bachell and Barr, 2014; Barwick, et al., 2011; Kraus and Donahue, 2012; Newman and Simons, 2009). Videogames as a phenomenon of preservational worth in combination with the perceived lack of efforts concerned with their safekeeping are major underlying factors in the sense of urgency that is communicated in many texts of the videogame-preservation literature. Videogames are highly volatile objects with a lifespan measured in decades without intervention, which puts them in contrast with the longevity of other materials found in the collections of ALM institutions. Archival research and efforts must engage with the preservation of videogames or else less-than-new games, and their related materials, will be lost, along with the opportunities they offer to inquire into the roles of videogames

---

[7] For examples of videogames that have 'disappeared' in the category of online-only videogames, see appendix A in the *Preserving Virtual Worlds Final Report*: "Virtual Worlds that Died During the Grant" (McDonough, et al., 2010, pp. 134–139).

and videogame play in recent history (McDonough, et al., 2010; Newman, 2012a; Stuckey, et al., 2013b; Swalwell, 2007).

The venture of preserving videogames is complicated by the fact that videogames evince a series of qualities that make them a challenging archival case in terms of preservational method, most notably dependencies (of hardware, software, and sometimes network connections and Digital Rights Management—'DRM'—systems) and the difficulties of how to represent the intrinsic interactability and distributed nature of videogames in archival collections. Research on and archival efforts directed towards the preservation of videogames can be split approximately along the same lines. Firstly, much work has been dedicated to developing methods to ensure the safeguarding and continued functionality of the videogame software (Anderson, et al., 2010; Guttenbrunner, et al., 2010; McDonough, et al., 2010; McDonough, 2011; McDonough, 2012). Secondly, several scholars have argued for and explored how to include the sociocultural aspects of videogaming in the holdings of archives (Lowood, 2004; Lowood, 2011; Newman, 2012a; Shipman and Marshall, 2014). The collection of community-produced social media has been suggested to be a crucial step in the documentation of the activities, processes, and outlooks of videogame players and videogame communities (Harrison, 2009; McDonough and Olendorf, 2011; Winget, 2011a), and is a prerequisite step to meaningfully preserving videogames (Newman, 2008; Newman, 2012a). Research seeking to explore how videogame social media are created have been put forward as a necessary first step in establishing "a robust collection and preservation model" of such materials (Winget and Murray 2008, p. 2; see also Winget 2011a).

Significant progress notwithstanding, videogame archiving as a field of preservational activity and research is still at an early stage. The current study adds to the state of knowledge concerning the second preservational focus outlined above by providing research-based insights into how information is produced in videogame-related social-media environments, and the role of such information in the videogame communities that use and produce it. Of course, an inquiry of the present kind cannot resolve the issues and uncertainties relating to the preservation of sociocultural dimensions of videogames. It can, however, strive to provide dependable results able to inform preservational know-how and theoretical considerations like those relating to priority, selection, appraisal, and description. The motivation for putting the study of videogame-community social media in dialogue with the problem area of videogame preservation lies precisely here: a basic tenet of archival work is that well-founded archival decisions, along with the capacity for evaluative analysis and theoretical development, require intimate knowledge of the material in focus, its characteristics and provenance(s) (Gilliland and McKemmish, 2004; Kirschenbaum, 2012; Mortensen, 1999, p. 20). This consideration is especially poignant concerning relatively new archival objects such as videogames, where best practices have yet to be established and conclusions based

on the experiences of earlier projects of a similar nature are largely unavailable (McDonough and Olendorf, 2011; Winget, 2011b).

1.3. Problem statement

The study of how videogame communities use social-media spaces has proceeded under the disciplinary umbrellas of LIS, archival studies, game studies, organizational studies, anthropology, and more. While this corpus contains inquiries with a broad range of research interests, few studies have focused specifically on examining the relationship between videogame communities and videogame-related social media, and how information in the latter emerges as a result of the activities of the former. With some exceptions (e.g., Barr, 2014; Bullard, 2013; Harviainen, et al., 2012; Newman, 2008; Newman, 2012a; Sköld, et al., 2015; Steinkuehler and Duncan, 2008), there has been a trend in this collection of works to tangentially touch upon videogame-community social media as a step in the investigation of other (albeit related) matters, for example the organization of play (Warmelink, 2014), videogame culture (Boellstorff, 2008, pp. 198f), and the social processes of videogame communities (Pearce, 2011). Similar observations can be made regarding previous studies of videogame preservation. Player-created information objects like the ones found on videogame-related social-media platforms are considered to be of preservational priority (MacDonough, et al., 2016; McDonough and Olendorf, 2011; Newman, 2011; Newman, 2012a), but curiously few attempts have been made to delve into the contexts and modes of production in and by which they emerge (Crawford, 2012).

The study of social media as a setting of information production in videogame communities as suggested here hence adds to several strands of research. Most broadly, such an effort benefits studies interested in other aspects of videogame communities by providing correlative insights into how the production of information in social-media environments are entangled with community social life. It also broadens the understanding of how information in online social-media environments emerge as a result of community activities of production—and contribute to the more specific state of knowledge on this matter in the large and influential present-day videogaming domain. The present study furthers archival inquiry on the topic of videogame preservation by providing a description and analysis of what information objects videogame-related social media plausibly hold, and by what communal activities and processes they have been brought into existence. It also discusses the consequences of collecting such community-produced social media and framing it as documentation of the sociocultural aspects of videogames—a key issue in the preservation of videogames (Newman, 2012a).

The overarching purpose of the current study is to examine how online videogame communities are entangled with the social-media services they employ, and to suggest how such insights can be put to use in the area of videogame preservation. As seen in the preceding few pages, the present study operates at the intersection of LIS inquiry into the production of information in context, and archival-studies research on videogame preservation. The research work presented here has similarly been guided by dual aims, where the accomplishment of the first is a prerequisite for the fulfillment of the second. *Firstly*, the present study aims to theorize and subsequently develop an understanding of how the shape and form of videogame-community social media are linked to the contexts and modes of information production by which they emerge. Attention will be directed towards social-media based information production in the context of two processes of importance in community social life: memory-making and knowledge production. Memory-making and knowledge production are important and commonly occurring areas of activity in the social life of communities and other groups and organizations (Blacker, 1995; Bobrow and Whalen, 2002; Bowker, 2005; Featherstone, 2000; Gherardi, 2012; Halbwachs, 1992; Nicolini, 2013; Orlikowski, 2002; Walsh and Ungson, 1991). The delimitation of studying videogame-community information production as it transpires through memory-making and knowledge production hence stands to yield robust insights into how videogame communities are entangled with their social-media environments, and how these environments emerge as a result of the information-producing activities of the communities that use them.

The study's first aim is pursued on the basis of the following research questions:

1. How are videogame-community memory-making and knowledge production enacted in practice?
2. How are videogame-community memory-making and knowledge production configured by the characteristics of the social-media environments in which they are carried out?

Secondly, the study aims to operationalize the acquired insights into videogame-community social media in such a manner that it can benefit the area of socioculturally-focused videogame preservation. The research questions addressed are:

3. What is the current state of socioculturally-focused videogame-preservation research in terms of priorities, methods, and conceptions?
4. How can the deepened understanding of information production in videogame-community social media inform preservational efforts directed towards the sociocultural elements of videogames?

The research questions directed the focuses and approaches of the four sub-studies (reported in Papers I–IV) on which the current work is based, including choices of data sources, research methods, and theoretical dimensions. Table 1 holds an overview of the papers, the study's introduction, and the roles these outputs play in the study as a whole.

Output	Empirical keywords	Role in the study	Approach	Purposes
Paper I. Sköld, O., 2013. Tracing Traces. A Document-Centred Approach to the Preservation of Virtual World Communities	Literature	Develop a theoretical framework for Papers II–IV	Qualitative and synthetic conceptual analysis of literature	RQs 1, 2
Paper II. Sköld, O., 2015. Documenting Virtual World Cultures. Memory-Making and Documentary Practices in the City of Heroes Community	City of Heroes; Reddit	Explore videogame-community memory-making in social-media spaces	Interpretative analysis of the material on the CoH subreddit	RQs 1, 2
Paper III. Sköld, O., 2017. Getting-to-Know. Inquiries, Sources, Methods, and the Production of Knowledge on a Videogame Wiki	Dark Souls II; Wiki	Explore videogame-community knowledge production in social-media spaces	Online ethnography of a videogame wiki	RQs 1, 2
Paper IV. Sköld, O., 2018. Understanding the 'Expanded Notion' of Videogames as Archival Objects. A Review of Priorities, Methods, and Conceptions	Literature	Analyze current patterns in the videogame-preservation literature to allow Papers I–III to be situated in an archival studies-context	Qualitative systematic review of videogame-preservation literature	RQs 3, 4
The study's introduction	Literature; Papers I–IV	Bring together and expand on the results of Papers I–IV	Synthesis and analysis	RQs 3, 4

Table 1. Overview of Papers I–IV and the study's introduction.

Methodically, the study positions itself in the exploratory and qualitative research paradigms. Theoretically, a multi-part framework is used to analyze the results of the inquiry's sub-studies. The practice-theoretical perspective provides the principal means to frame how the patterned and everyday activities observed in the source data are connected to the social life of the community under study. Practice theory explains that social reality is processual in nature

and collectively put into being via enacted programs of distributed activity—practices. All social phenomena are constituted by and transpire through such practices (Gherardi, 2012; Nicolini and Monteiro, 2016; Schatzki, 1996; Schatzki, 2002). The application of practice theory is further defined by the influence of the specific instantiation of information-research commonly called 'document studies.' The document-studies perspective underscores the materiality and situatedness of information and puts forward the study of documents and documentation—usually defined so as to extend beyond the document as text-on-paper (see Lund, 2010 for a review of different document definitions)—as a valuable approach to understanding the information processes of communities and institutions (Brown and Duguid, 1996; Buckland, 2017; Frohmann, 2004a; Riles, 2006a). The practice-theoretical and document-studies traditions provide the benefit of framing the production of information in videogame communities in social-media environments as transpiring through documentary practices, an analytical concept well suited for application in the trace-generating operations of many social media in the present day (Geiger and Ribes, 2010; Geiger and Ribes, 2011; Schuurman, 2008). The theoretical framework outlined in Chapter 5: *Theory* ties together and positions memory-making and knowledge production as specific instantiations of videogame-community documentary practices in social-media environments. Finally, research on fandom (e.g., Jenkins, 2006; 2013), the productive activities of online communities in social-media environments (e.g., Barr, 2014; Golub, 2010; Jenkins, 2008; Jenkins, 2013; Newman, 2008; Steinkuehler and Duncan, 2008) and videogame preservation (e.g., McDonough, et al., 2010; Newman, 2012a; Winget, 2011a) is used to contextualize the contributions of this study in the broader area of digital culture and the archival sphere respectively.

This study was written under the auspices of a department of ALM[8] by an author whose areas of research and teaching fall principally within the first two disciplines represented in the acronym. Given this genesis, the present work shows some of the strengths, shifting scopes, and possible challenges that may come of positioning a LIS project in dialogue with current research problems in the archival sphere with the express intent of letting insights produced via the means and perspectives offered by LIS come to fruitful application also in this other realm. It can be noted here that the ALM characteristics of this study are synergistic with the undertaking of videogame-preservation research and practice, which is often described as spanning the spheres of archives, libraries, and museums (Lowood, 2004; MacDonough, et al., 2016; McDonough, et al., 2010; Winget, 2011a).

[8] Archival studies, library and information studies and museums and cultural heritage studies.

1.4. Outline of the study

The study is organized in nine chapters followed by Papers I-IV. The first chapter set the stage by introducing the problem area and the rationale of the research project, along with the problem statement from which the project emanates. The chapter also presented an overview of the study's research design and the theoretical perspectives it employs. The second chapter provides an introduction to videogames and their contexts and characteristics, including a brief historical sketch. The third chapter introduces and discusses different dimensions of videogame preservation. The fourth chapter examines previous research on productive activities of communities in the domains of videogames, television series, and films. The focus here is also on the entanglement of online communities and social media. Chapters two through four are based on earlier research, and together serve to provide accounts of the present state of knowledge regarding the subject matter of the current work. Choices of theory and methods are presented and discussed in chapters five and six. The four sub-studies (Papers I–IV) of the current work are summarized in chapter seven. The discussion and conclusions of the current study are located in chapter eight, including the study's implications for the understanding of videogame communities' documentary practices and for archival procedure in the area of socioculturally-focused videogame preservation. The ninth and final chapter contains a summary in Swedish.

1.5. A note on terminology

There is somewhat of a discrepancy between the terminologies of the introduction to this study and Papers I–IV. These differences should not be seen as departures from previously taken positions, but more precisely as the result of a deepened and evolved understanding of the theories and concepts that have seen repeated use in this study.

1.5.1. Information and documents

Information is considered to be the conceptual bedrock of LIS. As pointed out by Buckland (2017) and Bates (2007), an important quality of the notion of information is that it can subsume many categories of objects and activities. This means that there are often terms available that better fit the demands posed by the characteristics of that which is discussed or studied (Buckland, 2017). In the case of this study, 'documents' and 'documentation' are the interchangeable terms favored over information. Documents are informative when they become a meaningful part of a practice (Frohmann, 2004b). In this view, information is by definition tied to capacity for action. Because (the same)

documents can potentially be parts of multiple practices they can be informative in different ways in different contexts—this is what marks documents as boundary objects. Practices with documents are here termed 'documentary practices.' Documents and documentary practices play key roles in—and are analytical points of entry in the study of—memory-making and knowledge production, as shown below.

See Chapter 5: *Theory* for extended discussions of documents, practices, and information.

1.5.2. Knowledge production and documents

The production of knowledge is here understood as the result of practices connected to the aim of making "organized statements of facts or ideas" (Bell, 1973, p. 41, as cited in Knorr-Cetina, 1999, p. 6) in a specific and regulatory context, be it professional or leisure, university science labs, or wikis. These practices involve the use, creation, and circulation of documentation to a significant extent (Frohmann, 2004a; Latour and Woolgar, 1979; Riles, 2006a). The production of propositional knowledge presupposes procedural knowledge in the sense that its producers must be able to competently participate in the knowledge-producing practices. Knowledge production by videogame communities in social-media environments is understood to transpire through documentary practices.

See Section 5.3.1.1: *Documentary practices, knowledge-production, and memory-making* for extended discussions of documents, documentary practices, and knowledge production.

1.5.3. Memory-making and documents

Like knowledge production, memory-making is a social process analyzable by virtue of being enacted in practice. Memory-making is an important part of the functioning of every social system and entity (Bowker, 2005; Halbwachs, 1992; Featherstone, 2006; Nora, 1989; Walsh and Ungson, 1991). Videogame-community memory-making in the context of this study consists of the interplay between how documentation about the past is produced and circulated in videogame-community social media and put to work in the present doings of the community in question. Videogame-community memory-making in social-media spaces is considered to be conducted through the performance of documentary practices.

See Section 5.3.1.1: *Documentary practices, knowledge-production, and memory-making* for extended discussions of documents, documentary practices, and memory-making.

1.5.4. Online community productivity

The prefix 'productive' is used to denote such activities and communities that are oriented toward the production of documentation on social-media services that is also accessible to other users. Such activities are framed in the present study as documentary practices. The prefix plays the role of a wide-ranging instrument able to bring together research of many traditions and focuses that deal with community productivity both inside and beyond the realm of video-gaming, for instance the community of wiki contributors in focus of Paper III or—to take an example from the domain of television series— the community of Usenet-based Twin Peaks enthusiasts discussed by Jenkins (2006). The term production as it is used in this study thus means to bring things into existence in the aforementioned sense, and has no moral undertones that might stem from the thought figure of 'being productive.'

Earlier studies (for instance those of Jenkins, 2006; 2008; 2013) relevant for the topic of online community productivity use the terms 'fan' or 'fandom' in different variations as catch-alls for the non-professional engagement of people and communities in television series, films, videogames, music, et cetera. The fan terminology is only employed when discussing these studies; it is not a part of the analytical framework of the present work.

See Chapter 4: *Online communities and online community productivity* for extended discussions of productive activities in online videogame communities and communities in the broader fandom domain. Practices, documents, and documentary practices are discussed in Chapter 5: *Theory*.

1.5.5. Preservation

'Preservation' is the primary umbrella term for the steps that make up the process of safeguarding and providing access to materials, e.g., selection, collection, arrangement, description, and storage of games and game-related documentation. 'Archiving' is at times used synonymously for the sake of variation.

1.5.6. Social media

Websites, forums, blogs, wikis, Twitter, and other services that center on user-produced documentation are grouped under the term 'social media.' Two reasons justify this choice of nomenclature. Firstly, the research course pursued in the present study requires a way to collectively refer to such services. Secondly, the term social media underlines that forums, blogs, wikis, et cetera, offer ample opportunities of interaction between users, which is a central concern in the present work.

1.5.7. Sociocultural

The term 'sociocultural' is used to refer to that which is configured by social structures and culture. The term is used as a prefix to videogame preservation and videogames to refer to aspects of videogames other than those related to the videogame artifact, e.g., game culture, cultural and social aspects including experience, play, and community social life and activity.[9] The social and cultural dimensions of videogames and videogame play are understood to emerge from, transpire through, and be analyzable in the practices of the people that play and otherwise engage in them. The sociocultural perspective as it is employed here also puts emphasis on the historical and material situatedness of videogames and videogame play, although the former aspect is to a lesser extent in focus. Research or preservational projects seeking to preserve the sociocultural dimension of videogames thus have a contextual focus, and do not concern themselves as much with the code or audiovisual data resources of the videogame.

See Section 1.5.9: *Videogames, videogame play, and the videogame domain* and Section 2.3: *Videogames and videogame play defined* for discussions of the definition of videogame play adopted in this study. See also Chapter 5: *Theory* for more information on the present study's use of practice theory.

1.5.8. Videogame community

The term 'community' is used in this study to refer to the often-fluctuating, online gatherings of people that employ particular videogame-related social-media services (wikis, discussion forums) as the primary window of coordination and communication among members. Community membership as well as the emergence, perseverance, change, and demise of videogame communities is understood to be tied to the practices enacted by community members.

See Section 4.1: *Online communities* and Section 5.3.1: *Practices with documents in videogame-community social media* and Section 6.4: *A traced-based approach to the study of online videogame communities* for extended discussions of practices, online communities, and online videogame communities.

1.5.9. Videogames, videogame play, and the videogame domain

'Videogames' is used throughout this study as a catch-all term for the sorts of games that are run using computing power, including computer games, con-

---

[9] This dimension of videogames was operationalized as the expanded notion of videogames ('the EN') in Paper IV.

sole games, arcade games, and smartphone games. No distinction is made between videogames and 'virtual world' environments like Second Life (SL).[10] Videogame play (or 'videogaming') is considered to encompass a range of activities where actual gameplay is one of many. Videogame play as it is defined in this study does not privilege the moment of play. Instead, it puts forward the importance of activities that constitute play "*with* videogames" (as opposed to playing videogames; Newman, 2008, p. 13, emphasis in original)—e.g., wiki editing, reading and writing in discussion forums, watching videos and livestreams, et cetera. See Chapter 2: *Videogames* for extended discussions of videogames and videogame play.

The concept 'videogame domain' denote the totality of things, occurrences, activities, companies, and communities that are meaningfully related to videogames in some respect. The domain concept is similarly used in relation to other areas such as television series or other 'fan' domains (see Chapter 4: *Online communities and online community productivity* for examples).

---

[10] SL is a massively multiplayer open-ended online platform where users, embodied as avatars, may engage in a wide variety of pursuits. The design of SL emphasizes social interaction, the creation of spaces, buildings, and things, and economic activities.

2. Videogames

The entire range of written discourse on videogames, be it academic, journalistic, or produced by people invested in games in other capacities, operates on a set of diverse and sometimes overlapping core concepts. What is here called videogames is varyingly termed 'video games' (Crawford, 2012), 'synthetic worlds' (Castronova, 2005), 'virtual worlds' (Boellstorff, 2008; Warmelink, 2013), 'computer games' (Carr, et al., 2000), 'digital games' (Garrelts, 2005) or the prefix-less 'games' (Mäyrä, 2008). The reasons for adopting one term over the other are not always given, and when they are, the choices carry implications of differing weight. For example, Crawford (2012) chooses the term video games because it is perceived to be the one in most common use. With reference to Bartle's (2004) reasoning about the terminology of games, Warmelink (2014) turns to the concept of virtual worlds because it carries a lesser degree of predetermination regarding the features of videogame environments and the types of interactions and events that take place there. Similar conceptual fragmentation exists regarding what to call the people that play games—players, gamers, fans—and the groups they form, e.g., virtual communities, videogame communities, and communities of play. As stated earlier, the terms videogames, players, and videogame communities will be used consistently throughout this work.

This chapter introduces and discusses the major points made in the research literature regarding the history, current status, and characteristics of videogames. At chapter's end, the review arrives at the point of view of videogames and videogame play that informs the present work. Videogame communities is in focus to a lesser extent. As they are of central importance to this work, they will instead be discussed separately in Chapter 4: *Online communities and online community productivity*, in Section: 5.3.1: *Practices with documents in videogame-community social media*, and in Section 6.4: *A trace-based approach to the study of online videogame communities*. The depth and nuance of the rendering of videogames below is geared to function as a background for subsequent chapters. For more comprehensive reports and analyses of key aspects of videogames, see the following works: Mäyrä (2008, pp. 52–151) and Bartle (2010) on the history of videogames; Boellstorff (2008), Bogost (2006), Juul (2011), Salen and Zimmerman (2004), and Taylor (2006) on the nature of videogames; and Crawford (2012) and Newman (2004, pp. 49–70) for analyses of videogame players and the way they play.

2.1. A very brief history and present-day status of videogames

The first computer-powered games emerged in the 1950s (even perhaps earlier) and early 1960s (Mäyrä, 2008), with the 1962 title Spacewar! being a landmark game in the early history of videogames. Like Spacewar!, many of the early videogames were developed in university computer labs. These labs were at the time one of the few types of places that would house computer equipment—which was then rare, physically imposing, and expensive—and employ people with the skill sets needed to pioneer videogame design and programming. The popularity of videogaming surged in the 1970s and 1980s, and videogames became increasingly visible and influential phenomena also in wider cultural contexts and other media, such as books and films. Important drivers of this development were arcade-based systems[11] (with titles such as Space Invaders and Pong), and machines designed to be used at home, like personal computer systems like the Commodore 64 (Elite), and videogame consoles[12] such as Nintendo's NES (Super Mario Bros.; The Legend of Zelda) (Crawford, 2012). The exponentially increasing processing power, storage-media space, and availability of Internet connectivity during the 1990s and 2000s had significant impact on videogaming (Mäyrä, 2008). Consoles and computers got the capacity to present the player's environments in three dimensions (for instance as in the 1993 title DOOM), and used Internet-based communication to facilitate persistent multiplayer game worlds like the early 90s LambdaMOO and the 2004 MMORPG World of Warcraft. The increased computational capabilities of cellphones and later smartphones and tablets during this area provided opportunities to play both single- and multiplayer videogames on handheld systems that were not specifically designed to do so, which contributed to the ubiquity and variance of videogames and modes of play.

In the present day, videogames are one of the major forms of electronic media with a large cultural and economic footprint. According to a 2017 statistics report from the U.S. videogame-industry interest organization The Entertainment Software Association (ESA), U.S. consumers spent over $30 billion on videogames in 2016—including the sales of videogame hardware and accessories—and over 65 000 people in the US were employed by videogame

---

[11] For instance, the coin-operated videogame machines installed in business like videogame arcades, restaurants, billiard halls, malls, and so on.

[12] A console is a computer purpose-built for playing games using an external display (usually a television set) and control peripherals. While home-based computer systems like the Apple MacBook or a PC desktop computer can be used to play games as well as to complete a great number of other tasks, consoles are designed to have more limited functionalities. Examples of consoles include the Sony PlayStation and Microsoft Xbox series, and Nintendo's NES and Switch.

companies (Entertainment Software Association, 2017). Swedish Games Industry (2017), a partnership organization similar to ESA, estimates that there are 2.2 billion videogame players worldwide spending a total of $108 on videogames in 2017, and that the Nordic[13] Game Industry employs approximately 8 800 people[14]. The ESA's surveys also present results that may run counter to preconceptions about videogaming. Devices that are used to play videogames were present in 67% of American households, and the average player of videogames was 35 years old. Looking at gender and age in combination, the ESA concludes that women over the age of 18 were a "significantly" larger group in the total population of players than boys aged 18 and under (Entertainment Software Association, 2017, p. 4). Such statistics aside, the current popularity and cultural influence of videogames are furthermore indicated by the large and established sets of videogame-associated industries, services, and activities, like Internet live-streaming of videogames, the manufacture and sales of computer hardware designed to provide gaming performance, videogame journalism, competitive gaming, and the reciprocal influences between videogames, films, books, and music.

2.2. Videogames in context

Videogames and videogame-related occurrences—gameplay, videogame communities—are to a certain extent distinct from to other media formats and their associated patterns of interaction and consumption (Juul, 2011). Simultaneously, however, videogames carry multiple and complex relations that extend beyond the immediate domain of videogames. To counteract the risk of over-emphasizing the boundedness and particularity of videogames, two instances of videogames-in-context will be looked at more closely in the following: how videogames can be positioned in the history of play and games, and how scholars of various disciplines have explored the boundaries of videogames and videogaming.

Juul (2011, p. 3) makes the case that videogame history is both "brief and [...] long." In comparison with television, film, radio, or the printing press videogames have a relatively short history. But, the genesis of videogames is not necessarily equatable with the moment when computing power, inputs, and monochrome displays were pressed into service to run videogame software for the first time. People have been playing board games for thousands of years in civilizations such as those of ancient Egypt (Senet) and China (Go). Because of the prevalence of games throughout history, Mäyrä (2008, p. 37) calls

---

[13] Sweden, Denmark, Norway, Iceland, and Finland.
[14] The Swedish Games Industry-association (2017, p. 28) states that the methods used to measure the Nordic game industry have not been uniform. While this does make comparisons between countries problematic, the number offered here suffices to provide general indications of size of the Nordic industry in terms of its employee count.

games and play "cultural universals," thereby echoing the understanding of games advanced by figurehead scholars of non-digital games Avedon and Sutton-Smith (1971; see also, Sutton-Smith, 1997) and Huizinga (1998), who attribute play and games important roles and functions in human culture and psychology. Although scholars debate the analytical usefulness of the links between videogames and non-digital games (cf. Bogost, 2006; Juul, 2011), the position taken in this study follows that of Crawford (2012): videogames are new and distinct from older instantiations of games in some senses, and share their characteristics in others. The consequence is that the study of videogames can be meaningfully informed by earlier studies of traditional games, videogames, and the theories, methods, and interpretative aids offered by the study of other human ventures.

Scholars have also expanded upon how videogames and videogame play intersect with other activities set in online space. Multiple accounts in this vein aim to establish the very fundamentals of how videogames relate to human affairs. Pearce (2011, p. 17) acknowledges that online communities formed in videogame and videogame-related environments (like videogame social media) are "as real as any that form in proximal space." In Pearce's analysis, important differences between online and 'proximal' communities are that the behavior of community members of the former category to a larger extent emerges though interaction with the design specifics of the game and game-related spaces (wikis, discussion forums) they inhabit. Castronova (2005) is principally interested in economic aspects of multiplayer videogames, manifested both as in-game and as an industry, but recognizes them as sites that host other important and non-gaming activities as well. Based on ethnographic examinations of SL and Everquest respectively, Boellstorff (2008) and Taylor (2006) comment on the nature of videogame culture. Their lines of argumentation diverge after this common starting point, but the general conclusion is the same: there are no clear lines of demarcation. Taylor (2006) arrives at this conclusion by showing that a meaningful understanding of videogaming requires the dissolution of the dichotomies of game–non-game, social–game, online–offline, and virtual–real. Videogame play is situational, and relies on an amalgamation of technologies, cultures, social contexts, and personal understandings. In his study of SL—which is termed a virtual world—Boellstorff (2008) calls into question what a virtual world is at a fundamental level. Boellstorff argues that all human experience is culturally configured and hence 'virtual.' While there is such a thing as a particular culture located in SL space, Boellstorff says, SL itself (and other virtual worlds) and the interactions therein, are to be understood as another place of human interaction and not an imitation of 'actual' life. In this sense, virtual world cultures are both bounded and porous (cf. Pearce, 2011; Warmelink, 2014). Mäyrä (2008, pp. 13–29) predicates his monograph-length introduction to the discipline of game studies (subtitled "Games in Culture") on the understanding of "game culture" as a subculture in the broader cultural systems of present-day society.

Besides these more general, almost ontologically focused, examinations of the boundaries of videogames and videogame-related phenomena there are studies that more specifically argue for the transferability of videogame research. Vesa (2013) inquires into in-game groups and videogame players to gain insights that benefit organizational and management studies. Crawford (2012), Jenkins (2008), and Juul (2011) point to the closeness of videogames and other media formats, and indicate that insights into the videogame domain also can benefit the understanding of also other media and associated patterns of interaction and consumption.

2.3. Videogames and videogame play defined

The question of how to define videogames has been the object of discussion in a large number of articles and monographs. Sometimes these discussions are paired with attempts at elucidating the fundamental characteristics of videogames and videogame play, and sometimes not. To showcase the breadth of theoretical approaches available, two of the most prominent ways of understanding videogames will be touched upon in a few broad strokes below.

One of the most, if not the most, prevalent debates regarding the characteristics of videogames centers on whether they should be approached as media texts or as games (Crawford, 2012; Juul, 2011; Mäyrä, 2008). The first approach is often referred to as 'narratological' and the second 'ludological' (derived from the Latin word for 'game,' ludus). While there are few scholars that embrace either perspective to the total exclusion of the other—some even call into question the premises and usefulness of the debate (Aarseth, 2012; Frasca, 2003; Pearce, 2005)—a brief overview of the main arguments is an effective means of further unpacking the notion of videogames so as to pave the way for discussions of the conception of videogames and videogame play at work in the current study and the different approaches to videogame preservation in focus of the next chapter. To begin, the narratological approach revolves around the viewpoint that theories and terminology springing from narrative analysis in media and literary studies can be productively applied to the study of videogames (Aarseth, 2012; Crawford, 2012). Videogames here emerge as a new representational and storytelling medium that lends itself to theoretical and empirical comparison with other, similar, media such as books, television series, and films. The work of Murray (1997) provides an early example of a narrative analysis of videogames. Of a later date, Jenkins' (2006; 2008; 2013) research on participatory fan cultures and media convergence handles videogames in the same way it does television series or film—as an instance of media. Where the narratological approach entails a grounding in narrative theory, research of the ludological orientation stresses that videogames are games, and that the methods and theories applied in their study should also reflect this quality. Salen and Zimmerman (2004, p. 86) summarize two key

ludological tenets when they write: "digital games are systems, just like every other games." Firstly, videogames are essentially systems that are played. Secondly, at the moment, there is no analytically meaningful distinction between videogames and other types of games. Mäyrä (2008, p. 10) regards the emergence of the ludological perspectives as a step in the process of developing more focused and independent efforts of game research by highlighting how games "when considered in their own terms as forms of art and culture, [are] in some sense unique, and in need of their own theories and methodologies of research." It should be noted again that the polarization of game research into the camps of narratology and ludology only is productive if used as a means to accentuate two influential approaches to game research, and to illustrate how games can be approached from different directions. The system–narrative split is not as prevalent in videogame research studies as it is made out to be in the sentences above, and many videogame researchers acknowledge that videogames are both game systems and narrative devices (Bogost, 2006; Wardrip-Fruin, 2009; preferences to adopt one or the other perspective as a starting point however remains visible; see e.g., Aarseth, 2012; Juul, 2011; Myers, 2010).

The present study adopts an understanding of videogames and videogame play that does not preclude narratological and ludological approaches. Rather, it operates on another level and on the basis of different interests. This viewpoint does not have a single source of inspiration, but many; see Crawford (2012), Mäyrä (2008), Newman (2004; 2008), Pearce (2011), Winget (2011b), and Taylor (2006). Following Mäyrä (2008, p. 2, Figure 1.1), videogame research is seen to be positioned at different locations in the interactions that exist between the poles of 'videogame,' 'player,' and 'context.' This study is located principally within the player–context dynamic because it is interested in how videogame-related social media emerge as the result of community documentary practices, and the roles that social-media environments play in the social life of the communities that produce them. Materially,[15] videogames are viewed as composite phenomena variedly made up of software, hardware and infrastructure (such as the Internet, including web-based services, software used in the production of videogames) peripherals and paraphernalia and other media—controllers, game guides and boxes, FAQs, YouTube videos, videogame journalism (cf. Newman, 2012a, p. 123, and Newman, 2008).

Play is considered to be an aggregate term that consists of many subsets of game-related, but non-gameplay practices and modes of gameplay. In other words, the notion of play that guides this work does not privilege the moment of play. Rather, it principally follows Newman's (2008, p. 13, emphasis in original) rendering of engagement with videogames to consist of videogame

---

[15] The separation between the categories of materiality, sociality, and culture is implemented for purposes of clarity while they are, in fact, enmeshed with each other. A videogame artifact is, for instance, a product of the practices of coding, game design, et cetera, of its developers.

play and play "*with* videogames." The latter category comprises a wide array of practices not seldom taking place in social-media spaces like the consumption and production of game guides, walkthroughs, gameplay performances, and reviews. Newman (2008, p. 13) considers play with videogames and videogame play to be mutually shaping to the point that even "'solo' play is always and already located within a community-authored set of meanings, readings and interpretations and the collective knowledge of players, commentators, critics and fans [...]." The dynamics of videogame play extend the entire micro–macro scale, from influences from the digital present in a broad sense—such as the impact of Wikipedia editing practices in the creation of community-produced videogame wikis (Paper III; Mittell, 2009; Mittell, 2013)—to local settings on servers, in forums, or offline play groups. Newman's (2008) conclusion is that people engage in videogames not only via play, but also by participation in non-play, though play-related activities like those mentioned above, and that any attempts to grasp videogames and videogame play must emanate from such a contextualized understanding.

The analysis and description of videogame-community documentary practices as carried out in the present study represent a theoretically informed attempt to engage with an instance of play with videogames (see Chapter 5: *Theory*).

3. Videogame preservation

From archival holdings to museal exhibits to the collections of abandonware[16] websites: in the present day, initiatives aiming to safeguard videogames are carried out in many different places and by many different means. This chapter provides an overview of the field of videogame preservation. The chapter is opened by a brief examination the major lines of argumentation regarding why the preservation of videogames is a worthwhile archival venture. The chapter then moves to focus on a sample of preservational initiatives present in the field. Approaches and perspectives of videogame preservation—in particular those relating to the preservation of the sociocultural aspects of videogames— are discussed in the final section of the chapter.

3.1. Motivations to preserve

A common part of preservational best-practice in the ALM setting is that the question of how to preserve an object is often preceded by a discussion of why it should be preserved (Booms, 1987; Cox, 2002; Minerva Working Group 6, 2003). This also applies to the preservation of videogames, where literature on the topic expresses a range of motivations.

In the literature relating to the preservation of videogames, the past and present status of the videogame phenomenon is a reason why videogames merit preservational attention. Videogames are artifacts with a large cultural footprint that significantly influence—and are part of—popular culture and therefore are of interest to safeguard. Bachell and Barr (2014, p. 158) describe videogames as "a cultural phenomenon; a medium like no other that has become one of the largest entertainment sectors in the world"; Pinchbeck writes in Anderson and Delve (2013, p. 3) that videogames "are as central to our culture, our heritage, our development as individuals as television or books"— a conclusion that is widely shared albeit often formulated without comparison with other media formats (Monnens, et al., 2009; Newman and Simons, 2009; Winget, 2011b). Intimately coupled with explications of the culturally shaping force of videogames are preservational arguments relating to the size of the

---

[16] In the context of videogames, abandonware signifies older games that are seemingly forgotten ('abandoned') by their copyright holders, e.g., regarding support. Abandonware games are still under copyright protection, however.

videogame entertainment industry, both in terms of revenue, as a provider of jobs, and as a promising part of the creative businesses sector. A large part of these arguments attribute preservational priority to videogames by virtue of their economic significance (McDonough and Olendorf, 2011; Newman, 2011), while some studies describe videogame archives as useful tools in the retention and development of knowledge in the videogame development industry (Bachell and Barr, 2014; Winget and Murray, 2008a). Besides the videogame-industry advantages of preserving videogames, videogame archives are key sources of documentation in scholarship seeking to inquire into the history of games and gameplay (Gooding and Terras, 2008; Pinchbeck, et al., 2009) and historical phenomena outside the bounds of videogaming (Chapman, et al., 2017). The historical weight of videogames also stems from videogames as widespread carriers of a broad array of historical representations and, hence, as shaping parts of historical knowledge and discourse (Begy, 2015; Pötzsch and Šisler, 2016).

In the writings on videogame preservation there are two main ways of justifying preservational efforts that draw arguments from separate technological aspects of videogames. First, and relating to the influence of videogames, Barwick, et al. (2008), Swalwell (2009), and others posit that videogames are archival objects of worth due to their important part in the development and diffusion of computing technology. The second technological argument emanates from the obsolescence and volatility of the videogame artifact. Videogames are "among the most fragile of digital works" posit McDonough, et al. (2010, p. 106), and present the "extensive dependency and interconnection [of videogames] with computer operating systems and particular hardware configurations" as the primary reasons for this state of affairs. This commonly occurring motivation to preserve videogames posit videogames as objects of archival value at high risk of becoming inaccessible and unreadable without preservational intervention (Guttenbrunner, et al., 2010; Lowood, 2009). Simply put: if videogames are not preserved, they will be lost.

The arguments for directing preservational efforts towards the sociocultural aspects of videogames are to some extent similar to those presented above. Socioculturally-focused preservational efforts are for instance justified with reference to the importance of games in current society and culture (Murphy, 2013) and in the history of computing (Swalwell, 2007). A range of motivations also emerge from specific views of what the defining characteristics of videogames are. Stuckey, et al. (2013a, p. 1) put forward the position that videogames "come to life in the act of play," and that videogame preservation by definition must take into consideration the interactable nature of games—for instance modes of gameplay (see also Antonescu, et al., 2009; Lowood, 2011a; Newman, 2012a; Winget, 2011a). Similarly, structured arguments describe videogame culture, player experiences, gameplay behaviors, modding efforts, social structures of videogame communities, et cetera, as phenomena

and processes that intrinsically make up what a videogame is. In this perspective, it is required by videogame-preservational efforts to put the sociocultural aspects of videogames into focus with the purpose of documenting the context of archived software and hardware, thereby making them more valuable and usable by future users (McDonough, et al., 2010; McDonough and Olendorf, 2011; Newman, 2011; Newman, 2012a; Winget, 2011b). Another motivation stemming from the definition of videogames as being inseparable from their context of use, but with additional importance attributed to the production and co-production of videogames by the videogame development industry and videogame communities, regards the ecosystems of videogames. The preservation of the sociocultural aspects of videogames is here seen as crucial in order to be able to document how games interact with related phenomena. Gooding and Terras (2008, p. 22) express this position by describing videogames as "dynamic experience[s]; shaped by the interaction of player, software, hardware, game design, and often wider culture such as film releases, historical events, and fashion."

3.2. Previous preservational initiatives

While not seldom described as scarce, there are a range of preservational initiatives concerned with the safeguarding of videogames that have been, or are being, carried out. Due to the varying aims, available resources, and institutional and organizational contexts of such preservational efforts, they differ in character and size. Lists of museums and archives located in North America and Europe that are engaged in videogame preservation can be found in Monnens, et al. (2009, p., 27), Winget and Murray (2008a), Barwick, et al. (2011), and Newman and Simons (2009). Neither the number of preservational initiatives relating to videogames nor their typologies are easily approximated. In lieu of a more systematic overview, some notable examples of videogame preservation of varying characteristics (ALM institutions, websites, research projects) are presented below.

Examples of large-scale preservational enterprises that also showcase the trans-institutional—ALM—character of videogame preservation abound. Situated in the U.S., the Strong National Museum of Play (2018a; 2018b) hosts the International Center for the History of Electronic Games (ICHEG) and the research repository of the Brian Sutton-Smith Library and Archives of Play. The latter is a repository of 187 000 items relating to play, videogames and videogame play, holding a wide array of materials including among other things professional journals, videogame company collections, and scholarly works. Specifically concerned with videogames and their culture and history, ICHEG collects and makes available through exhibition and archival access videogame software and hardware, along with other game-related materials (packaging, advertising, consumer products). ICHEG's collection is estimated

to consist of 60 000 items. Other mentions of relevance in the U.S. are the Stephen M. Cabrinety Collection in the History of Microcomputing, located at Stanford Libraries (n.d.), and the UT Videogame Archive (2017) which exists under the umbrella of the Dolph Briscoe Center for American History, the University of Texas at Austin. The National Videogame Arcade (2017) in the U.K.—run by the non-profit National Videogame Foundation (2017)—is a venue of the museum variety presenting their visitors with the opportunity to interact with a variety of videogame software and hardware and offers educational activities in the areas of programming and videogame development. In a Swedish context, preservation of videogames is carried out by the National Library of Sweden (2015). With support from Swedish legal deposit legislation the National Library has collected approximately 6 000 items since 1995. Further, the National Museum of Science and Technology (n.d.) in Sweden has hosted several videogame exhibitions, and a permanent videogame exhibition, holding videogame platforms and games from the 1970s onward, is provided by Stockholms spelmuseum (n.d.). Videogames additionally exist in institutional online repositories. The San Francisco-based nonprofit library Internet Archive (2017) offers free and online access to the wide selection of videogames and videogame demos present in their historical software collection. Varying from game to game, they can be downloaded to the user's computer or run directly in the web browser. The Internet Archive also carries a wealth of game-related materials like computer magazines and recorded gameplay (for the latter, see Archiving Virtual Worlds, n.d.).

Videogames are also the focus of manifold preservational efforts located outside of the ALM institutions, including both individually (e.g., private collectors) and community-run projects. Two examples of the latter category will be provided with the purpose of illustrating the scope and quality of extra-institutional preservational projects. Home of the Underdogs (HOTU) is a "museum of PC game underdogs" that reference Project Gutenberg in its statement of purpose: to provide abandonware games and game-related documentation for free (Home of the Underdogs, 2017). The site's collection counts over 5 300 games and 1 300 manuals, and each game has a database entry providing a description of the game, an often-ambitious set of interlinked metadata, and links to YouTube footage of gameplay at times. MobyGames (2018) is a participatorily created database that seek to "record all relevant information about a [current or non-current] game" with the purpose to "become a valuable historical public resource". Guided by a document detailing the standards and practices of the site, the MobyGames database contains 118 212 entries of videogames released on 203 platforms (MobyGames, 2017). The site does not distribute the videogame executables, but like (and sometimes in exceedance of) HOTU it provides a wealth of interlinked metadata and offers links to critic and user reviews, screen shots, promo art, and more. Focusing on videogame music, the High Voltage SID Collection (HVSC) is a collection of 41 200 pieces of music from the Commodore 64 (C64) computer

managed and curated by the site's crew in collaboration with its contributors. The aim of the site is to "attempt to accurately archive the most popular C64 SIDs into one complete collection" (High Voltage SID Collection, 2017).[17] The HVSC provide its potential contributors with extensive documentation, including metadata structures and how-to guides. Unseen64 (2017) and The MAME Project (MAME, 2017) are other notable examples of community-sourced preservational initiatives.

Initiatives in the area of videogame preservation also exists in the form of development and research efforts. To mention a few, Preserving Virtual Worlds (PVW; 2007–2010) was a collaborative research project between American research institutions funded by the Library of Congress' National Digital Information Infrastructure for Preservation Program (McDonough, et al., 2010). PVW took a case-study approach to exploring a range issues of videogame preservation. Standards for metadata and content representation, preservation strategies including migration and emulation, documentation of context, and legislative hindrances to videogame preservation were instances of focus in the project. PVW generated a series of research papers (among others Kraus and Donahue, 2012; McDonough, 2011; McDonough, 2012; McDonough and Olendorf, 2011) aside from the project report (McDonough, et al., 2010) and a digital-game-preservation white paper (Monnens, et al., 2009). Keep Emulation Environments Portable (KEEP; 2009–2012) is an example of a more narrowly focused research initiative in the realm of videogame preservation. Funded by the European Commission's Framework 7 program and made up of European national libraries, universities, and other partners, KEEP aimed to develop a software architecture—designed to have the least amount of dependencies possible—into which existing emulation software can be integrated (Pinchbeck, et al., 2009). KEEP's software framework thus serves to mitigate the consequences of emulation-software obsolescence. Once again returning to a Swedish context, the National Museum of Science and Technology (2016) in Sweden at the time of writing funds a research project geared towards exploring practices of gameplay in the contexts of co-creative game design, YouTube Let's play videos, and co-operative play.

3.3. The procedures and perspectives of videogame preservation

It has here become apparent that the safeguarding of videogames is a complex field of activity that holds a variety of preservational initiatives and motivations. Similarly, there are many available approaches to preserving videogames. These approaches differ in character and in terms of what results they

---

[17] 'C64 SIDs' here refer to C64-music files. SID (Sound Interface Device) is also the sound generator chip of a line of Commodore computers, including the C64.

seek to attain: some of them are coupled with the intent to keep the game playable; others for instance aim to facilitate the creation and dissemination of videogame collections. The breadth of videogame approaches present in the literature can also be explained partly by the varying goals and resources of the many actors in the field (collectors, archives, libraries, museums, foundations, communities), partly by the distributed nature of videogames. As previously mentioned, depending on one's perspective the phenomenon of videogames can be seen to consist of among other things software and hardware, promotional materials and gameplay guides, and videogame play. The preservational approach chosen to be utilized or further developed in an archiving or research project varies according to which of these videogame aspects are at the center of interest. In the following, the most commonly occurring approaches in the videogame-preservation literature are discussed. These are grouped in the following themes: collection-building and description, migration and emulation, collaboration and conceptual work. Lastly, the approaches and perspectives regarding the preservation of the sociocultural aspects of videogames—one of the major points of focus for this study—will come into view, as found in the literature.

Two initial delimitations: because videogames are (in part) software objects, they share to some extent the same preservational challenges as other programs, databases, images, and digital objects. These preservational challenges include but are not limited to the limited service life of storage media, data degradation, and dependencies on configurations of software and hardware, for instance specific file formats and media formats (Thibodeau, 2002; Waters and Garret, 1996). Below, for the purposes of focus and to maintain a workable corpus of literature, only such studies will be included that directly relate to the preservation of videogames. Software preservation as a field of work and research is hence outside the scope of this study despite its importance for the preservation of videogames. The second delimitation concerns Newman's (2012a, p. 36) analysis of how the videogame industry and consumer behavior produce videogame obsolescence, thus positioning videogames in "commercial and cultural contexts which are designed to ensure that history and heritage fades from visibility and memory." Newman's arguments point to the fact that a significant part of the difficulties of preserving videogames are social and connected to the practices of the videogame marketplace rather than being tied to technical or legal issues and limitations. These considerations have merit and deserve further scholarly attention, but fall outside the scope of the present study.

3.3.1. Collection-building and metadata-creation

Arguably the most common way of preserving videogames is to form collections. These collections commonly consist of materials such as software, hardware, and game-related materials (videogame-related social media, videos,

videogame-development materials). Videogame collections are created and maintained in many contexts, from that of the individual collector to ALM institutions. The results and characteristics of a range of collecting efforts were showcased in previous sections.

An often-used approach associated with the creation and maintenance of videogame collections is to gather original software and hardware. The approach presents evident advantages: the software and hardware environments needed for videogame access are made available and the games can be experienced using the same hardware and thus the fidelity of audio, visuals, and control as when it first was released (McDonough, et al., 2010, pp. 67–78, although the benefits of aiming to provide an 'original experience' have been questioned by Hedstrom, et al., 2006 and Swalwell, 2014). Several studies have pointed out the limitations this method, however. Firstly, the long-term preservational viability of relying on original software and hardware to maintain access to videogames has been called into question. Guttenbrunner, et al. (2010) and Barwick, et al. (2011) point out that while PC or Macintosh hardware are constructed from standardized parts, console-videogame hardware consists of custom-built apparatuses that are in production only for a limited period of time. This makes it difficult to keep console machinery operational for the timeframes that are required for preservational purposes. The same problem exists also in relation to PC and Macintosh computers but perhaps to a less acute degree, as the rapid pace of hardware evolution risks making certain older hardware components difficult to acquire. Other concerns regarding the usability of legacy hardware include maintaining interoperability with key peripherals, such as television sets for videogame consoles. McDonough, et al. (2010) report an illuminating example: in order to attain satisfactory play experiences on different versions of the Atari 2600 videogame console (manufactured around 1977–1980), the PVW team were required to use 1970s television sets; televisions from the 1980s and 1990s introduced various audiovisual problems.

Although not in criticism of the collection of original hardware and software in itself, it has also been noted that videogame collections need to be of a hybrid character in order to satisfactorily preserve "virtual world content and history," and to contain "a mix of 'library' (published digital games and virtual world content) and 'archives' (documentation about game/virtual worlds)" (McDonough, et al., 2010, p. 41; see also Lowood, 2004; Lowood, 2009; Lowood, 2011). Speaking from the museal sphere, Barwick, et al. (2011) express a similar sentiment and suggests that videogame collections become useful resources for visitors and researchers if they include sufficient documentation of context (oral histories, documentation of gameplay experiences) along with the videogames themselves.

Key aspects of collection-building enterprises are appraisal and selection, and the creation of metadata including the relationships of different types of content. Appraisal and selection are important for creating and maintaining

high-value collections while metadata-creation is required for providing efficient usability, access, and sufficient documentation about the collected materials and their relationship. For an in-depth discussion of appraisal and selection of videogame collections, see McDonough, et al. (2010, pp. 19–32). Issues relating to the management and creation of metadata surface in multiple studies. Winget (2011a) makes a general observation of the difficulties of ingesting player and community-produced collections into the established metadata structures of the ALM institutions. A more specific set of problems emerge in attempts to employ the Open Archival Information System (OAIS) in the preservation of videogames, specifically concerning the part of the OAIS model that is termed Archival Information Package (AIP) (McDonough, 2011; McDonough, 2012).[18] The AIP contains the object(s) that the OAIS model seeks to preserve, alongside metadata describing the structure and content of preserved material. McDonough (2012) put forward the difficulties of applying the OAIS model to videogames as relating to the need to create metadata and metadata structures with sufficient detail to describe the complexity—denoting the many dependencies of videogames and the versioning (videogames exist in many different versions both during development and after release) as well as the videogames' context—the documentation needed to make sure the preserved videogame content is interpretable, of the videogame to be archived. A synthesis of Functional Requirements for Bibliographic Records (FRBR) and the OAIS model is suggested as a workable approach to solving these issues (McDonough, et al., 2010; McDonough, 2011; McDonough, 2012).

3.3.2. Migration and emulation

In their investigation of the available means for and issues facing digital preservation, Waters and Garret (1996) put forward migration and emulation as the two principal pathways of maintaining access to digital objects. This observation is echoed in the corpus of previous research efforts on videogame preservation, where, collection-building aside, migration and emulation are the most commonly discussed preservational approaches (as Anderson, et al., 2010 also observe).[19] Between emulation and migration, emulation is the approach that currently sees the most use (Newman, 2012a). Fundamentally, emulation and migration share the same goal: to safeguard access to a digital object in the face of the consequences that rapid changes in hardware and software environments bring about—obsolete file formats, unsupported operating

---

[18] OAIS is an influential model used to conceptualize the functioning and required parts of an archive capable of long-term preservation of digital information and artifacts.
[19] Virtualization is a related method that has received some limited mention in the literature, but that will not be discussed further here (see e.g., McDonough, et al., 2010, pp. 64–67; Winget 2011b, pp. 5f).

systems, and new CPU architectures and I/O ports. At a more detailed level, however, the techniques differ markedly.

The term migration is used in the videogame-preservation literature to stand for preservational approaches that adapt videogame software written for legacy computer systems to operate on a newer configuration of software and hardware components (van der Hoeven and van Wijngaarden, 2005). Guttenbrunner, et al. (2010) and McDonough, et al. (2010) present different varieties of migration, stretching from migration of source code (which requires access to videogame source code and assets along with the appropriate software tools) to reprogramming (cf. Kraus and Donahue, 2012). Migration has been a favored approach in the archival sphere (e.g., Bearman, 1999) although, as noted by Winget (2011b), its applicability may be limited to the preservation of interactive digital artifacts such as video-games or digital art. Pinchbeck, et al. (2009) and Newman (2012a) hint at the reasons why this might be the case: migration as a method of digital preservation is more suitable to electronic documents than to complex, interactable and audiovisual programs like videogames. Based on similar arguments, the migration-approach has been seen to be "particularly unsuited" (Winget, 2011b, p. 5) and "of extremely limited value" (Pinchbeck, et al., 2009, p. 3) in the specific context of videogame preservation. The particular reasons put forward are the inefficiency of the approach, since migration of videogames must proceed object by object, the high complexity and resource requirements of the task, and the risks it carries for accelerating the data degradation of the videogame being migrated (Guttenbrunner, et al., 2010; Pinchbeck, et al., 2009; Winget, 2011b).

An emulator is a program designed to simulate a specific configuration of hardware, firmware, and support software like a videogame console or a legacy PC system (McDonough, et al., 2010). By doing so, the emulator in theory becomes capable of executing the whole line of games written for the emulated system.[20] In contrast to migration, the emulation process leaves the videogame software untouched (excluding eventual changes of storage mediums). Instead, changes are instead made to the computational processes and structures that allow the game to be run. Although not without exceptions (Bearman, 1999), emulation is often put forward as a promising method of preserving videogame software (Anderson, et al., 2010; Barwick, et al., 2011; Guttenbrunner, et al., 2010; McDonough, et al., 2010; Pinchbeck, et al., 2009; Winget, 2011b). Examples of emulators include the previously mentioned MAME (2017) and the ScummVM (2017), both free and open-source programs.

Emulators are in wide use in many videogame environments. The videogame console industry is one example, where all of the three major manufac-

---

[20] Emulators can simulate different levels of computational operations, from software to hardware (Rothenberg, 1999), but will be discussed holistically here.

turers—Sony, Microsoft, and Nintendo—employ emulation techniques to allow games originally released for a previous-generation consoles to be played using newer systems (Guttenbrunner, et al., 2010; Pinchbeck, et al., 2009). Another instance where videogame emulation comes into play is the popular use of community-produced emulators of console, PC, and Apple hardware used to play the large selection of software copies of games (often called 'ROM' in the singular; read-only memory) available online. This particular mode of use brings forth one of the main drawbacks of the emulation approach to the preservation of videogames: the question of legality. To function, most—but not all, see MAME (2017)—console emulators use a hacked BIOS[21] from the target console and hence violate copyright law (Pinchbeck, et al., 2009). Similarly, the videogame industry views the use of ROMs and the related modes of production and use as software piracy with a detrimental impact on revenue (Gooding and Terras, 2008; Newman, 2012b). For ALM institutions to use emulation as a preservational measure, agreements would have to be made with the console manufacturers and copyright holders of the games to be preserved. Concerns regard emulators' difficulty of use (Pinchbeck, et al., 2009; Winget, 2011b), their limited capacity to provide "experiential authenticity"—e.g., the same game speeds, tactile and audiovisual qualities as the original—(Newman 2012b, p. 4; see also Newman, 2012c; McDonough, et al., 2010, pp. 67–78; Newman, 2012a, pp. 137–149), and the obsolescence of the emulators themselves. The latter concern is addressed in the KEEP project, mentioned above, which seeks to create a framework that will facilitate the preservation of emulator software (Pinchbeck, et al., 2009). In the case of using community-created emulators like MAME and ScummVM to emulate games for preservational purposes, Newman (2012a) considers the dependency on the communities of developers that produce and update the emulators to be a drawback from the viewpoint of sustainability.

The strategies of migration and emulation have different sets of advantages and drawbacks, and they interact with the videogame software in different ways. As Winget (2011b, p. 6) writes, migration "provides access to content rather than to layout or structure," while emulation "focuses on surface reproduction, but changes the artifact's underlying computing environment." These different characteristics and their impact on information loss, authenticity, and significant properties in and of the preserved objects have been the focus of polarizing archival debate (see Bearman, 1999; Rothenberg, 1999). A similar pattern of debate can be observed in the videogame-preservation literature, but there are also attempts to argue for a complementary view of the emulation

---

[21] BIOS is short for Basic Input/Output System. Generally speaking, the BIOS is low-level type of software that regulates the initialization processes for hardware and software (e.g., operating systems) on a computer or console.

and migration techniques (McDonough, et al., 2010). Here, and most concretely, members of KEEP describe the project's principal aim as developing a support software for the migration of emulators.

3.3.3. Collaboration and conceptual work

The videogame-preservation literature also discusses the approaches of collaboration and conceptual work. While the former accentuates the benefits for archives, libraries, and museums invested in the preservation of videogames to collaborate with other entities (other ALM institutions, videogame communities), the latter designates work relating to a series of conceptual issues to be of importance in order to move the venture of safeguarding videogames forward.

3.3.3.1. Archives, libraries, and museums

In the literature, the fundamental reason for considering collaboration between institutions and communities to be a viable approach is often found in an economistic analysis of the field of videogame preservation. The significant amount of financial and knowledge resources needed to preserve videogames in combination with the amount of work left to be done before satisfactory methods of preservation have been established, necessitates that the effort be shared by several actors. "No single institution can do the work of comprehensively collecting and preserving digital games and their history," write McDonough, et al. (2010, p. 22), who suggest that videogame preservation should be jointly carried out by ALM institutions as well as videogame developers and player communities of different varieties—an analysis which is widely shared (Anderson, et al., 2010; Monnens, et al., 2009; Newman, 2012b; Newman and Simons, 2009; Stuckey, et al., 2013a; Takhteyev, 2013; Winget and Sampson, 2011). Concerning the ALM-sphere, McDonough, et al. (2010) propose that collaboration can take place on the levels of collection-building and macro-level projects. With the purpose of coordinating collection-building efforts and strengthening the complementarity of videogame collections, McDonough, et al. (2010) argue that creation and curation of such collections should be policy-led, so as to provide a clear focus of the preservational initiative internally, and to externally communicate the rationale underlying the collection. Specialized collection-building is also suggested by Lowood (2004). Collaboration between ALM institutions and other actors on the larger, for instance national, scale is seen to be important, because there lies the capacity to initiate the development of frameworks and standards for wider use (McDonough, et al., 2010).

3.3.3.2. Videogame developers

The videogame industry is furthermore seen to be a key partner of collaboration in the effort to preserve videogames (Gooding and Terras, 2008;

McDonough, et al., 2010; Winget and Murray, 2008a; Winget and Sampson, 2011; for an example, see the Museum of Modern Art's preservation of MMORPG EVE Online, MacDonough, et al., 2016). The industry and its development studios and publishers occupy a unique position in the field of relevant actors. One reason is that the industry are the owners of the copyrights that significantly restrict the range of available archival activities toward videogames, including the ways in which videogame collections can be made accessible—emulation for instance often requires such permissions (Newman, 2012b). To negotiate terms and gain the necessary legal permissions from the videogame industry is hence an important, but difficult, challenge for any videogame-preservation project. Legal authority aside, videogame developers and publishers also have technical capabilities and know-how that might be required to safeguard certain aspects of especially online videogames, which are of great complexity and depend on a proprietary infrastructure to function (MacDonough, et al., 2016; McDonough and Olendorf, 2011). Being the genesis of videogames, the videogame industry produces a range of materials that are considered valuable for preservational initiatives to gather. These materials include source code (required for videogame migration, for instance), earlier versions of the videogame of interest, promotional materials, support tickets, technical documentation, artwork and storyboards, and more (McDonough, et al., 2010, pp. 23f provides a list of high-relevance materials). Together, the documents and art and software artifacts generated by a development studio during the production of a videogame are relevant for preservational purposes because they tell of the processes and decisions by which the production, release, and post-release management of videogames and videogame communities were carried out. Materials relating to the development of videogames are not solely seen as something that can provide documentation of context in videogame collections. Winget and Murray (2008a) argue that a better understanding of videogame development and its contexts can also inform the theory and practice of videogame preservation in general.

Recognizing the value of the materials that development studios can contribute, there are several studies that attempt to attain a better understanding of the materials themselves and their role in the development-studio workplace. Kraus and Donahue (2012) and Bachell and Barr (2014) explore the attitudes towards and practices of videogame preservation in American and British development studios respectively, focusing also on game-related materials like those mentioned above. The studies yield overall similar results: the preservational activities carried out in videogame development studios vary from studio to studio and are not seldom carried out in a situation-by-situation manner without reference to plans or guidelines. Source code and the assets of released videogames were the most common types of materials kept. The attitudes towards videogame preservation as elucidated in the papers vary somewhat. Kraus and Donahue (2012, p. 6) observed "a lack of industry interest in preservation," while Bachell and Barr (2014, p. 155) noted an interest

in "preservation as a business strategy," i.e., for the purposes of future commercial opportunities and as an educational resource for new developers. The value of collecting game-related production materials with a provenance in the videogame industry for preservational purposes has not been accepted without question. In a study of documentation pertaining to the processes of videogame development, Winget and Sampson (2011, p. 29) argue that such documents traditionally sought after by collecting institutions (e-mail correspondence, game design documents, business documents) do not "adequately, or even, at times, truthfully represent the project or the game creation process as a whole." The reason for this is that many of the aforementioned documents, game-design documents, for instance, are created and employed early in the development work, but not in its later stages. Different versions of the videogame in focus and its assets are recommended as complementary documentation of the game-development process (Winget and Sampson, 2011).

In terms of letting materials originating from the processes of development benefit initiatives of videogame preservation, both Winget and Sampson (2011), Bachell and Barr (2014), and Kraus and Donahue (2012) indicate that interventions are required to gather them and keep them safe. The primary reasons put forward are the lack of interest in and knowledge of record-keeping and the volatility of the videogame industry, where newly started business often have a short lifespan. Here, too, collaboration between institutions invested in the preservation of videogames and the videogame industry is essential for such exchanges to take place.

3.3.3.3. Community-driven preservation

Communities of players and hardware enthusiasts carry out preservational activities directed towards videogame software, hardware, and game-related materials in large parts of the archival spectrum—from collection and curation to providing access (Kraus and Donahue, 2012; McDonough, et al., 2010). Community-driven preservational efforts are considered to have been pioneering in the sense that they have been ongoing for several decades, whereas institutional investment is more recent, and they constitute a significant part of the totality of preservational initiatives in the videogame domain (Barwick, et al., 2011). These efforts have resulted in a range of high-quality resources and the emergence of well-proven knowledge about preservational best practice and service design in this context (Gooding and Terras, 2008; Stuckey, et al., 2013a; Takhteyev, 2013). Examples of preservational achievement of the present variety include hardware collections (Galloway, 2011; Takhteyev, 2013), collections of in-game materials and player and community-produced documentation supporting memory and experience recall (Winget, 2011a), and some of the "most complete" software archives and metadata databases currently available (Newman, 2012b, p. 13; see also Section 3.2 *Previous preservational initiatives*). There are several calls for collecting institutions to col-

laborate with community-driven preservational initiatives; the richness of experience and the collections of these initiatives is often cited as the main motivator. More detailed outlines of how archives, libraries, and museums can collaborate with preservational communities take a starting point in a reciprocal understanding of the exchange, where the professional expertise of the ALM institutions is seen to benefit both the collections and the communities that created them (Barwick, et al., 2011; Kraus and Donahue, 2012; Galloway, 2011). Player and community-produced document collections could be ingested into the traditional collection models of the ALM sphere, albeit not without adaptation of these models, and hence be made more accessible and manageable (Winget, 2011a). Along similar lines, Kraus and Donahue (2012) suggest that collecting institutions could provide authenticated digital storage options and suitable metadata solutions to community-driven preservational initiatives.

Several challenges line the path of prospective collaboration with community-driven preservational initiatives. Firstly, the sustainability of community-based preservational efforts is uncertain due to their dependence on voluntary work, and they may, as noted by Newman (2012a, p. 26), "be objects in need of archival attention" themselves. Also, and especially concerning software collections, some of these initiatives do not abide by copyright legislation and are at risk of being closed down (Gooding and Terras, 2008). Secondly, many of the practices and concepts employed by preservational communities differ from those in the ALM sphere. Once again taking ROMs as an example, the process of preparation includes extracting the videogame software from its original storage medium and discarding all game-related materials like the game manual and packaging including cover art in order to limit file sizes (Kraus and Donahue 2012, p. 10; Newman and Simons, 2009). Before being circulated, the ROMs might also be modified to serve a variety of purposes, for example to create a translation of the game in question (Newman, 2012b). The case of the Mystery House Taken Over-project, described by Kraus and Donahue (2012, p. 8) as oscillating between preservation and remix, serves as another illustrative instance of non-canonical preservational practice. Mystery House—an early work of interactive fiction placed in the public domain—was re-implemented in a newer programming language along with new features, including the tools for further modification (Mystery House Taken Over, 2017). Similar approaches of preservation and remix have been noted in the retro-computing communities, dedicated to the collection, maintenance, and use of legacy hardware and software computer systems, documentation and storage media (Galloway, 2011; Takhteyev, 2013). In these communities, the functionality of old hardware is often restored or complemented by the addition of newer components and recent software (Takhteyev, 2013).

While it is clear that the creation of ROMs, the re-coding of Mystery House, and the remix strategies of retro-computing are not solely motivated by preservational ambitions, these activities nonetheless have preservational effects.

48

Takhteyev (2013) outlines two: the safeguarding of accessibility via modification and the way that the remix activities tie historical artifacts to present-day practices and projects. Kraus and Donahue (2012) point out that while the notion of authenticity differs between the ALM sphere and community-driven preservational projects such as the ones above, they should be seen as complementary attempts to denote the fixity of key characteristics. The principal difference lies in, according to Kraus and Donahue (2012, p. 9), how "much variance [is tolerated] in the different manifestations and expressions of the work." Differing conceptions, implementations, and preferences (see Hedstrom, et al., 2006) relating to the notion of authenticity and other archival concepts are not put forward as a collaborative hindrance in videogame-preservation literature. Rather, several studies argue for the complementarity of preservational approaches and for the need of collecting institutions to embrace the varying modes of use and understandings of preservational objects as found in community-driven initiatives (Kraus and Donahue, 2012; Galloway, 2011; Newman, 2012b; Takhteyev, 2013).

3.3.4. Preservation of sociocultural aspects of videogames

Key components of preservational activity are the definition of boundaries—distinctions of what constitutes the phenomenon to be documented or safeguarded—and the setting of priorities—understandings of which aspects of the phenomenon in focus that are the most important to preserve (Minerva Working Group 6, 2003; concerning videogame preservation, see McDonough, et al., 2010, p. 14). In archival discourse, a phenomenon's aspects that have preservational priority are called its 'significant properties' (Hedstrom and Lee, 2002). The notion of significant properties occupies an important position in preservational efforts because of its intimate ties to the selection of preservational method and to core concepts like authenticity.

The videogame-preservation literature that describes approaches to the preservation of videogames' sociocultural aspects frequently discusses the boundaries and significant properties (although the technical term is not always used) of videogames (e.g., Gooding and Terras, 2008; Guttenbrunner, et al., 2010; Kraus and Donahue, 2012; Lowood, 2011; Newman, 2011; McDonough, et al., 2010; Stuckey, et al., 2013a; Winget, 2011a). Perhaps this pattern can be explained with dual reference to the relative youth of the field of videogame preservation (McDonough and Olendorf, 2011; Winget and Murray, 2008), and to the hegemony of the notion that a videogame is "primarily a technological object that demands technological solutions to the problems of preservation and access" (Winget and Sampson, 2011, p. 29; see also Newman, 2012a). It is plausible that the unavailability of established knowledge and preservational methods, in combination with the notion that videogame preservation is principally a matter of safeguarding software, may

have incited the thoroughness by which sociocultural approaches to video-game preservation are advanced, often via fundamental arguments anchored in analyses of the nature of games and gaming. Here, and beyond software and hardware, the phenomena of videogames are seen to be made up of culture and community (Winget, 2011a), different modes of play (Newman, 2011), user intent (Winget, 2011b), player experiences (Guttenbrunner, et al., 2010), memory (Stuckey, et al., 2013a), and meaning-making, social relationships, and social interactions (Lowood, 2009). Videogames are further understood to be situated in larger cultural and historical settings (Gooding and Terras, 2008).

Tied to the expositions of the characteristics of videogames as found in the literature are arguments supporting the need to employ socioculturally-oriented preservational approaches. Many of these arguments center on the ability of these approaches to provide documentation of context. Lowood (2004; 2009; 2011) argues that the interactions of players—with one another and with the videogame platform—are an intrinsic part of what a game is, and that documentation of the activities and experiences, and more, of videogame players is an essential addition to archives or collections. Without such documentation, it would be a "barren exercise" for users of videogame archives to attempt to understand the games therein (Lowood, 2009, p. 123). Referencing Avedon and Sutton-Smith (1971), Barwick, et al. (2011) take a similar position and stress that the technological facet of videogaming is one among many, including historical and cultural, and that museum exhibits and holdings need to reflect the breadth of the phenomenon lest they become a less useful resource. McDonough, et al. (2010) recognize player activities as a constitutive component of what a game is while also accentuating the benefits of collecting documentation of context in relation to videogame reception and the rapid technological development of videogame software and hardware from the early 1980s until the present day. Context documentation is here described as a key means for providing the opportunity to view play as an activity situated in the histories of videogame culture and hardware and software development (see also Stuckey, et al., 2013a). Documentation of context is also held to be a crucial part of videogame preservation as it is structured by the OAIS reference model, although difficulties of implementation exist relating to its representation (McDonough, 2011; McDonough, 2012). The representational challenges of socioculturally-focused videogame preservation are also discussed by Winget (2011a; 2011b). Winget (2011a) argues that videogame-play practices are not only carried out in the videogame world but also in a variety of other environments, for instance in social media. To collect the artifacts produced in these extra-game world sites is a means to document a fuller breadth of the activity of videogame play.

The literature introduces many approaches to preserving the sociocultural aspects of videogames. Stuckey, et al. (2013a) present the Popular Memory Archive Project, which among other things sought to create a service to collect

documentation about early 1980s videogames and their use by inviting community participation. In a paper exploring different approaches to preserving SL, McDonough and Olendorf (2011) suggest that the archivist can visit relevant in-world spaces and document objects, activities, and so on, via screenshots and textual descriptions. Winget (2011a) highlights the participatory characteristic of videogame communities, and the many types of collections of player and community-produced materials, such as wikis or fan-fiction that are created as a part of their activities. To incorporate such collections into institutionally run videogame archives is put forward as an advantageous approach to documenting the sociocultural aspects of videogames (Winget, 2011a). Other types of materials whose function as documentary media are specifically explored are player-produced walkthroughs (Newman, 2011) and various forms of screen captures (machinima, replay, POV recording) (Lowood, 2011). Newman (2012a, see also Newman, 2008, 2011) advances one of the most comprehensive and strongly worded viewpoints of socioculturally-focused videogame preservation. Newman (2012a, pp. 37f) considers videogame play to be "so absolutely central to understanding what a videogame 'is' it is inconceivable that we should embark upon preservation activity that does not place it front and centre." This view does not however equate videogame preservation with the collection of videogame objects and the safeguarding of their playability. Newman (2012a) argues that the difficulties facing the preservation of videogame objects are of such a magnitude that they render gameplay preservation a more sensible fundamental goal of videogame preservation. The preservation of videogames games "in and at play" can be accomplished to a significant extent, suggests Newman (2012a, p. 155), via the collection of player-created documentation of games and gameplay like walkthroughs and gameplay performances, which Newman (2011, p. 110) considers to be "the central unit of currency for a digital gaming curation or preservation project."

The preservational value of the materials discussed in relation to socioculturally-focused videogame preservation is described in largely similar terms as above. The materials and their associated activities of production occupy a central place in videogame culture, and they afford substantial documentation about both the game in focus and its role in the interactions and processes that make up videogame play (Lowood, 2011; Newman, 2011). Examples of other materials that are relevant for socioculturally-focused efforts are game-related websites wikis, blogs, databases, videogame soundtracks, game-based films, and YouTube videos (Lowood, 2009; McDonough, et al., 2010; Winget, 2011a; Winget, 2011b). It should be noted here that videogame preservation is a venture that requires the use of different methods. The preservation of sociocultural aspects of videogames is complementary to other methods like software archiving (Lowood, 2011; McDonough and Olendorf, 2011; McDonough, et al., 2010). For instance, Lowood (2004) and Barwick, et al.

(2011) advance the idea that videogame archives should be hybrid in character, consisting of materials with many different provenances and types, including "physical collections and digital collections, [...] oral histories and documentation on the experience of playing [...] games, as well as related artifacts" Barwick, et al. (2011, p. 387). Since videogame software exists in many versions that may vary greatly in terms of content and audiovisual qualities, it is important that the creation of such collections are handled so the relationship between documentation of context and the videogame platforms are considered and thoroughly described.

4. Online communities and online community productivity

The previous chapter explored the methods and perspectives of videogame preservation. Of equal importance for this study are inquiries that can contribute to the understanding of how videogames communities produce documentation in their social-media environments, and how community social life is enmeshed with such practices. This topic has been researched and touched upon by studies hailing from a diverse set of disciplines pursuing a variety of research aims. In order to competently grasp the current state of knowing regarding this topic it is hence necessary to cast a wide net. As a consequence, the discussion below will encompass studies that employ a variety of vocabularies and perspectives. Because the majority of these studies are based on examinations of various kinds of 'productive' enterprises in the videogame domain—most commonly the use, creation, arrangement, and maintenance of community-produced social media—this term has been used as a catch-all category for this research (see Section 1.5: *A note on terminology*). The text below is structured into two parts. The first part provides an introduction and discussion of the general characteristics of online communities and videogame communities as they have been accentuated in the literature and as they are conceived of in this study. The second, and larger, part of this chapter focuses on a range of studies that detail productive online videogaming in a variety of ways. This includes also the writings of Jenkins (2006; 2008; 2013) and research studies that draw on his work. Jenkins' research is an important inclusion because his work on productive activities in what Jenkins' terms 'fan' communities (television series, films, videogames, music; Jenkins, 2006; 2013) has contributed to the understanding of videogame-community production of documentation.

4.1. Online communities

As is the case with many of the objects of social or humanistic study, videogame communities can be said to belong to a larger class of similar social groups with which they share certain characteristics (cf. Boellstorff, et al., 2012, p. 177). This line of thought plays a prominent role in the research of

Jenkins (e.g., 2008; see below for a more detailed discussion), where video-game communities are understood to be a subset of the overarching phenomenon of online fandom. To let research-based insights into similar social groups inform the study of videogame communities is both methodologically sound and provides additional interpretative resources (see Shaw, 2010 and Malaby, 2007 for examples regarding videogame culture and videogames more broadly). However, arguments have been made that videogame communities should be studied on their own terms and that they are only to a lesser extent comparable to other types of online social groupings (Pearce, 2011). Here, an attempt will be made to present an account of what is presently known about videogame communities that incorporate both generalist and particularist insights. It should be noted that the notion of community in this study is not used naturalistically, but is rather theoretically defined; the topic of videogame communities is revisited in Section: 5.3.1: *Practices with documents in videogame-community social media* and in Section 6.4: *A trace-based approach to the study of online videogame communities*, where it is discussed in context with the study's theoretical framework and research procedures.

The social formations that emerge online can be, and have been, understood using a plethora of metaphors (Crawford, 2012; Hine, 2000; for examples, see Gee, 2005 and Gee and Hayes, 2012). A metaphor of common use in scholarly and journalistic writings, as well as in everyday parlance, is 'community'—the term of choice in the present study. Community is also arguably one of the most commonly employed terms used by actors in the videogame industry to refer to the people engaged, in different ways, in their games. The applicability of the term community has however been called into question both in the setting of online sociality and in social studies more generally. The observed problems are of different kinds. The concept of community has been pointed out to be hard to clearly define and to be of wide, and not always delimited, use. In a 1955 literature review of the concept's use Hillery (1955) identifies 94 different definitions, and notes that the use of the concept is broader still; numerous texts included in the review employed the concept without defining it—Komito (1998) and Porter (2004) note that a similar situation in the case of communities in online spaces. Nicolini (2013, pp. 88f) writes that the community concept is vitiated with "a romanticized image" that stresses communities as social constellations characterized by "solidarity, mutual understanding, shared interests, or common endeavor." Some of the criticisms that have been leveled regarding the envisioning of online groups as communities have, in part, been based in such views. The main reason to use the notion of community to conceptualize the collective dimensions of videogame engagement is its widespread use in scholarly contexts, among players, and in the videogame industry. As shown in the previous chapter, the venture of videogame preservation is in terms of both research and hands-on preservational work has

much to gain from collaboration with a wide range of actors (players, video-game developers, ALM institutions). The cognizant use of familiar terms may serve to facilitate such efforts.

Videogame communities belong to a class of not seldom topic-centered online social groups that exist by virtue of the coordinated and repeated en-actment of shared practices by its members. Other examples of communities in this class are the 'fan' communities in focus of the work of Jenkins (2006; 2008; 2013), Baym (2007; 2000), and Mittell (2009; 2013) among others, the communities of virtual worlds like Second Life (Boellstorff, 2008), and of course the communities of game-related social-media sites like videogame wikis (Barr, 2014) and walkthrough sites (Newman, 2011). These communi-ties are voluntary affiliations centered on topics (a videogame, a television series) (Baym, 2000; Jenkins, 2006). They potentially consist of members from all over the world, and they dedicate themselves to all manners of activ-ities: problem solving, knowledge management, play, discussions, commen-tary and gossip, creation of community infrastructure, procedures of self-gov-ernance, and more (Jenkins, 2006; Nardi, 2010; Taylor, 2006; Steinkuehler and Duncan, 2008; Warmelink, 2014). Member commitment is generally un-derstood to be intrinsically motivated, that is, people participate because they want to (Warmelink, 2014). The emergence and operations of this type of community are influenced by the dynamic that exists between 'grassroots' community members and the industry or industries that produce and market the media or objects the community is formed around (Jenkins, 2008; 2013). As noted by Jenkins (2008), Baym (2007), Newman (2004), and others, com-munities like those of videogames, music, and film play several important roles in the product cycles of media industries, for instance regarding market-ing and sales sustainability. Furthermore, online communities of the present variety cannot be identified by their physical boundaries or shared localities. A community can span multiple servers or sites, and servers and sites can host multiple communities (Boellstorff, et al., 2012). Rather, a community is dis-tinguished by its shared practices, specialized ways of expression, artifacts, memorabilia, and rituals (Baym, 2000; Crawford, 2012; Hine, 2000; Mäyrä, 2008; Pearce, 2011). Regarding community membership, several researchers (e.g., Baym, 2000; Jenkins, 2008; Rainie and Wellman, 2012) accentuate that membership is not exclusive; community members are often members of mul-tiple communities, and in many cases there is no 'home' community. As stated, membership is predicated on participation in community practices, and is of a temporary nature just like the community itself. The processes of community emergence and dissipation are tied to the accomplishment of community prac-tices—when the practices that substantiate and delimit a community ceases to be carried out, the community no longer exists in any meaningful manner (Nicolini, 2013; cf. Jenkins, 2006; 2008).

4.2. Online videogame communities

Before the discussion proceeds to research studies of community production more specifically, some space will be devoted to describing how the concept of community has previously been operationalized in the literature and how the use of the term in the present study relates to that of previous research. As already noted, several terms are in use besides community in studies setting out to investigate the sociocultural dimensions of videogames. In an overview of this particular topic, Crawford (2012, pp. 97–199) identifies eight such terms in use: subcultures (Mäyrä, 2008); neo-tribes (Crawford and Rutter, 2006); fans (Jenkins, 2006); knowledge community (Jenkins, 2008); players, Otaku, and gamers (Newman, 2008); scenes (Gosling and Crawford, 2010); and habitus (Crawford and Rutter, 2006). Given that each of the notions are linked to different theoretical frameworks and ultimately research interests, only inquiries using the vocabulary of 'fan' and 'knowledge community' will appear in the present chapter alongside other research relevant for the purposes of this study. It is important to note, however, that previous research on videogame communities, just like that on videogames and videogame play (see Chapter 2: *Videogames*), has been conducted using a wealth of approaches and theoretical perspectives that accentuate various aspects and interpretations. The studies that are mentioned in this chapter are the ones that help frame the results of the present work.

In a study of how videogame communities self-organize, Warmelink (2014, pp. 58f) presents a categorization of how the concept of community has been operationalized in previous videogame research. Warmelink identifies three principal applications of the community concept, spread across a macro–meso–micro spectrum.[22] The macro approach to conceptualizing videogame communities entails understanding them as large social formations that potentially span multiple games, web platforms, and an array of activities from actual gameplay to play-related activities. The research of Pearce (2011, p. 5) exemplifies this approach by following a "community of play" as they migrate across different online videogames and web services. Smaller social units, like the guild, represent the common conceptualization of videogame communities at the meso level. Warmelink points out that the analyses in this particular group of studies often accentuate that guilds are institutionalized communities with a somewhat enduring capacity to accomplish both internal (e.g., self-organization) and external (e.g., in-game accomplishments) goals in the longer term. A study by Williams, et al. (2006) of guilds and guild members in

---

[22] The conceptualization of communities at work in the present study are intimately tied to the social ontology advanced by practice theory (see Chapter 5: *Theory*). From a practice-theoretical viewpoint the differences between a macro–meso–micro segmentation are simply those of scale (Schatzki, 2011). An instantiation of a social phenomenon like a community on the micro scale is thus compositionally similar as an instantiation of community on the other levels.

MMORPG World of Warcraft (WoW) showcases the meso-level conceptualization of videogame communities by centering on different kinds of guild organizations and the roles and relationships within guilds. According to Warmelink, researchers adopting a micro-perspective in the study videogame communities focus on smaller videogame groups. These groups are seen to be goal-oriented and able to perform similarly to how guilds are portrayed in the meso-level perspective, yet are considered to have a more temporary constitution. An instance of the micro-level approach is Chen's (2008) ethnography of a WoW raid group consisting of players from different guilds, gathered with the intent to accomplish a specific set of in-game goals.

Warmelink's (2014) overview can frame the concept of community as it is employed in the present study. A videogame community is here understood to encompass both the macro and meso levels in Warmelink's model. A videogame community (on the macro scale) is seen to be centered on one specific videogame, and to be made up of a cluster of meso-level communities spread out over platforms of different varieties: the videogame itself, wikis, discussion forums, et cetera. These meso-level communities may be dedicated to different (and often multiple) tasks and ventures relating to the game in question, like player-versus-player gameplay, creation and management of social-media sites, knowledge production, fan art or fan fiction. This use of the community-concept brings with it a number of advantages. As noted by Hamilton, et al. (2014) in a study of live-streaming on Twitch, the boundaries between communities of videogames and the communities of a particular Twitch channel, a videogame wiki or discussion forum, tend to blur. It is often an impossible (and perhaps unproductive) exercise to delineate the more exact relationships between communities in the videogame domain. A view where people engaged in activities relating to the same videogame are seen to belong to the same macro-level community dissipates concerns regarding the community affiliations of actors by embracing that players are, as pointed out by Baym (2000), Jenkins (2008), and Rainie and Wellman (2012), members of several communities and often act in such a heterogeneous capacity. For instance, Paper III shows how a community engaged in knowledge production on a videogame wiki, in order to be able to accomplish their tasks, also participate in the player-versus-environment gameplay of the videogame in focus of their efforts. Furthermore, this operationalization of the community concept resonates with how play, in this work, is seen to incorporate also other activities related to actual videogame play—such as the productive enterprises discussed below (see Crawford, 2012; Mäyrä, 2008; Newman, 2004; Pearce, 2011; Taylor, 2006).

4.2.1. Online videogame communities and social media

A key aspect of online videogame communities is their "close, almost symbiotic" relationship with social media and other services on the web (Barr, 2014,

p. 120; Adams, 2009; Albrechtslund, 2010; Golub, 2010; Karlova and Lee, 2012). Newman (2004, p. 156; see also Paper I), among many others, notes that the "[t]he use of the web by [videogame] fans is, itself, complex." Social media fulfill a variety of functions and roles in videogame play, and support a range of activities.[23] Social media comprise a primary mode of internal and external communication—like protests and attempts to influence the videogame industry (Newman, 2004; Paper II)—in both macro (Pearce, 2011) and meso-level videogame communities (Warmelink, 2014). Videogame players use social media to inform themselves of what games are available and what games are of interest to them and to conduct videogame purchases (Lee, et al., 2015b). Harrison (2009) notes that players employ social media like blogs or wikis to document their experiences playing the game, making them a valuable resource in videogame research. The same observation is made by multiple scholars, including Boellstorff, et al. (2012) and Golub (2010).

Videogame-related social media also support a range of productive activities that will be discussed in detail below, for example knowledge production, the creation and management of spin-off media (Lowood, 2011), wikis and other services (Newman, 2008; Newman, 2011; Paper III). Boellstorff's study (2008, p. 198) of culture in Second Life indicates how integral social media are to videogame play; his informants regarded participation "entirely inside Second Life" to also include "participation in a range of websites external to the Second Life program". In a later publication Boellstorff and his co-authors Nardi, Pearce, and Taylor acknowledge that such activities, carried out in spaces not contained within the videogame platform, are nevertheless a part of videogame play (Boellstorff, et al., 2012). Works by Nardi (2010) (Everquest) and Warmelink (2014) (EVE Online) serve to provide ethnographically derived examples of how the link between gameplay and social-media participation can take shape in the context of MMORPGs. Warmelink (2014) reports on the process of joining a corporation (i.e., guild) in EVE Online, and singles out three technologies of the highest importance for the guild's operations that new members are required to appropriate: Internet Relay Chat (IRC) as a key channel of communication, and the corporation's discussion forum and Google-drive spreadsheets as spaces for storing, managing, and producing documentation. In Warmelink's analysis, these services also function as tools for organization and management. Nardi (2010) paints a similar picture where she and her fellow guild members, in preparation for completing a complex task together, consult community-produced wikis and forums (see Steinkuehler and Duncan, 2008 for additional examples). Albrechtslund (2010) stresses that the many instances of online storytelling that take place in videogame-related social media play important roles in players'

---

[23] See Section 2.3: *Videogames and videogame play defined* for a discussion of the definition of play that underpins this work.

meaning-making processes and in the building and upholding of videogame-community identity.

The writings of Pearce (2011) on Uru: Ages Beyond Myst and Taylor (2006) on WoW provide additional insights into how social media are entangled with videogames and videogame communities. In these analyses, social media are noted to be of functional application for videogame players, but are also seen to be constitutive of play itself. Taylor (2006, pp. 155f) considers engagement in "material productions [such as] the creation of game guides, walk-throughs, answers to frequently asked questions (FAQs), maps, object and monster databases, third-party message boards and mailing lists [...]" to be part in the process by which players of MMORPGs co-create the online videogames in which they participate. Pearce's (2011, pp. 33f) work provides an exhaustive investigation of how the formation, sustenance, and emergent behavior of videogame communities stand in complex relation to the "play spaces" offered by the videogame they stand in relation to. These play spaces extend beyond the videogame itself and also include social media and other Internet services that play a part in videogame play. In aggregate, the services and platforms (potentially including several videogames) on and by which different facets of videogame play are carried out are called the "ludisphere" (Pearce, 2011, p. 34). "[J]ust as contemporary world cultures must be looked at in a global context," Pearce writes (2011, p. 137), "online virtual worlds must be looked at in the context of the 'ludisphere' [...]." In Pearce's analysis, social media used in videogame play emerge as spaces of play themselves.

4.3. Participatory cultures and collective intelligence

The work of Jenkins represents arguably one of the most comprehensive attempts at framing the productivity of topic-centered communities. Examples of productive activities carried out by videogame communities relate to the production and maintenance of videogame-related social media (wikis, blogs, discussion forums, YouTube and Twitch channels), game modifications and hacks, the writing of game guides, walkthroughs, FAQs, fan fiction, and the composition of fan art and music (Crawford, 2012; Hunter, 2011; Newman, 2004). Between the early 1990s and the mid-2000s, Jenkins published a series of monographs (2006; 2008; 2013, are of principal interest here) exploring the productive activities of 'fan communities' in a series of domains including television series, videogames, and films, and the impact of networked computing on such endeavors. Wirman (2007) cautions against equating videogame productivity with productivity in other fandom domains, and argues that a more precise vocabulary of game productivity needs to be developed. With reference to the purposes of this literature overview, it is satisfactory to discuss videogames as a part of the greater arena of fandom. Wirman's (2007) claim will be returned to in Chapter 8: Discussion. Now the attention turns toward

Jenkins' research and the concepts of participatory cultures and collective intelligence as they have been fleshed out therein. Jenkins' notion of convergence culture (Jenkins, 2008) will only be briefly touched upon as it is of peripheral importance to this study.

A good starting point for discussing productive videogaming is the framework Jenkins employs in the analysis of fan communities. The core argument that Jenkins makes is that present-day media culture no longer allows a separation between consumers and producers of media. Instead, current media culture is a "participatory culture" (Jenkins, 2008, p. 3) where fans and television production companies, videogame developers, and other media producers in the traditional sense are participants that interact in new, and not yet fully understood ways. Jenkins (2006, p. 1) describes fans of media texts (Jenkins' term, includes videogames as well as television series) not as passive but, rather, "active, critically engaged, and creative". Participatory culture comprises a combination of three trends: networked computing that facilitated communication, new types of productive activities, and new ways of distribution and storage; a DIY subculture that influenced how networked computing were put to use; and finally, economic incentives for the popular-culture industries to encourage active consumer participation and the circulation of content across different media channels (Jenkins, 2006, pp. 135f)—what Jenkins (2008) calls media convergence.

In his analysis of fan communities, Jenkins incorporates the work of Lévy (1997) on collaborative knowledge production in networked environments. One of Lévy's (1997) central tenets is that the significant potential of communities as knowledge producers rests on their ability to connect people of expertise, and to allow them collectively process and retain more information than any single community member would be able to do. A community invested in knowledge production can thus hold information that is not known by (but is available to) all of its members. Networked computing increased the capabilities of knowledge communities by facilitating low-latency communication regardless of geographical distance—thus allowing more people to interact—and efficient storage and dissemination of information. Jenkins (2006, p. 137) depicts fan communities as the potentially "most fully realized versions" of Lévy's vision of group-based, collective intelligences. Jenkins (2006, p. 137) writes:

> Online fan communities [are] self-organizing groups focus around the collective production, debate, and circulation of meanings, interpretations, and fantasies in response to various artifacts of contemporary popular culture.

Jenkins (2008, p. 57) furthermore characterizes fan communities as "tactical" and "temporary." Their formation is tied to the needs and interests of their members; when these are fulfilled and sated, the community disbands. Put in another way, it is not the possession of knowledge or control over extensive

community-produced web resources that holds fan communities together. The social glue of fan communities consists of the process of knowledge acquisition, which simultaneously is a driver of community participation and the vehicle by which the social ties of the community are established, tested, and reaffirmed (Jenkins, 2008). Jenkins (2006; 2008, p. 4) also considers the communal modes of knowledge production present in the activities of fan communities to benefit pluralism and "alternative source of media power". Because community-driven production of knowledge is broadly collaborative (although exceptions do exist, see Jenkins, 2008) and benefit from its members voicing different perspectives and concerns and having different areas of expertise, suppressive hierarchies of meaning and the power relations emanating from expert knowledge are counteracted (Jenkins, 2006, p. 140; see Crawford, 2012 for critical examinations of this viewpoint). Jenkins (2008, p. 4) predicts that, while collective knowledge production is currently most prevalent in recreational settings, it will see applications also in other aspects of culture and society. Although Jenkins in subsequent writings (e.g., 2008) adopted a less optimistic view of the pluralizing impact of networked computing and collective knowledge production, he maintains that fan communities are one of the major forces that influence how popular culture operates.

The logic of participatory culture and communal knowledge production has also impacted the popular media industries. From the industry point of view, Jenkins (2006) mentions that fan production risks lessening company control over intellectual property. In his later work, Jenkins (2008) clearly states that the popular-media industry was an important driver in the emergence of participatory culture due to perceived economic benefits. Such incentives were pursued by opening up design space for content that encouraged fan productivity in attempts to drive sales with the help of the marketing advantages that come with an active user community. Reasons also mentioned are the prospects of monetizing the results of fan productivity, using fans as unpaid quality assurance via beta testing, and as a recruitment base for the industry (Jenkins, 2006). On the whole, the relationship between fan communities and the popular media industries is complex. In some situations, there are mutual interests and perspectives, but in others not (Jenkins, 2006). The relationship between the two parties is furthermore asymmetrical. Newman (2004) and Jenkins (2006) both underline that the media industry is the more influential actor, but there are nevertheless instances where the fan communities have been able to exert significant pressure (see Albrechtslund, 2011 for an example from the videogame domain).

4.4. Productive videogame communities

As Crawford (2012) notes, the productive activities of videogame communities in social-media environments have received little scholarly interest. There

are however studies that have examined the videogame-community productive activities from a variety of viewpoints, and these studies are in focus below. What is of interest here is not primarily to take inventory of the kinds of documentation that is produced by videogame communities in their social-media environments as observed in previous studies, but to shed light on how production of documentation and on what roles such productive activities play in the community social life.

4.4.1. Media feedback and appropriation

The majority of studies of videogame-community productivity reviewed here relate to knowledge production. A few exceptions are notable, however. Returning again to Pearce (2011), there are aspects of the study with relevance for videogame-community production. On a more general level, Pearce suggests that the reason why services of networked computing—social media especially—have attained such an important role in the videogame domain is their capacity to process large amounts of feedback. Social media allow many people to provide inputs (upload a video; contribute to a wiki) and have the capacity to quickly transform them to ubiquitous outputs (widespread access to a video or wiki-text). This interactional bandwidth, Pearce (2011, p. 45) writes, creates loops of increasing levels of participation, thus making social media "a powerful engine for large-scale social emergence."

Pearce's research is an ethnography of a community of players originally situated in Uru: Ages Beyond Myst who, after the demise of Uru, initiate a migration that will take them across several virtual worlds and other online spaces. Pearce (2011) identifies three forms of productive play during her study of the Uru community, all centered on how the community strove to appropriate their (often changing) videogame environments. The first entails creating new modes of play, rituals, and play-related practices. The second involves the activities, in a new environment, to create artifacts of cultural significance that bear connections to previously inhabited spaces. Productive play of the third variety entails creating new environments entirely, either within an existing videogame or by using tools of videogame production. The Uru community's attempts to appropriate videogames by changing patterns of play or the in-game environments to better suit their preferences and needs bear several similarities to Jenkins' (2006) study of fan writing in the context of the television series Star Trek. In Jenkins' analysis, fan writing becomes a way for fans to adapt and integrate mass-media culture into their own lived experiences, thus creating opportunities to explore concerns, interests, or needs within the show's otherwise hegemonic structures of meaning and narrative. This exercise is keyworded as "poaching," a concept drawn from de Certeau (1984; Jenkins, 2006, p. 40). No matter what the driving force is (to voice minority concerns; to adjust characters of events to fit one's liking), Jenkins (2006) proposes that membership in fan communities hinges on this move

from consumption to production. However, the poaching of texts is not unregulated; Jenkins (2006; 2008) notes that fan communities are always in the process of negotiating boundaries of and principles for their productive efforts, including epistemological issues. The existence of continuous debates about the organization of work should not, Jenkins (2008) writes, be equated with the fact that fan communities produce knowledge in disciplined and homogeneous ways. Knowledge production in fan community-contexts are characterized by a great variety of approaches to all aspects of the process—from the gathering of sources to analysis and dissemination. The procedural diversity of fan-community knowledge production can be seen as both an asset because it encourages the articulation of manifold viewpoints and facilitates participation by new members, and a detriment—it makes coordinated effort harder to accomplish).

4.4.2. Knowledge production

A range of previous studies set out to investigate the productive activities taking place on wikis in the domains of videogames and television series. Although the majority of the studies reference Jenkins and to varying extents employ his interpretative viewpoints, they hold separate research foci. Taken together, these studies give a comprehensive account of knowledge production in the area of online fandom.

Wikis are well-established phenomena in online fandom. Mittell (2013) states that online fandom constitutes one of the wiki platform's most common areas of use and a platform of importance in participatory culture. Writing in a videogame context, Barr (2014, p. 121) describes wikis as "the de facto online reference medium for game players." Mittell (2013, no pag.) summarizes the types of documentation and modes of interaction usually found on videogame wikis in the following way:

> If many [non-videogame] wikis focused on fictional culture retell their object's stories, videogame wikis take this impulse further by offering collectively-authored walkthroughs, strategies, and guides to popular games. Such game-based wikis go beyond the documentary impulse, as the wikis become sites for conversation and collaborative strategizing for players, creating dual levels of participatory culture within both the game and the wiki. Game wikis for online games like Word of Warcraft or Everquest are particularly active as they mirror their online storyworlds with comprehensive analysis and discussion of how the games work. Many wikis, regardless of topic, extend the ludic spirit of games to the creation of the wikis themselves, as wiki systems and communities can offer "achievements" and rewards for active editors who contribute to the wiki. Such wikis map the gaming impulse of one aspect of participatory culture onto the collaborative documentation of wikis, suggesting important overlaps between cultural phenomena.

Mittell (2013) furthermore conducts a comparison between fandom wikis and Wikipedia. Two principal differences are observed. Fandom wikis do accept original research for the most part, that is, new insights or facts that has been attained via investigation but have not been published (cf. Wikipedia's, 2017, No-original-research policy). Also, Mittell (2013, no pag.) observes that Wikipedia generally contains more detailed documentation of "non-fiction" than fan wikis of a corresponding theme do. The situation is reversed concerning wikis centered on films, videogames, and television series, which contains both more forms of participation and production than Wikipedia, a higher level of detail and a greater breadth of topics.

Toton (2008) and Mittell (2009) investigate the production and maintenance of wikis dedicated to the television series Battlestar Galactica and Lost (Lostpedia) respectively, attempting to elucidate the connection between the wiki community's policy-making processes and the shaping of documentation on the sites. Toton's and Mittell's studies both point to the fact that a key process in community wiki-writing is the establishment of hierarchies of potential content. These processes attribute different degrees of priority to different content types. However, the effects of such exercises in selection net differing results in terms of their impact on content present on the site. On the Battlestar-Galactica wiki (Toton, 2008, no pag.), content is considered either suitable for presentation in the wiki's article space or not; issues considered to be "speculative" are given no space. Lostpedia, on the other hand, hold content of three degrees of priority (Mittell, 2009) ranging from canon to non-canon. Toton's and Mittell's analyses follow patterns similar to Jenkins' (2006) understanding of textual poaching and fan writing. In constructing the wiki, the wiki community engages in a process of appropriation where they choose to reflect such aspects of the videogame that correspond to their preferences and agendas. What is notable is that while Jenkins presents fan writing as a way for fans—within certain boundaries—to enmesh the dominant structures of popular culture with personal, perhaps minority, voices and concerns, the examples of the Battlestar Galactica and Lostpedia wikis show the opposite scenario: issues regarding gender and sexuality (Toton, 2008), theory-crafting and fan writing (Mittell, 2009) are considered unsuitable content for the wikis' articles. It is this state of affairs that lead Toton (2008, no pag.) to mark fandom wikis as "changing site[s] of opinions and observations rather than a static reference tool[s]." Bullard's (2013) study of Learntoraid.com (L2R), a website that provides WoW player-produced video guides, echoes many of Toton's (2008) and Mittell's (2009) observations, but also makes contributions to the venue of research seeking to elucidate how videogame social-media sites are configured by the culture and value systems of the communities that create them. Bullard (2013) concludes that the documentation presented on L2R has integrated an element of playfulness. The effects of this particular configuration of content and presentation on the site is positive in nature: the playfulness of L2R strengthens the "authenticity, credibility, and the site's role in the [WoW]

community" (Bullard, 2013, p. 1) while also facilitating the information-seeking efforts by players consulting the site. In Bullard's (2013) interpretation, these positive effects are due to how strongly the element playfulness resonated with the larger WoW community. Bullard (2013) also comments on how social media in the videogame domain exert influence over how games are played. L2R's instructional videos present specific approaches to solving problems and perceptions regarding WoW and the role of the player. These serve to legitimize and regulate (certain) modes of gameplay. Newman (2011) makes concurring observations about how another type of widely available and used artifact found in videogame-related social-media environments—walkthroughs—impact the ways in which games are played.

Hunter (2011) and Mittell (2013) consider an aspect of fandom wikis that is left largely uncommented on by Jenkins: the relationship between the affordances of the fandom-community social media and the productive activities of these communities. In parallel to Jenkins' (2006; 2008) view that the logic of participatory culture has collapsed the dichotomy of consumer–producer, Hunter (2011) observes that the nature of work and textual ownership on videogame wikis result in the boundaries between writer and reader being dissolved. The mixing of the roles of readers and writers on wikis is supported by the infrastructure of the wiki platform—which in Hunter's (2011) study is MediaWiki, presently used by Wikipedia and all wikis belonging to the Wikia-domain (see also Paper III). Readers of an article can, with the click of a button (and often without having to register a user name) become a co-author. For this particular feature, which in Hunter's (2011) study is crucial for the wiki reader–writer relationship, the range of available activities is, ultimately, the result of software design choices. Pursuing a similar line of argumentation, Mittell (2013, no pag.) points to six aspects of wiki software that significantly impact the productive activities that they carry: freedom—wikis are open for all and at no cost; transparency—the work that led to an article's current version is traceable in detail; fluidity—wiki articles are commonly always changeable; emergence and collective intelligence—wikis are well-suited to be created by grassroots fans (cf. Pearce's, 2011, thoughts on feedback in social media above) via the collective modes of knowledge production envisioned by Jenkins (2006; 2008) and Lévy (1997); relative anonymity—wiki contributions do not require identification.

Barr (2014, p. 121) considers videogame wikis to showcase overall significant quality and scope, and attributes this to the "inherently scholarly behaviour" exhibited by wiki communities. The construction of a videogame wiki, writes Barr, requires the wiki contributors to make sense of, sort, synthesize and finally disseminate often complex game mechanics. In a study of productive activities in a WoW discussion forum, Steinkuehler and Duncan (2008) make similar discoveries. WoW gameplay and the linked activity of forum participation are seen to (Steinkuehler and Duncan, 2008, p. 530) encourage players to form "scientific habits of mind" which include the ability to engage

in, for instance, collaborative knowledge production and different modes of reasoning, modeling, interpretation, and theorizing. Steinkuehler and Duncan (2008, p. 534) conclude that the majority (86%) of the conversations that were carried out on the forum were—for instance via argumentation, knowledge sharing, and problem solving—collective attempts at attaining further insights about WoW and WoW gameplay. These activities are seen to be incentivized by both WoW's design and established modes of play (Steinkuehler and Duncan, 2008; see also the descriptions of play in Chen, 2012; Nardi, 2010; Warmelink, 2014). WoW presents its players with complex problems that must be solved collaboratively. It is generally expected that players who participate in attempts at solving these problems are prepared and informed of the challenges to be tackled. The development and consultation of wikis, discussion forums, and other resources that host activities of knowledge production are an integral component of this scenario.

5. Theory

The goals set out in the first chapter carry with them certain requirements in terms of theory. In broad strokes: a social ontology is needed that can inform the study and interpretation of the everyday activities of people, the use and effects of technology, memory-making and knowledge-production in videogame-community social life, and the ways in which these elements interact with each other. Additional theoretical requirements include a viewpoint on archival work that is sufficiently nuanced to allow the present work to engage with the field of videogame preservation. These criteria cannot be met by subscribing to a single strand of theory. Instead, this study draws together and configures a series of perspectives from the traditions of practice and document research with the intent to compile a vocabulary that can frame, and guide, the investigation of the slice of the social world in focus. Although the components of the study's theoretical framework will be interrogated separately and in detail below, it can be said that the role of theory here, fundamentally, is as a heuristic device. Theory functions as "metaphor[s] of sight" (Corradi, et al., 2010, p. 268) or lenses that structure analytical attention and help us to grasp the complexities of human ventures by providing a series of ontological, methodological, and consequently epistemological commitments (Nicolini and Monteiro, 2016, p. 17; cf. Corradi, et al., 2010, p. 268). The reach of the study's theoretical vocabulary thus extends from providing explications of social ontology to making up more specialized resources of analysis put into action in its four sub-studies. Table 2 shows the principal components of the framework along with their primary functions and theoretical levels of operations, ranging in scope from 1 (most fundamental) to 3 (most specific).

Level of theoretical operation	Perspective	Function	Key references (e.g.,)
1	Practices	Theoretical base; social ontology; method impetus	Gherardi (2012); Nicolini (2013); Schatzki (1996; 2002); Shove, et al. (2012)
2	Documents	Conceptualize information; narrow the analytical scope; interpretative resources	Brown and Duguid (1996); Berg (1996); Buckland (1991a; 1997; 2017); Frohmann (2004a); Law and Lynch (1988); McKenzie and Davies (2010)
3	Knowledge production	Narrow the analytical scope; interpretative resources	Latour and Woolgar (1979); Knorr-Cetina (1999); Nicolini (2013); Orlikowski (2002)
3	Memory-making	Narrow analytical scope; interpretative resources	Bowker (2005); Halbwachs (1992); Schatzki (2006); Walsh and Ungson (1991)
1	Archival work	A resource to contextualize results in the field of videogame preservation	Bowker and Star (1999); Mortensen (1999)

Table 2. The components of the study's theoretical framework. The levels of theoretical operation range from 1 (most fundamental) to 3 (most specific).

Practice theory provides the theoretical anchorage as well as the main impetus for the choice of methods in the present work. From the perspective of practice theory, social reality is processual in nature and is enacted into existence by the continuous accomplishment of historically and materially situated routine activities—practices (Feldman and Orlikowski, 2011; Nicolini, 2013). No social phenomena "lie behind" (Nicolini and Monteiro, 2016, p. 11) practices; rather, human sociality and constituent social phenomena are both rooted in and performed as a part of the carrying-out of practices. Practices are empirically available for the researcher via the study of what people do and say, and the immersion of the inquiring researcher into the setting of interest (Schatzki, 2012; Talja and Nyce, 2015, see also Chapter 6: *Methods and materials*). Practice theory brings significant resources to the study of technologically enmeshed social phenomena like online videogame communities. Scholarly work on documentation is used to better qualify and interpret the subset of practices in focus of this work. There is a significant vein of practice-based studies in LIS that use 'information practices' as the sensitizing tool of preference (e.g., Lloyd, 2009; Talja, 2005; McKenzie, 2003; Pilerot, 2014a). This

study, instead, takes an interest in practices relating to documentation, that is, documentary practices (see Bates, 2007, and Buckland, 2017 for comparable maneuvers). The theoretical framing of the inquiries into of documentary practices reported in Papers II and III is complemented with perspectives on memory-making and knowledge-production respectively. These additions serve to further adapt the theoretical resources to the objectives of the two sub-studies, and to increase the resolution of their interpretative capabilities. Literature exploring the nature of archival work and, more generally, human efforts to order and classify are furthermore drawn upon to help frame the results of Papers I–III in relation to current efforts and modes of reasoning in the field of videogame preservation.

The remainder of this chapter is devoted to a more in-depth presentation and discussion of the theoretical tracks represented in Table 2. First out are closer examinations of practice theory and studies of documentation and documentary practices. Then follows a section where the proposed documentary-practice framework is further developed to better fit the study of memory-making, knowledge production, as well as the specifics of the social-media services that constitute important sites of empirical study in the present work. The chapter is concluded with a theoretical exploration of archival work. Additional discussions of how the current study's theoretical framework connects with its research procedures can be found in Section 6.4: *A trace-based approach to the study of online videogame communities*.

5.1. Practices

In a review of theoretical developments in anthropology between the sixties and mid-eighties, Ortner (1984) identifies a new and influential corpus of theory that takes an interest in practices. As has been done many times since, Ortner notes the openness of the approach. "What is practice?" Ortner (1984, p. 149) rhetorically asks, and answers: "[i]n principle, the answer to this question is almost unlimited: anything people do." Ortner zeroes in on two of the principal commonalities of practice study: its fundamental orientation is towards what people do, and the possible field of empirical study and theoretical work spans all categories of human activity. The study of practices is also open in the sense that it has no single theoretical lineage or current application. Schatzki (2001, p. 1) presents four categories of practice theorists: philosophers (Wittgenstein, Dreyfus, Taylor), social theorists (Bourdieu, Giddens, Lynch), cultural theorists (Foucault, Lyotard), and those belonging to the tradition of science and technology studies (Rouse, Pickering). Postill (2010, p. 4) observes that the development of practice theory can be sorted into two phases. In the first phase, scholars like Bourdieu (1977), Foucault (1979), Giddens (1979), and de Certeau (1984) did foundational work in establishing key tenets of practice theory. The work produced in the first phase of practice-

theory development was expanded upon by the theorists of the second phase like Schatzki (1996), Reckwitz (2002b), and Warde (2005), who to a greater extent dealt with the practice concept not solely as a vehicle for analysis and theoretical exposition, but as an explicit object of interest in its own right (Reckwitz, 2002b).[24]

Practice-centered approaches have been used to pursue a broad range of research aims in a variety of disciplines. Examples of influential works that employed, and developed, practice approaches include Lave and Wenger's studies of how people learn (Lave, 1988; Lave and Wenger, 1991; Talja, 2010; Wenger, 1998) and Knorr-Cetina and Latour's research on knowledge production in the sciences (Knorr-Cetina, 1999; Latour, 1987). In LIS, the practice approach has seen wide application both as the object of theoretical reflection (e.g., Talja, 2010; Talja and Nyce, 2015) and as a theoretical resource for a wide variety of empirical inquires (e.g., Carlsson, 2013; Lindh, 2015; Pilerot, 2014a; Sundin and Johannisson, 2005; see Cox 2012; Pilerot, et al., 2017; Savolainen 2007 for review-articles of practice theory in LIS research) including videogames (Harviainen and Savolainen, 2014). A significant amount of practice research in LIS is dedicated to "the study of information in social practice" (Cox, 2012, p. 176)—colloquially information practices. Scholars like McKenzie (2003), Talja (2005; 2006), Lloyd (2009), and Savolainen (2008; 2007) played parts in the early use and development of the notion of information practice. Talja and Hansen (2006, pp. 113, 129) refer to information practices as practices of "seeking, retrieval, filtering, and synthesis" of "information objects"—which include human sources, documents, and repositories among other things. Information-practice perspectives hence accentuate the importance for the information scholar to adhere to context, which separates it on the levels of both methodology and meta-theoretical groundings from conceptual alternatives in the study of information activities, for instance information behavior research which has been mainly situated in a behaviorist and cognitivist tradition of research (Savolainen, 2007).

5.1.1. What are practices?

Postill (2010, p. 8) concludes that "practice theory is a body of work about the work of the body." This summary leaves two lines of arguments to unpack, firstly relating to the character of practice theory ("a body of work") and secondly concerning practice theory's central points of focus ("the work of the body"). At this point it should come as no surprise that practice theory, or the practice approach, is not a systematic and holistic theoretical account (Pilerot,

---

[24] There are many works that offer further overviews of the historical and present-day applications of practice theory, see e.g., Savolainen (2007), Cox (2012), Corradi, et al. (2010), Nicolini (2013), and Pilerot (2014a, pp. 39–47).

et al., 2017; Reckwitz, 2002b; Schatzki, 1996; Warde, 2005). It is better described as a grouping of perspectives dedicated to exploring social reality with a conceptual basis rooted theoretically and philosophically in the notion of practice and empirically in the activities of people (Nicolini, 2013). The practice approach hence puts practices ahead of the other common conceptual baselines in social theory (structures, discourses, meaning, lifeworlds, habitus) and promotes it the status of the "primary generic social thing" (Schatzki, 2001, p. 1). The mark of the practice approach is wide: the study of how social life is constituted by and performed through the everyday activities of people has the potential to shed light on a broad range of phenomena pertaining to human coexistence, from cultures (Knorr-Cetina, 1999; Ortner, 1984; Swidler, 2001), social order and change (Shove, et al., 2012) and other macro-social phenomena (Schatzki, 2001) to specialized activities like stock trading (Schatzki, 2002) and soil-sampling practices in scientific work (Latour, 1999).[25] The understanding of the practice theory that informs the present research draws principally on the work of Schatzki (1996; 2001; 2002; 2012), but is also inspired by Reckwitz (2002b), Nicolini (2013; Nicolini and Monteiro, 2016), and Gherardi (2012) among others.

What is a practice, then? A practice is an organized set of bodily activities carried out by multiple people.[26] People are generally members of many different practices, and memberships of practices are always subject to change as new practitioners are recruited and present ones drop out (Shove, et al., 2012). The activities that make up a practice are embodied and routinized; they, and hence practices, often refer to the coordinated goings-on that take place throughout society on an everyday basis: in classrooms, in emergency wards, at dinner tables. The performative aspect of practices is of key interest. Practice theory is not concerned with the activities of individuals or groups of people in the descriptive sense, but with how collective doing enact the different strata and localities of the social world (Gherardi, 2012). The fundamental building blocks of practices are "doings and sayings"—that is, bodily activities that include discursive activities (talk), writing, and mental activities such as thought and analysis (Schatzki, 2002, p. 73; Schatzki, 2001; Schatzki, 2016). Doings and sayings in aggregate make up the more complex activity category of "tasks" which, in turn, make up "projects" (Schatzki, 2002, p. 73). Practices hence embrace activities of different levels of complexity.

---

[25] For Schatzki (1996; 2001; 2002; 2012), practice theory de-centers the interpretative primacy of discourses, meanings, life-worlds, and systems, and posit practices as the fundament of social existence and therefore analytic attention. Schatzki ascribes practices significant interpretative potential as the principal ontological component of salient aspects of human endeavor and existence. For example, science and cultures, communication and learning, emotion and identity, are seen to be arrangements of, or underpinned by, practices (Schatzki, 2012, pp. 13f).

[26] As Nicolini and Monteiro (2016, p. 6) note, authors give these sets different names. Nicolini and Monteiro (2016) refer to them as 'configurations,' Schatzki (2001; 2012) talks about 'arrays' and 'nexuses,' and Latour (2005) about 'assemblages.'

Practices are internally and externally organized. Internally, the activities that make up a practice 'hang together' by virtue of being meaningfully linked through aspects that together produce the internal cohesiveness of practices: practical understandings; rules; teleoaffective structures; and general understandings (Schatzki, 2002, p.77; see also Schatzki, 1996, p. 89). 'Practical understandings' refer to the knowing exhibited by competent members of practice in matters of grasping the situation and judging appropriate action the requirements thereof. 'Rules' are instructive instantiations (principles, instructions) that coordinate activities in a practice. 'Teleoaffective structures' are a property of practices that entail their ends, purposiveness and the associated "affective coloring" (Nicolini, 2013, p. 166), like the satisfaction that comes with significant achievement. 'General understandings' is the ability to comprehensively grasp the overall characteristics of the practice, including its ends and purposes, and range of potentially relevant activities. Externally, practices are related to other practices. These relations are not uniform or evenly distributed. Shove, et al. (2012, p. 17) introduces the concepts of "bundles" and "complexes" that can usefully express how practices are externally organized. A bundle of practices is a looser grouping of co-located and co-existing practices. In contrast, the practices of a complex are more tightly bound together by being synchronized with each other, or in some other way co-dependent or sequenced.

5.1.1.1. The situatedness of practices

Practices cannot be understood (or for that matter inquired into) solely as sets of 'pure' activity; any such efforts must recognize that practices are regimented by material and historical conditions. The general role of materiality in the practice approach is easily rendered: objects and material settings are indissoluble parts of human sociality (Shove, et al., 2012; Reckwitz, 2002a). An obvious example is the strong link between the body and practices as outlined above. Bodies aside, practices are also always bound up with other material entities. Such entities may vary in type and to the degree of the intimacy between practice and entity (Schatzki, 2012; Reckwitz, 2002b). Common types of entities are objects including technological devices and other arrangements such as physical spaces and infrastructures (Schatzki, 2010; Schatzki, 2012). Objects play a manifold of roles in practices, for instance as tools, resources or programs of activity (see the discussion of 'rules' above), or as manifestations that practices are centered on—like canvas in the practice of portrait painting. Physical spaces and infrastructures play similarly diverse roles in practices. The configuration a hospital ward or a classroom, or any other arena of specialized activity, is geared towards facilitating kinds of activities while impeding others (for an example, see Knorr-Cetina's, 1999, analyses of laboratory spaces). Expanding on this point, Nicolini (2013) and Schatzki (2012) further argue that the relationship between material arrangements, their properties, and practices affects social order. Material arrangements can prefigure

change and the perpetuation of practices, thus affecting the possibilities for change or stability in a given social state of affairs. Schatzki (2012, p. 17) and Shove, et al. (2012) write that in certain instances, practices and material entities can be so essentially involved that they "constitute" each other. The objects and infrastructures of the Internet constitute the myriad of practices performed daily in the digital present. Conversely, the configuration of online spaces constitutes the practices carried out there. See Section 6.4: *A trace-based approach to the study of online videogame communities* for a closer examination of this strand of thought applied to the present study of videogame communities in social-media environments.

Practices are historically situated in the sense that they themselves endure through time, and they stand in relation both their own history, including past material settings, and other practices with a past of their own. Practices are not events; they are recurrently enacted situated activity systems that have some degree of persistence (Nicolini and Monteiro, 2016). Practices' capacity for partial endurance rests on the objects and inscriptions that are bundled with the practice, and the memories and knowledges carried by its practitioners. The objects and bodies involved in a practice can thus carry understandings of ends and objectives, as well as activity instructions, and are important parts of the historical setting of a practice.

5.1.1.2. Skilled bodies, social ordering, and human agency

The performance of a practice hinges on the skilled participation of and shared understandings among its practitioners. The particular skills and understandings that are required for successful participation are negotiated by the members of practice, as are what are constituted as irrelevancies, shortcomings, and unwanted activities. In order to become a practitioner, novices are required to train and learn from senior practitioners and objects in order to achieve basic competency. The understanding of knowledge, skills, and shared viewpoints as ongoing accomplishments (Orlikowski, 2002) enacted by collective and coordinated activity paints the newcomer's transformation to a skilled practitioner as a matter of bodily conditioning to the regimes of the practice (Gherardi, 2012). Upon learning how to become a practitioner and depending on the practice, the novice has potentially gained a wide array of bodily and sensory proficiencies, including modes of seeing and the use of tools and objects (Gherardi, 2012, p. 49–76; Law and Lynch, 1988). Here the "normative nature" (Nicolini and Monteiro, 2016, p. 7) of practices emerge. To share a practice, the doings and sayings of a practitioner must to a degree reflect its ways of appropriate activity (Rouse, 2001) although the regimes of a practice do not necessarily have be mirrored in the activities of the individual actor (Nicolini and Monteiro, 2016). Similarly, practices accomplish social ordering also in broader social settings than that of individual practices and practitioners (Schatzki, 2001; Shove, et al., 2012).

Practice theory is not limited to explanations of social stability and the disciplining of the individual body. It can also illuminate change in social ordering and the features of human agency. Practices are not perpetual or stable: they evolve and cease to be enacted; there is always the possibility for new practices to emerge (Shove, et al., 2012). On the definitional level, Schatzki (2001; 2012) describes practices as necessarily open-ended, that is, composed of an indeterminate number of activities and always potentially changeable. Practices that are not open-ended are, in the words of Schatzki (2012, p. 15), "complete, dead, no longer being carried on." Nicolini (2013) asserts that a practice can contain an amount of conflict and discrepancy, and argues that it is through such normative unorthodoxy that they adapt in the face of changing settings. Moving closer to how practices unfold between performances, Nicolini and Monteiro (2016) argue that recurrent enactment should not be equated with repetition simply because such a scenario is unfeasible. Shifting circumstances, objects, and practitioners require each performance to incorporate inventiveness and adaptations to local settings. It is here, in the field of possibility between repetition and invention, that practice theory finds a place for human agency. Citing Ortner (1984, p. 159), Nicolini (2013, p. 5) advances the following view of the relationship between individual and collective performance:

> Social practices thus provide a precise space for agent and agency accepting "all three sides of the [...] triangle: that society is a system, that the system is powerfully constraining, and yet that the system can be made and unmade through human action and interaction."

In this view, actors are neither solely motivated by rationality nor deprived of their agency by social pressures and structures (cultural or discursive systems, habitus). Practices constitute "fields of action intelligibility" that indicate to practitioners which activities emerge as sensible (Nicolini, 2013, p. 172). The horizons set by sensible activity are not the same as rationality, and not the same as immutable directive force. For example, many forms of destructive practices (like smoking) are carried out even though its practitioners' rational understandings may suggest otherwise. The capacity of the individual member of practice to exercise agency rests in that practices are sustained individual activities carried out in the face of local and unstable circumstances. In other words: the dynamism of practices in combination with their dependency on the work of their practitioners creates the possibility of reflection, resistance, and change (Nicolini and Monteiro, 2016).[27] Thus, to summarize the discussion of the notion of practice so it connects to Postill's (2010, p. 8) description of "the work of the body" as being the center-point of practice theory: the complexes of shared and routine bodily doings—i.e., practices—that make up

---

[27] See Schatzki (1996) and Schatzki (2002) for a more in-depth analysis of practices and human agency.

how and why things are done in the way that they are done in everyday life are considered to be the basic building blocks of the ontology of the social world. Schatzki argues that this claim, along with the centering of social analysis on practices, beneficially collapses the dichotomies of individual/society, mind/body, and subject/object (Schatzki; 1996, p. 12f; 2012, p. 14). The distinctions between mind/body and subject/object are dissolved by defining practices as made up of bodily routines as well as mental and discursive activities including understandings and knowings and the use of objects (Reckwitz, 2002b). Because practices are made up of individually performed, yet shared, routine activities Schatzki further asserts that practice theory can discern the social nature of the individual without resorting to either individualist or holist theoretical models (Schatzki 1996, p. 8–13; Warde 2005, p. 132).

5.1.2. The practice of studying practices

It is time to take a step away from more general expositions of how the notion of practice is conceived in this study, and instead engage with the question of how the study of practices has been approached. In doing so, the discussion will begin to cross over into research procedure. The section can be read as to something of a prelude to Chapter 6: *Methods and materials*, where questions of method will be examined in additional detail.

There are a series of distinctions in how the study of practices can be (and has been) approached. Corradi, et al. (2010) and Gherardi (2012) identify two major categories: studies that concern themselves with practices as an empirical object, and studies that draw epistemological implications from adopting a practice-focused perspective. While the categories are not clear-cut, the studies of the latter grouping to a greater extent put practice theory to use as "a way of seeing" (Corradi, et al., 2010, p. 268) how the social features of interest were routinely produced and re-produced by embodied coordinated bodily activity and use of objects. Drawing on Reckwitz (2002b), Shove, et al. (2012, pp. 7f, 119f) presents a position that subsumes the understanding of practices as both "entities" and "performances" while embracing a practice-based epistemology. A practice is depicted as an entity in so much as it is a pattern that holds certain types of and particular relations between activities, objects and their use, material settings, ends and teleoaffective linkages that persists between performances. Practices are also performances, which are approximate enactments of the elements of the practice-as-entity. The persistence of a practice is dependent on its performance, and it is through performances that practices are sustained and evolve.

This study subscribes to the characterization of practices by Shove, et al. (2012). Practices are held to be identifiable and potentially enduring social phenomena, and practice theory is the primary tool of making sense of how routinized activities and other elements of a practice constitute the slice of the social world under study. Practice research must, as argued by Nicolini (2013),

consider the relationship between choices of method and the theoretical suppositions of the practice lens. The study of practices in this study follows the basic procedure outlined by (Ortner, 1984, p. 149; cf. Schatzki, 2012, pp. 24ff): "[t]he analyst takes [...] people and their doings as the reference point for understanding a particular unfolding of events, and/or for understanding the processes involved in the reproduction or change of some set of structural features." Practices however become entities available for analysis and interpretation only after the researcher (or practitioner) thematize and represent them as a unitary phenomenon isolated from the vast network of entities and relations that is social life (Gherardi, 2012; Nicolini and Monteiro, 2016). Swidler's (2001) analysis of levels of hierarchy in the field of practices suggests a method of approach to how such thematization can be done. Swidler (2001, p. 90) argues that some practices are more enduring, influential, and determinative than others. Practices of this influential variety are termed 'anchoring practices': they underpin social features shared across numerous local settings. Anchoring practices thus constitute promising research foci in studies aiming to nuance the understanding of the social complexities that govern any given context.

The significance of social-media based production of documentation in the constitution and activities of videogame communities has been copiously and variedly shown in the preceding pages of this study. With a basis in Swidler's (2001, pp. 86f) assertion that a general characteristic of anchoring practices is that they pertain to the formation of fundamental social relationships in a given context, such productive practices are singled out as this study's principal objects of research and are framed as practices with documents or 'documentary practices.' The perspectives of document studies and the notion of documentary practices as vehicles for research are explored in the following two sections of this chapter.

5.2. Documents

The present research sidesteps the notion of information in favor of a theoretical stance that advances documentation as its primary meso-level analytical tool (Table 2). It should be noted the sidestepping of the information concept is not a casting aside, but rather a tactically motivated favoring of one term over the other like that performed by Bates (2007), Buckland (2014), and Frohmann (2004a). Bates (2007) and Buckland (2014) employ the information concept productively in abstract matters, e.g., as the unifying category of the meta-level "information disciplines" (Bates, 2007, p. 3) or of all things informative and information-related in everyday parlance (Buckland, 2017, p. 1); when the discussion demands a more specific term—like what it is that the information disciplines actually deal with—they both, although not invaria-

bly, switch to another terminology. Buckland (2017, p. 2, emphasis in original) writes, "[...] for each of the principal meanings of the word *information* there is also another suitable, more specific word" (see Sköld, et al., 2015, for examples of how multiple renderings of the notion of information can be put to use in the study of videogames). In the case of the present study, another suitable, more specific word is 'documents.' The shift in conceptual basis from information to documentation in the particular context of this study is justified on three counts. Firstly, and principally, documentation carries stronger connotations of materiality which is fruitful in relation to the characteristics of both the empirical settings of this study and of the source materials that underpin its results (Blanchette, 2011; Geiger and Ribes, 2011; see Chapter 6: *Methods and materials*). Frohmann's (2004b; 2004a) analysis of information and documentation is of importance here. Frohmann (2004b, p. 387) posits that documents and practices with documents are "ontologically primary to information." Thus, the study of documents and documentary practices in videogame-community-related social media emerges as viable approach for the information scholar. Secondly, the term documentation carries a stronger affinity with the sphere of archives and preservation, which facilitates the bridging of the somewhat differing vocabularies of LIS and archival studies. Thirdly, document is a concept more compatible with the practice-theoretical framework than information. These propositions will be argued more closely below.

5.2.1. The document perspective

That which is here conceived of as 'the document perspective' is grounded in the desire to advance —in different ways and from different viewpoints—the understanding of how human affairs are entangled with a particular class of objects: documents. Documents, like practices, have been theoretically and empirically explored and used as framing devices in manifold studies and scholarly disciplines, notably sociology (Smith, 1974; Vaughan, 1996), organization studies and (sociological) workplace studies (Harper, 1998; Heath and Luff, 1996), archival studies (Tourney, 2003), museum studies (Latham, 2012), and LIS (Huuskonen and Vakkari, 2015; Trace, 2002). While it is difficult to find properties that are shared among all the particulars of this diverse scholarly field, a widespread notion is that the relevance of document-focused research fundamentally stems from the centrality of documents in many activities and social phenomena both of the past, and presently. Documents are involved in travel (tickets, timetables), healthcare (patient journals), the ordering of everyday life (shopping lists, work schedules), the production of legal status (birth certificates, identity documents), and the functioning of organizations and systems of government (statues, constitutions). The rapid development and widespread use of the Internet and networked computing devices have resulted in proliferation of document types, modes of production, and

use, further adding to the complexity of how documents are involved in social matters (Brown and Duguid, 1996; Levy, 2001).

Document research brings into focus the constitution of documents themselves, how documents are used, produced, circulated, and the roles and functions of documents in wide range of social settings. Work has also been put into theorizing documents and how they interconnect with human goings-on. Efforts to explore the definitional dimensions of documents has been undertaken by Buckland (1997; 1998; 2014) and Frohmann (2004b). Of a later date, attempts have been made to further nuance the conceptual and analytical capacities of the document notion by exploring it from the viewpoints of orality (Turner, 2010; Turner, 2012) and document phenomenology (Gorichanaz and Latham 2016; Latham 2014; see also Lund, et al., 2016) among others. In an early paper on how documents function in social life, Brown and Duguid (1996) advance documents as rallying points in the formation and maintenance of communities and—owning to documents' status as boundary objects—as a factor in how relationships between communities are shaped. Documents have been shown to be pivotal objects in the production of scientific (Frohmann, 2004a) and ethnographic knowledge (Riles, 2006b). To illustrate, Latour and Woolgar (1979, p. 151) describe the close relationship between documents, documentary practices, and scientific knowledge production as it is carried out in a laboratory environment in the following manner:

> [The] work of the laboratory can be understood in terms of the continual generation of a variety of documents, which are used to effect the transformation of statement types and so enhance or detract from their fact-like status.

Documents have also received attention in macro-sociological analyses of the constitution of society and social interaction. Weber (1968) concludes that bureaucratic and rationalized approaches to public administration would not be possible without the existence of documents. In the same vein, Giddens (1979, p. 152) argues that documents support stable bureaucratic operations and discipline by exerting "control of time": documents simultaneously order and record the past and indicate future paths of activity. Trace (2002) observes that the production of documents with such ordering effects is not simply a by-product of organizational activities but proactive at furthering goals and agendas. Smith (1999) analyzes documents as key mediators of discourse in society, and consequently as objects that have a substantial effect on the (here, ideological) coordination of people across spatially and temporally disparate locales. Multiple studies draw similar conclusions concerning the roles and functions of documents in diverse professional and non-work settings: Law and Lynch (1988) and McKenzie and Davies (2010) show how documents play important instructive parts in the process where novices in certain practices learn to direct attention and act in prescribed ways; studies of Berg (1996), Berg and Bowker (1997), Davies (2008), Heath and Luff (1996),

Kameo and Whalen (2015), and Østerlund (2008) explore how influential documents types (patient journals in medical work, the forms of emergency service center operators) in professional practice coordinate work, facilitate communication, shape social relations, and play parts in decision-making and in how subjects (patients, emergency callers) are produced and via "bureaucratic inscriptions of persons" (Kameo and Whalen, 2015, p. 21).

5.2.2. What is a document?

Within LIS, document studies constitute a sub-discipline or a distinct school of thought (Hjørland, 2014; Lund, 2009; Turner, 2010). Document-centered research as it has emerged in LIS often describes the works of 'documentalists' Paul Otlet (see Buckland, 1997) and Suzanne Briet (2006) on the characteristics and function of documents as conceptual keystones (Buckland, 1997; Buckland, 2017; Lund and Buckland, 2009). While inquiries that relate to the document-studies tradition are diverse, they nevertheless offer a few distinguishing commonalities: these studies often show an interest in the materiality of information and exhibit a contextually-oriented understanding of the modes of its use and production (e.g., Frohmann, 2004a; Hartel, 2010; McKenzie and Davies, 2010; Pilerot, 2014b; Shankar, 2009; Trace, 2007).

The document perspective offers an opportunity to conceptualize the notion of information in a manner that productively calls into focus some of the defining characteristics of the social-media environments of videogame communities. Information is a concept with many possible operationalizations regarding what it is, where it comes from, its effects, and how it is a part of the activities and processes of human endeavor (see e.g., Day, 2000; Huvila, 2010; Ingwersen and Järvelin, 2005; Talja, et al., 2005). The theoretical guidance offered by the document perspective focuses the study of information on what Buckland (1991a, p. 6) terms "tangible entities," that is, information objects such as data or, and this is the denomination that is preferred here, documents (cf. Talja and Hansen, 2006). Moreover, Buckland asserts that materially-oriented conceptualizations of information are best suited for the analysis of information systems because such systems "can deal directly with information only in this sense" (Buckland, 1991b, p. 352). Before the discussion proceeds to open up the conceptual vocabulary of document studies, it can be noted that this brief dive into the notion of information and its various interpretations has resulted in the following analytical starting points. The material understanding of information advanced by Buckland, and adopted here, points to physical manifestations of information—documents—and their associated activities, but also orients attention towards the systems in which these manifestations are created, stored, described, and retrieved. The empirical instantiations of such information systems in the context of the present research are the videogame-community social media (wikis, discussion forums) under study.

Numerous scholars have investigated the definitional dimensions of documents—led by the question "what is a 'Document'?" (Buckland, 1997, p. 804). While it is arguably in the present context more interesting to further explore what the concept of document can do (theoretically) than how it may be defined, a brief overview of the major lines of argumentation regarding the possible constitutions of documents will serve to further elucidate the document-studies approach. Otlet and Briet proposed differing criteria for what constitutes a document. Otlet (Buckland, 1997 and Wright, 2014) conceived of the notion most broadly, and advanced the idea that a document was a media-independent and sign-carrying material object produced with the intention to express human thought. Briet (2006) on the other hand chose a more selective definition that, while maintaining that documents could be of any media or format, stressed that documents must function as evidence in support of some fact or phenomenon. A general distinction between Otlet and Briet and present-day document scholars is that the informativeness and function of documents are seen to be partly dependent on the time, place, and sociocultural context of their interpretation (Frohmann, 2004b; Lund, 2009; Lund, 2010). The openness of the document concept in terms of its capacity to denote a diversity of media has however been maintained also in later writings on the topic, and is often seen to include also social media (Skare and Lund, 2014) and other computer-based artifacts (Brown and Duguid, 1996; Buckland, 1998; Levy, 2001). Lund (2010) argues that this particular multi-media range of the document concept makes it an attractive choice over competing notions like 'text' in studies that incorporates analysis of diverse media.

The present research work subscribes to the definitions put forward by Buckland (1998) and Frohmann (2009). From this viewpoint, and rather than employing formalist criteria to determine what a document is, that which functions as a document is considered to be one. This approach is at its core not declarative, but explorative: new or in other ways unconventional instances of documentation—like social media in the case of the present study—are put into contact with "theories, arguments and relevant intellectual resources to try to [via correspondence and affinities] bring about an enlarged understanding of what documents and documentation can be" (Frohmann, 2009, p. 296). A working definition of documents is required, however, and for this Frohmann's (2004a, p. 137) definition—which is based on an inference of Rouse's arguments regarding knowledge as embodied and practice-bound (1996, p. 193f)—will be used. Documents are here described as "different material kinds of temporally and spatially situated bundles of inscriptions embedded in specific kinds of cultural practices" (Frohmann, 2004a, p. 137). This definition resonates with both the practice-theoretical viewpoint and the characteristics of the types of empirical materials that were collected during the study of videogame communities. In terms of the former, Frohmann understands documents to be parts of certain document-related practices—documents are in this study posited as one of the types of objects that practices are

"intrinsically connected to and interwoven with" (Schatzki, 2002, p. 106). The theoretical insights offered by the document perspective do not reside here, however, but rather in how studies in this vein of research have moved beyond discourse on definitions and documents as mere carriers of information to analysis of the role of documentation as situated artifacts that play a part in many different practices in a great variety of social setting (see Pilerot, 2014b; Frohmann, 2004a). The contributions of the document perspective to the present inquiry will be outlined in the section below, along with its many points of relation to the practice-theoretical approach.

5.3. Practices with documents

At the center of mind in the present section is practices with documentation—the intermixture of the document and practice lenses. The section begins with a discussion of practices with documentation and proceeds to more closely outline the implications studying of videogame-community production of documentation in social-media environments from this particular theoretical perspective. Important focus points include how videogame-community knowledge production and memory-making are enacted in documentary practice.

The theoretical lenses of documents and practices as outlined in the above few pages serve to direct analytical attention in certain ways. The change in conceptual footing from information to documentation puts documents in a central spot of analysis. In the study of videogame-related social-media, important categories of documents include texts, images, commentary, videos, and—as will be argued further on—metadata tags and vote systems. Most social-media platforms are hence systems that allow for the creation, dissemination, revision, negotiation, and preservation of documents (cf. Skare and Lund, 2014). Studies of documents can yield key insights into the communities and conditions by and in which they were produced (as shown by Berg, 1996; Berg and Bowker, 1997; Hartel, 2010; Huvila, 2011; Kameo and Whalen, 2015; McKenzie and Davies, 2010; Trace, 2002; Trace, 2007; Østerlund, 2008). Sharing the analytical limelight with documents are practices (with documents). Scholars of documents and documentation have pointed to the importance of the connection between documents and document-associated practices (see e.g., Heath and Luff, 1996; Berg, 1996; Brown and Duguid, 1996; Hartel, 2010; McKenzie and Davies, 2010; Shankar, 2009; Østerlund, 2008). Lund (2010, p. 744f) states that the most interesting questions relating to the study of documentation are "who is documenting and how is it being done in different modes, using different means." Frohmann (2004b) argues that that it is by document-related practices that the informativeness of documents emerges, implying that to a significant degree document research needs to be concerned with the practices that make documents a seamless part of the

venture under study. In the present study, the practices-with-documents lens provide a similar perspective: it is by being a part of the practices of videogame communities that documents become a shaping part pf community sociality. The term 'documentary practices' is used to single out the subset of practices that are of interest in the pursuit of the research questions that direct this work. In the study of videogame-community social media, such practices relate to documents in two principal ways. First, they embrace the routine and everyday activities of document creation, dissemination, organization, revision, and related sayings and doings. Second, owning to the trace-generating functionalities of the social-media platforms under study, they generate documentation simultaneously as the practices are carried out (see Section: 6.4: *A trace-based approach to the study of online videogame communities* for a continued discussion of this point).

The notion of documentary practices has been used in many studies before this one. The corpus of previous works that examine documentary practices is multidisciplinary, varyingly theoretically and methodologically framed, and vast; if its boundaries are expanded to include highly relevant related terms like "document work; document practices; information-, knowledge- and records management; information creation document work, records management, [and] information creation" it becomes substantially vaster (Pilerot, 2011, p. 7; see Trace, 2011 for a review of some of the literature). A common focus in studies of documentary practices, akin to a key point of interest in the present inquiry, is to elucidate how documents (patient records, reports, notes, records, forms, other instances of paperwork) are part of human activity in some online or proximal space, for instance in social media (Geiger and Ribes, 2011; Papers I–III) or in workspaces of scientists (Frohmann, 2004a; Latour and Woolgar, 1979; Shankar, 2009). Besides the documents themselves, objects of study often include organizations (Harper, 1998; Kameo and Whalen, 2015), professional categories, communities, and everyday-life settings (Hartel, 2010; McKenzie and Davies, 2010).[28] A few examples can here serve to showcase the width of the field of study of documentary practices and closely related concepts: Kosto (2005, p. 45) inquiries into the documentary practices of scribes in the early middle ages; Coutinho, et al. (2000, p. 656) study the "documentary practices of target-setting, reporting, evaluation" in the multi-level bureaucracy of an immunization program; and Falk and Darling-Hammond (2009), Hampson Lundh and Dolatkhah (2015), and Hampson Lundh and Johnson (2015) examine practices with documents in educational contexts from different angles. Other well-visited areas of research in the study of documentary practices include healthcare work (Berg, 1996; Berg and Bowker, 1997; Heath and Luff, 1996; Ngin, 1994; Sanders, 2015) and workplaces (Lloyd, 2007; Luff, et al., 2000).

---

[28] Among the exceptions are studies of documentary practices in filmmaking and photography. Examples include Newbury (2002) and Hight (2008).

5.3.1. Practices with documents in videogame-community social media

The present study approaches the study of documentary practices in video-game-community social media in three ways: "empirical," "theoretical," and "philosophical" (Feldman and Orlikowski, 2011, pp. 1240f). The empirical approach acknowledges the everyday activities of people as the most important determinant of the characteristics, sustenance, and ventures of videogame communities. The theoretical approach employs the practice-theoretical tools rendered in this chapter to investigate and describe the production of documentation in the social-media environments of videogame communities, with a special interest taken in how the production of such documentation is linked to community efforts of memory-making and knowledge production. Lastly, the philosophical approach consists of placing practice at the center of human sociality, and creating a theoretical framework that productively transposes the ontological and epistemological assumptions inherent in the practice perspective to the particular social and material setting under study. This chapter constitutes the attempt to fully realize the philosophical approach.

From the practice viewpoint, the social life of online videogame communities is ordered by, and transpires through, documentary practices. There are of course many of documentary practices that are not pertinent to videogaming, or pertinent to videogaming but not to the research pursued in this study. The practices that are of relevance here are those that involve the use of social media as a means or to pursue ends relating to knowledge production or memory-making, and that in doing so result in some amount of documentation being produced. The documentation can be of any kind and be delivered in any way. These documentary practices comprise all of the activities that take place on social-media platforms. The lens of documentary practices allows for the situated (materially, historically, socially) understanding of the communal modes of use and production by which social-media documentation emerge, including videogame-community memory-making and knowledge production, to be pursued on the empirical basis peoples' activities in the scenario everyday goings-on in the communities' social-media environments.

Documentary practices also are central to the constitution of videogame communities. From the practice viewpoint, social structures like families, organizations, and communities rest on the recurrent accomplishment of practices (Bobrow and Whalen, 2002; Gherardi, 2012; Nicolini, 2013; Schatzki, 2001). Online videogame communities are thus processual in nature and can only be said to exist in any meaningful way as along as their members continue to engage in the range of practices adopted in community social space. In the case of online videogame communities, where social-media services often make up the primary sites of activity, these practices are commonly of the documentary variety. Community membership is tied to participation in community practices (Shove, et al., 2012, see also Section 5.1.2: *The practice of*

studying practices). People generally engage in multiple practices, and such engagements are subject to change. Community memberships consequently work in the same way: people can belong to more than one community and community memberships are dynamic. Following Gherardi's (2012, p. 2) conception of organizations, a videogame community is made and continuously remade of a "web of practices which extend internally and externally" in and from the community. As noted earlier, document research points towards the key roles of documents and document activities and in the genesis and processes of community social life. Drawing of researchers like Anselm Strauss and Benedict Anderson, Brown and Duguid (1996; 2000) argue that the circulation of documents between members of a community is a major force in keeping the group together, and a vehicle for negotiations both within and between communities. Brown and Duguid (1996; 2000) furthermore see the social role of documents extending to being an important generative force in the formation of communities by allowing like-minded people with shared interests to come together, as well as concluding that documents are of importance for the analysis of various facets of community social life, including social control and power relations. Different aspects of the relationship between documents and communities have been examined. Examples include how key document types can provide entry into a community of practitioners (Frohmann, 2004b; Law and Lynch, 1988; McKenzie and Davies, 2010; Pilerot, 2014b) and how documents function as boundary objects and articulations of power and authority between communities (Frohmann, 2004b; Huvila, 2011).

5.3.1.1. Documentary practices, knowledge production, and memory-making

The description and analysis of documents and documentary practices in videogame-community social media hence provide insights into the situated modes by which these environments are built and put to use and, additionally, community involvement and dynamics. With the intent to limit the scope of and attain high analytical resolution in the study of videogame-community social media, the investigations into documents and documentary practices in this context focused on two areas where documentary practices play a key role in community social life, that is, in memory-making and knowledge production respectively.[29]

The drive of practice theory to anchor social phenomena in collectively enacted programs of activity frames knowledge production and memory-making as a part of the field of practices. Knowledge production and memory-

---

[29] There is no distinct separation between memory and knowledge, as pointed out by Bowker (2005). For the purposes of this analysis the two notions (and their study) are nevertheless treated separately.

making are social features analyzable as situated activities performed by multiple people and not as the mental states of individuals (Feldman and Orlikowski, 2011; Schatzki, 2001). In the context of online videogame communities, documentary practices are greatly influential 'anchoring practices' that are "more central, more controlling, more determinative than [other practices]" (Swidler, 2001, p. 81). Knowledge production and memory-making are subsets of documentary practices which become tangible for the researcher via the detailed study of accomplished activities and their ends and means (Gherardi, 2012). In this study, memory-making and knowledge production play a triad of non-separable roles. They are firstly examples of videogame-community processes enacted by the performance of documentary practices and secondly the empirical points of focus in Papers II and III respectively. As such, they are, thirdly, windows into how videogame-community social life is interlinked with the use and production of documentation in community social-media environments. The choice to delimit the investigation of videogame-community documentary practices to memory-making and knowledge production also carry significance because of the importance of these processes in social groups like communities, which will be discussed further below.[30]

Knowledge production

Knowledge is heavily discussed in the practice-theoretical literature, and is often of central importance to what a practice is deemed to be. Knowledge has been defined as "mastery [...] expressed in the capacity to carry out [an] activity" (Nicolini, 2013, p. 5); as "an ongoing social accomplishment, constituted and reconstituted as actors engage the world in practice" (Orlikowski, 2002, p. 249); and Gherardi (2012, p. 3) understands practice as "collective knowledgeable doing." The ontology and epistemology provided by the practice lens thus leaves no distinction between to act competently as a part of a practice and to know—to do is to know (Blackler, 1995; Gherardi, 2012; Nicolini, 2013). Knowledge is often enacted by groups of people, and is always situated in local conditions. However, the present study is only generally concerned with the type of procedural knowledge that videogame communities show in practice. Its specific interest lies in how videogame communities engage in the documented and explicit production of propositional knowledge, that is, "organized statements" (Bell, 1973, p. 41, as cited in Knorr-Cetina, 1999, p. 6) of facts and states of affairs. The production of propositional knowledge in videogame-community social-media environments is analyzed as enacted in documentary practice. Knowledge production here consists of communally performed programs of activity that are regulated by goals and the use of certain means (in Paper III, e.g., sources and investigative methods) set by the community. Importantly, the documentary practices of knowledge production

---

[30] Also see Papers II and III for additional discussions of memory-making and knowledge production respectively.

include the use of the community's social-media environments as a platform and as a tool for knowledge-building. It is important to note however that procedural and propositional knowledge are interwoven. The production of propositional knowledge is communally enacted in practice by the members of the community. Hence propositional knowledge presupposes procedural knowledge about how to proficiently produce facts and statements (Schatzki, 2001). The production of knowledge is understood to be shaped by the historical, material, and social elements of the local settings and to be performed as a shared performance of communuty documentary practices (Corradi, et al., 2010).

The theoretical toolset used in the study of knowledge production in videogame communities holds other components than practice theory. Two such components were previous empirical research on knowledge production in web spaces (e.g., Jemielniak, 2014; Mittell, 2009; Reagle, 2010) and in the sciences (e.g., Becher, 1989; Knorr-Cetina, 1999; Latour and Woolgar, 1979). Document research vested in the inquiry into the entanglement of documents and knowledge production and use also provided theoretical inspiration, particularly regarding the conceptualization of patterned and everyday activities on the site (via the notion of documentary practices) and the commonalities of interests and motivations that make up the backbone of the community (Brown and Duguid, 1996; Brown and Duguid, 2000; Frohmann, 2004b). The works of Knorr-Cetina (1999), Becher (1989), and Latour and Woolgar (1979) informed the study approach on both general and specific levels. More generally, they directed attention towards the factors that determine how knowledge is produced in a certain setting rather than on the management or application of knowledge itself. Specifically, data collection and analysis were guided by a series of focus points drawn from the works cited above. These foci brought into view principally activities, means and materials, the boundedness of the setting of knowledge production, and the principles and logics of the enterprise under study (see Table 1 in Paper III).

Memory-making

The literature presents multiple links between memory and practices. Orr's (1996) study of photocopier repair technicians suggests that memory-making is a part of the performance of knowledge practices; a means to the end of knowledge retention. Nicolini's (2013, pp. 167f) reading of Schatzki (2006) suggests that "[s]social memories are unevenly distributed among [practice] participants, and they are inscribed in language, identity, and artefacts." Nicolini (2013) draws the conclusion that practice-based analyses of social life should recognize the important role of past events in present goings-on.

The investigation of memory-making in videogame communities is informed by research exploring memory as shared and processual. Memory is an important aspect of every social system and entity including organizations, communities, individuals, societies, and a key part in the way they function

(Halbwachs, 1992; Featherstone, 2000; Featherstone, 2006; Nora, 1989; Walsh and Ungson, 1991). Memory does not simply mean the ability to recall past events or cognitive objects. To remember is also to constitute and inform activities in the present by drawing on knowledge of past phenomena. In the words of Bowker (2005, p. 15), memory serves as a means to frame "the present in a particular way: it is a tool with which to think." In a similar vein, Walsh and Ungson (1991, p. 70) outline memory as the ability to mobilize "knowledge of past events and bring it to bear on present decisions." Research that points to the close connection between present doings and workings, memory, and documented information about things past (Bowker, 2005; Foucault, 1982; Latour, 1987; Shankar, 2009; Smith, 1974; Trace, 2002) views the triadic interaction of present-past-documents as tied to the characteristics of the repositories of the context under study, and to the practices relating to the use of these repositories. Nora's (1989) notion of a 'lieux de mémoire' helps in conceptualizing the social media in focus as places of documentation significant to the communal memory.

The study of videogame-community memory-making proceeded in two main, and complementary, analytical thrusts. Identification of documentary practices specifically related to the recording and use of information related past phenomena and occurrences precipitated an understanding of the everyday events and processes of memory-making. This analysis was informed by an inquiry into how the online discussion board in focus functioned as a documentary system (Geiger and Ribes, 2011), and the roles it played in the memory-making documentary practices of the community.

5.4. Archival work

The ability to make the current work actionable in the context of videogame preservation rests on empirical insights into the currently dominant approaches in the field (Paper IV) and requires a theoretically guided understanding of the nature of the archival work of which preservation is an important part. The latter resource will be introduced below.

Archival work is here viewed as a specific instantiation of the general human effort to classify, standardize, and organize (Bowker and Star, 1999). Appraisal, arrangement, preservation, outreach, and the creation of archival representations are among some of its principal areas of activity. While common lines of development exist to some extent (Cook, 1997; Ridener, 2009), archival work is situated in a multiplicity of historical and organizational settings, and the modes of archival activity vary between countries and different types of archive holders such as nation states, municipalities, individuals, popular movements, and communities. Moreover, the characteristics of archival endeavors are also connected to the types of objects on which they center.

Different types of objects have different legislative statuses, material compositions, and conceived value relating to their current or future use. Of the greatest importance for the understanding of archival work that permeates the present work, however, is that it is ultimately social in nature (Kirschenbaum, 2012). The orderings, descriptions, and prioritizations implicit in archival work are underpinned by conceptions and knowings implicitly or explicitly articulated in the contexts where these activities are carried out (cf. Bowker and Star, 1999; Brown and Duguid, 2000; Olson, 2002).

The characteristics and complexities of archival work are a recurring object of investigation in the archival-studies field (e.g., Dowler, 1988; Flynn, 2001; Huvila, 2015; Yakel, 2003). The relationship between the work of the archivist and its organizational and societal circumstances is both reflective and productive. It is reflective in the sense that the particularities of archival work bear connections to cultural, social, and technological developments in society, and productive because such developments are important drives of change in the archival setting (Brothman, 1991; Cook, 1997). Schwartz and Cook (2002) stress that the direction of influence between archival work and large-scale societal phenomena influence is reciprocal. They argue that archival work and the decisions and activities it encompasses—like the creation, management, description, and appraisal of archives and archival objects—are socially and culturally configured, and impacted by the needs and regulations of their local contexts. Archival work is one of the primary determinants of what is kept it the archives of a certain society and, consequently, of the material underpinnings of societal memory (Schwartz and Cook, 2002) and historical research (Miller, 1981). A related vein of archival study expounds archival work from the perspective of archival conceptions and theory. A shared viewpoint in this corpus is that archival activities, theoretical models of archival management (Flynn, 2001), and conceptualizations of archival matters cannot be separated. In the words of Mortensen (1999, p. 15), archival activity relies on an "understanding of its object, the nature of its task, the goals to be achieved, available options, and which, if any, of the available options are permissible from an ethical, legal, or customary point of view." This perspective implies that archival research with a range of aims—including studies that aims to elucidate the presuppositions of archival work or as is the case in the present inquiry, to provide additional insights into the workings of a setting of archival interest—can be of conceptual and practical benefit to archival ventures (see also Gilliland and McKemmish, 2004; Kirschenbaum, 2012). The theoretical framing outlined here informed the empirical investigation of the currently prevalent modes of activity and conceptualization in the area video-game preservation reported in Paper IV.

6. Methods and materials

This chapter focuses on the procedures and prioritizations that were employed in the production of the study's four sub-studies, reported in Papers I–IV.[31] To start, an exposé of the foundational methodological approach at work in the design of the present study is provided. This exposé serves to contextualize the subsequent and more detailed discussion of method choices, method multiplicity, selection of field sites, and the presentation of the sub-studies' empirical bases. Section 6.4: *A trace-based approach to the study of online videogame communities* draws on the study's theoretical framework, methodologically relevant earlier studies, and the characteristics of the sites studied in Papers II and III to chisel how the study of practices in social-media environments was conceived of and approached. The chapter concludes with considerations of research ethics and the limitations of this study.

6.1. Methodological cornerstones

From the very outset, the steps and decisions big and small that have driven this study project forward have been positioned in the framework of exploratory research (Stebbins, 2001). The reason was one of necessity, or to put it in a less deterministic way; the question-driven yet flexible and pragmatic approach to academic knowledge production advanced by Stebbins (2001) as 'exploratory' offered guidelines for how to constructively handle the set of research-design challenges that emerged due to the characteristics of the present research project. These challenges were of two types, both stemming from the interdisciplinary character of the research. Existing at the crossroads of LIS and archival studies, this study sheds light on the production of documentation in community-produced social media and explores how these results can benefit research and practice in the area of videogame preservation. The study's position in the fields of archival and LIS presented the first, and conceptual, challenge of building a theoretical vocabulary that had adequate resolution to explain the patterns and particulars found in the data, and the potential to bring the results of the studies into dialogue with earlier research. The second challenge consisted of how to provide well-grounded empirical analyses of the

---

[31] For an overview of Papers I–IV, see Tables 1–3 and Chapter 7: *Paper summaries*.

practices and contexts of social-media production in the online videogame domain, and means to situate the results in the current state of videogame preservation. The goal-oriented but sequentially paced research processes of exploratory research, where the insights gained from each step of study are allowed to inform the following (Stebbins, 2001), offered a way to navigate these challenges. Papers I–IV were hence planned, executed, and written in chronological order.[32]

This study subscribes to the idea that rigor in qualitative scholarship is largely a function of the congruence between the chosen research paradigms and the questions posed for investigation (Haverkamp and Young, 2007; Guba and Lincoln, 1994; for a discussion of other criteria, see Guba and Lincoln, 1994; Markham and Baym, 2009). Seeking to deepen the understanding of the emergence and role of community-produced documentation in the social-media spaces of online videogame communities and to tease out the significance of such an analysis for videogame preservation, the present study positions itself as a qualitative inquiry within the paradigms of interpretative research. This positioning brings with it an interest in understanding of how that which is said and done in the enterprises under inquiry is understood and socially, culturally, historically, and technologically configured. This entails the viewpoint that reality is graspable via the co-constructed patterns of meaning, knowledge, and experience that emerge as a result of inter-personal activities, which are to different degrees shared among individuals, communities, and other social groupings. The epistemological implications for the researcher are that knowledge is attainable by a process of mutual interaction and effect, where the researcher interprets the phenomena of interest while reflexively investigating his or her role in the research process. Methodically, these foundational assumptions call for inductive and context-sensitive approaches that allow the researcher in a way to enter into the situation or situations under study. By doing so, social realities and situated activities become available for interpretation as they are articulated and enacted by the study's participants. Practice theory, as it is considered in this study, is a theoretical language that mandates a qualitative and interpretative research. As shown in Chapter 5: *Theory*, the chosen theoretical framework is heuristic in function, and is adept at explaining how social life transpire through interactions between activities and context, and inherently presumes bottom-up research approaches based on "the accumulation of local specificities [of doings and sayings] rather than the creation of abstract categories" (Nicolini and Monteiro, 2016, p. 17 referencing Becker, 2014). The interpretative view of scholarly knowledge production as embraced here does not preclude the application of quality criteria or the credibility, transferability or dependability of its results (Guba, 1992).

---

[32] Different aspects of this study have also been explored in writings by the present author not included here. See e.g., Sköld (2011), Harviainen, et al. (2012), and Sköld, et al. (2015).

The understanding of the research process that underpins the present work does not presuppose that the researcher suspends previous bonds to and knowledges of that which is studied and attempts to engage in the inquiry 'neutrally.' On the contrary, relevant experiences and insights derived from the researcher's previous commitments can—if employed tactically and self-reflexively—be used as sensitizing devices to inform decisions in all stages of scholarly inquiry, and thus become a method in and of itself. Before I wrote the first syllable in the research proposal that eventually wound up as the present text I had been playing videogames for about twenty years and surfing the web for almost fifteen. Once I got hold of a computer with an Internet connection, the way I pursued videogaming changed rapidly and fundamentally. The opportunities to play and talk about games with others become no longer ultimately dependent on the schedules of my friends, but on the status of my Internet connection. For me, Internet access also transformed videogaming itself. Videogaming evolved into something even less about the games themselves, the hardware required to access them, and button pushes on a videogame controller than it already was. To take part of the production and circulation of videogame-related texts, videos, pictures, and software online became (and still is) my most everyday medium of experiencing videogaming meaningfully. To summarize, the choices made in the planning, execution, and writing-up of this study were not determined, but rather were beneficially contributed to by the insights and experiences gained from my many years of engagement with videogames and videogame-related services on the Internet. The processes of finding suitable field sites for the studies reported in Papers II and III are prominent examples of how my familiarity with videogame-related social media was put to use.

6.2. Choices of method

Papers I–IV carry the hallmarks of qualitative and interpretative research. The papers can be divided into two groups based on their empirical context of study. Published research, reports, and white papers make up the source materials of Papers I and IV. Papers II and III on the other hand are field studies of videogame-community practices in social-media environments.

Paper I applies a method of conceptual analysis to a range of literatures with the purpose of bringing together a theoretical vocabulary that can serve as a point of reference in the subsequent empirical papers, a step in the process of qualitative research that has been observed to be beneficial (Markham and Baym, 2009) and whose benefits are accentuated even further by the exploratory progression of the study project. Paper IV approaches the study of research publications and reports differently. The paper provides an analysis of the current state of socioculturally-focused research and projects in the area of

videogame preservation by the way of a qualitative systematic review (Bandara, et al., 2011; Burda and Teuteberg, 2013; vom Brocke, et al., 2009), thus allowing the contributions of Papers I, II, and III to be anchored in the archival context of videogame preservation. Among the applicable methods in the study of scholarly writings, the present ones where chosen because of how they supported the pursuit of the respective aims of Papers I and IV. Paper I sought to on the basis of a wide and flexible reading of relevant bibliographies relate some key themes and concepts (videogames, videogame preservation, social media, documents, practices) to each other. The requirements of method were to be able to identify patterns, connections, and potentials of synthesis in the literature under study—this is something conceptual analysis is well adapted to. In Paper IV, the requirements were of another kind. Paper IV aimed to identify and explore certain aspects of the field on videogame preservation, which made relevant a method that allowed the controlled production of a corpus that could be taken into review via the use of (in comparison to Paper I) more rigid modes of analysis that facilitated the identification of commonalities and variations in across the articles, book chapters, white papers, and reports. The approach of the qualitative systematic literature review has such features.

Papers II and III report studies of documentary practices in two different empirical settings and with to some extent separate theoretical frames of reference. Papers II and III are similar however in the sense that they share a key ethos: to strive to produce a more nuanced understanding of their respective objectives by elucidating an 'emic,' insider, explanation of why things are done the way that they are done in the domains under inquiry (Harris, 1976). Paper II is a study of documentation and memory-making processes on a videogame discussion board carried out during a period of approximately seven months. Paper III, on the other hand, is based on a three-month ethnographic study of knowledge production and documentation on a videogame wiki. The studies reported in Papers II and III were conducted via the use of slightly varying methods. These differences once again stem from nuances in the research objectives and consequently research designs of the two studies. Both Paper II and III are processually focused, and seek to explore memory-making and knowledge production in videogame communities as collectively enacted programs of documentary practices. Paper II evinces a stronger orientation towards the documentation-of-things-past that was produced as a result of community documentary practices, while Paper III takes a keener interest in the processual dimensions of knowledge production on the site under inquiry. To realize these divergent, but complementary, research ambitions, a certain degree of methodological dissimilarity was necessary. Paper III employed an ethnographic approach that to a larger extent rested on observing community knowledge production as it was practiced. Paper II had more of the characteristics of an archival study and relied on the analysis of practices via documentation produced by the community than Paper III. See Section 6.4: *A trace-*

based approach to the study of online videogame communities for an in-depth theoretical perspective on the methods employed in Papers II and III.

While closer descriptions of the methods and materials of the study's constituent papers can be found in Papers I–IV, in Chapter 7: *Paper summaries*, and further below in this chapter, a commonality of method can be mentioned here. The coding work associated with Papers I–IV were carried out with inspiration from grounded theory (Charmaz, 1983; Glaser and Strauss, 1967), in particular the method of constant comparison (Corbin and Strauss, 1990, p. 9). This study is inspired by the research strategies grouped under the grounded theory umbrella, even though the research presented here differs from them on many counts, and does not attribute a similar primacy to the generation of theory.

6.2.1. On method multiplicity

At this point it is apparent that the present study's roadmap toward realizing its knowledge goals includes the use of diverse methods. Although criticisms of multiple-methods approaches have been voiced (Leininger, 1992), they are well established. The multiple-methods research design has been employed in research covering topics such as scholarly documentation in archeology (Börjesson, 2017), information sharing in design research (Pilerot, 2014a), and the investigation of physically performed role-play from an information-systems perspective (Harviainen, 2012). The use and nomenclature of multiple-methods approaches can vary depending on the specific configuration of methods and their intended effects. 'Triangulation' describes the use of several operations (theories, data types, investigators, methods) to provide a fuller understanding of the social phenomena under study (Denzin, 1978), including the combination of qualitative and quantitative approaches (Jick, 1979). Beyond multiplism in research design, the 'mixed-methods' approach has been called "the third methodological movement" (the other two being qualitative and quantitative methodologies) (Johnson, et al., 2007, p. 118). Although Johnson, et al. (2007) show that definitions vary in the details, the concept of mixed methods often denotes the tie-in of both quantitative and qualitative methods and methodologies in single studies or multi-phase research projects.

The way of encapsulating the use of several methods that lie close to the strategies adopted in the present research is similar to 'bricolage,' a metaphor created by Lévi-Strauss (1973) but adopted into the discussion of qualitative research strategies by Denzin and Lincoln (1994). Like the other formulations of operational multiplicity mentioned above, bricolage is seen as a way of enhancing the rigor in terms of design and quality in terms of results (Denzin and Lincoln, 1994, p. 5). As advanced by Denzin and Lincoln (1994) and further explicated by Rogers (2012), bricolage can be employed by the researcher on several levels of the research process—from theory to method and interpretation and more. A common thread among these variations is "flexibility

and plurality" (Rogers, 2012, p. 4) in combination with a cognizance of the co-constructive character of scholarly knowledge. In terms of method choices, bricolage calls for "fluid, eclectic, and creative approaches to inquiry" (Rogers, 2012, p. 5) and an ongoing openness toward the changing requirements of different contexts of research. As such, the bricolage way of selecting methods is synergistic with the exploratory character of this study project. The subsumption of the bricolage outlook in research design is visible in several of the characteristics of the present study. In the pursuit of its research questions the study links different theoretical approaches and disciplines native to both the humanities and social sciences. It also uses several methods in the collection and analysis of a wide range of empirical materials drawn from several field sites including scholarly writings. Pilerot (2014a; cf. Nolin and Åström, 2010) argues for the applicability of bricolage in LIS research, pointing to the shared interdisciplinary character of the discipline.

6.3. Choices of field sites

The process of selecting field sites was influenced by the inductive and exploratory research ethos to which this work subscribes, in combination with the anthropological impulse to go to the sites where the activities and processes of interest are carried out and to attempt—via study—to "reduce the puzzlement [of what goes on there]" (Geertz, 1993, p. 16).

The writing of Paper I—in which the concepts of videogame communities, documentary practices, and videogame preservation were brought together—netted the insight that the subsequent empirical studies to be reported in Papers II and III required the identification of videogame communities that significantly engage in use and production of documentation in social-media environments. /r/cityofheroes, a 'subreddit' on Reddit dedicated to the MMORPG City of Heroes (CoH) was chosen as the first field site, which is explored in Paper II.[33] The site emerged as a promising location for research after CoH's publishers announced that they were closing the game. The decision to study the subreddit was based on the assumption that CoH's demise would make the documentary practices relating to memory-making more prominent and frequent on the site. This assumption that was later on shown to be correct. For Paper III, the ambition was to complement the study of videogame-community memory-making in social-media spaces with a study of another key community process—knowledge production—was enacted in documentary practice. Since wikis are important sites of knowledge production in both videogame, television-series, and film communities (Barr, 2014; Mittell, 2009; Mittell, 2013; Toton, 2008), preliminary investigations of a series of WoW-wikis

---

[33] For an introduction to the field sites and the materials collected in the four sub-studies, see Section 6.5: *Materials* below.

94

were conducted, and Wowpedia was chosen as a field site. The realization that this choice was not a good one came fairly quickly. The majority of the site's goings-on were minor corrections to already written articles, and it was difficult to discern any patterns of activity that could provide insights into the documentary practices of knowledge production. The search continued for a videogame wiki associated with a game that was just about to be released, with the intent to follow the activities on the wiki during the first few months when the wiki's community members began to work on investigate the game and document the results. The operative idea here was that a broad range of documentary practices of knowledge production would be both articulated and contested—hence made more visible—in the early stages of work on a wiki, when seasoned members of the community are faced with a large influx of new editors and have to establish the guidelines for work on the new project. Given this hypothesis, the choice fell on the Dark Souls Wiki (the DSW) whose members were anticipating and preparing for the release of the videogame Dark Souls II (DS2) in the near future. The joint aim of Papers II and III is to shed light on some of the documentary practices through which videogame communities produce documentation on social-media sites, and to examine—via the study of memory-making and knowledge production—how such practices are a part of the broader scope of community social life. As a means to provide insights into these distinctly multi-site phenomena on the basis of single-site explorations, /r/cityofheroes and the DSW were selected because they were "strategically situated" (Marcus, 1995, p. 110f; see also above) and potentially capable of providing insights into similar configurations of videogame-community social-media documentary practices also in other locales.

6.4. A trace-based approach to the study of online videogame communities

This section outlines how the study of videogame-community documentary practices in social-media environments was pursued and theoretically underpinned. In doing so it leans on the theoretical resources presented in Chapter 5: *Theory*, method literature, relevant previous inquiries, and the characteristics and features of the empirical sites in focus in Papers II and III. The first point of focus is a recapitulation of how online communities emerge from the viewpoint of practice theory, and how the practice-theoretical framework guided the study of videogame-community documentary practices of memory-making and knowledge production. The discussion then moves on to offer an in-depth theoretical and methodological examination of the principal research procedure used in the study of documentary practices in online videogame-community social media: the trace-based approach.

6.4.1. Communities and practices

'Community' is not the only suitable term available to denominate online gatherings of people (alternatives include 'online social networks' Garton, et al., 1999) and neither is it easy to handle (Hillery, 1955; Komito, 1998; Porter, 2004) nor is it without criticisms (Gee, 2005; Gee and Hayes, 2012; Nicolini, 2013). Nonetheless, there are significant reasons why it could be productively adopted in a study like the present one, presuming cognizant handling. 'Community' is how many gatherings of people on videogame-related social-media sites often describe themselves, and the term has a place in the vocabulary employed by actors in the videogame industry. As seen in Chapter 4: *Online communities and online community productivity*, the notion of community is also in common use in previous studies of the types of online social gatherings that center on videogames, television series, and films (see Hollister, 2016; Jenkins, 2008; Pearce, 2011; Warmelink, 2014). In terms of analytical scope, the focus is not set on individuals or inter-personal relationships in communities. Instead, as already discussed in Chapter 5: *Theory*, practices make up the primary unit of analysis in the study of videogame communities as it is carried out in the present work. The notion of practice is used as a theoretical lens to make sense of activities-in-context as they emerge on the aggregate community level, and as the primary way of analyzing and describing the communities under study. The focus on practices provides the resources to tentatively explain how the social life videogame communities is produced by, and enacted through, the everyday, routinized activities of community members situated in the material configurations of the site where they are carried out. In this sense, the present study follows the suggestion of Komito (1998) to "[r]ather than engaging in typologies, the most useful means of looking at Net communities may be to treat a 'community' as background, and focus instead how individuals and groups cope with continuously changing sets of resources [...]."

An online videogame community is seen to consist of a number of individuals that jointly and recurrently accomplish and negotiate practices. The existence of a community is tied to the enactment of shared practices; the same practices also mark the boundaries between communities. Members of online videogame communities interface with each other most commonly via social media or other computer-based means; face-to-face interactions are less common. Individuals are able to be, and usually are, members of multiple communities (Baym, 2000), and memberships can be temporary or more long-term. Videogame communities exist in many varieties and in many settings, online as well as offline. Those that are of interest to the research presented here are communities of the 'online' type, i.e., those that are to a large and defining extent are enmeshed with social media to the point that their ability to coordinate and carry out practices is dependent on it (Hine, 2000; Pearce, 2011). As noted by Boellstorff (2008) is his study of SL, there are many

groups of players within the sphere of a single platform. This viewpoint informed the present research work in that videogame sociality is understood as partly made up of overlapping communities with different degrees of closeness, centered on different activities and topics—in-game formal play groups ('guilds') (Nardi and Harris, 2006; Williams, et al., 2006), modding and other forms of player and community-produced add-ons (Prax, 2016), and general gameplay (Chen, 2012).

The practice-based understanding of communities informed research design in the sense that individuals who actively participated in videogame-related social media were considered to be community members. This criterion has been of employ also in studies of online communities of other theoretical orientations (see Jenkins, 2013). The implication of using participation as a criterion for community membership is that players of the games that such sites relate to are not by default seen to be a part of the site communities, and neither are non-active users of the sites in question. The present study's focus on how videogame-community memory-making and knowledge production is enacted in (documentary) practice differs from that employed by more holistically oriented studies of videogame communities and cultures (Boellstorff, 2008; Pearce, 2011; Taylor, 2006). It is to a greater extent in line with the granular approach showcased by Barr (2014), Steinkuehler and Duncan (2008), Jenkins (2006) and others. The principal trade-off between these ways of studying videogame communities is between a higher level of detail and the possibility of attaining a broader perspective. Given the less generalist and more specialized aims of the present study, the latter prioritization appeared to be the most profitable.

6.4.2. The trace approach

The selection of methods to be employed in the studies reported in Papers II and III was to a significant extent influenced by 'trace' or 'database' ethnographic approaches (principally Geiger and Ribes, 2011; see also Mittell, 2009; Mittell, 2013; Schuurman, 2008). Several scholars have noted the archive-like (in the broader, non-professional and non-institutional sense) and highly textual character of many social-media platforms, and the importance of text-based communication in online environments (Hine, 2000; Rehn, 2001). The trace approach as advanced by Geiger and Ribes (2011) is predicated on the ubiquity of textual communication and the trace-generating functions of many online services, not seldom existing in the sphere of social media. These documentary traces, which can consist of "transaction logs, version histories, institutional records, conversation transcripts, and source code" (Geiger and Ribes, 2011, p. 1), are the empirical basis of the approach. Building on a complex of ethnographic writings relating to both methodology (e.g., Marcus, 1995) and archival ethnography (e.g., Vaughan, 1996), Geiger and Ribes (2011) suggest that trace analysis is a valuable part of the arsenal of

methods available to be used in the study of social groups whose interactions and communications are carried out via digital environments. By interpreting the documentary traces generated by community activities a range of insights can be attained, scaling from routines to practices to interwoven and multi-level tellings of interaction (Geiger and Ribes, 2011).

6.4.2.1. Putting traces into focus

In Chapter 5: *Theory* it was argued that a theoretical framework centered on the notion of documentary practices can be fruitfully and credibly put to use in the study of videogame-community production of documentation in social-media spaces. The present section delves into some of the methodological implications of this stance that merit further discussion. Every theoretical stance brings with it a certain analytical frame, and this analytical frame often needs to be further delimited due to the practical demands of scholarly inquiry. The case of videogame-community production of documentation in social-media environments can illustrate this process well. The documentary practices of online videogame communities are nested in nets of clustered practices and complex material contexts. They are constituted by the embodied activities of their practitioners (keyboard presses, analytic mental exercises, web browsing), hardware (personal devices with Internet connectivity, network and electrical wiring, servers), software (operating systems, firmwares, browsers, videogames), and other aspects of the participants' local settings. The documentary practices of videogame communities bear relations to the administrative practices that determine the functionalities of wikis and other social-media services, of other communities or groups online, and of the videogame industry. With the purpose of crystallizing and making manageable these webs of practices and materialities, the inquiries reported in Papers II and III take the activities of participants as they appear on the social-media platforms under study as their basic empirical unit of analysis. This approach brackets certain things, and brings others into focus. It renders unobservable the observation of participants' physical enactment of documentary practices and the material settings in which such bodily movements are carried out. The doings and sayings of participants only come into view when they impact the social-media site under study, and then only partially—there are segments in the chain of activities that resulted in some effect that stay out of reach.

However, there are considerable empirical and methodological advantages to the chosen approach, which moreover can be substantiated theoretically. In terms of the empirical basis, the chosen approach allows for the study of the coordinated activities of hundreds of participants during extended periods of time using the same principal means of participation as the members of practice themselves—the services offered by the social-media platforms. While the material that is collected in this way cannot provide any significant insight into the physical contexts of participant activities, the features of the specific platforms under study—Reddit and MediaWiki—openly provide minute details of many user activities, which,

in turn, is beneficial in the inquiry of past and present configurations of practices. Importantly, the approach presupposes in situ methods of inquiry located in settings of arguably higher relevance than the material arrangements that make up participants' physical environments: the social-media sites themselves. Social-media sites are places of vast importance in the documentary practices of video-game communities. They function as a primary interface of interaction and channel of communication and coordination for practitioners (Hine, 2000; Rehn, 2001), and they hence play key roles in the processes by which community practices are sustained, negotiated, and abandoned. Social-media sites furthermore hold and make accessible written rules and regulations of the community and artifacts that tell of their past. To summarize, to study practices by observing and participating in the activities that are carried out on social-media sites does come with non-negligible limitations. Nonetheless, the approach allows the researcher to gain empirically well-grounded understandings of the practices under study on the basis of detailed and easily collated accounts of the activities of large groups of participants and the possibility of engaging in (both in terms of methods and means) the same level of participation as other members of the practice.

6.4.2.2. Traces and practice theory

The present line of discussion can be closed by a reflection on how the practice-study approach and the characteristics of the cut of social reality in focus impact the practice-theoretical framework. What is the study of practices as they are carried out in social-media environments in fact is a study *of*? Kameo and Whalen (2015) present a distinction between organizational studies based on documentation and the study of the creation, use, and functions of documentation in organizations. This study spans both categories. It is a study of documentary practices based on the documentation that is produced as these practices are carried out. Echoing previous characterizations of net-based fieldwork (Geiger and Ribes, 2011; Hine, 2000; Rehn, 2001; Schuurman, 2008), one available option is to consider the nature of the study to be archival. An instance of this archival nature is the collapse of certain categories of activity, notably between acts of discourse, writing, and other types of work that include elements of coding like the management of templates on MediaWiki. Of larger significance is that, using the approach to practice-study advocated here, the activities of the participants that form the empirical basis of the research emerges not as activities but rather the processual or final results thereof. The activities here come out as something akin to what Terrone (2014, p. 163) identifies as a 'trace': "a concrete particular that has been produced by a cause and that allows a suitable beholder to recognize this very cause." Depending on the type of trace, examples of 'suitable beholders' are competent practitioners and researchers that have attained the required level of familiarity with present goings-on.

While recognizing the archival features of the study, Barad's (2007) critique of representationalism may be used to more narrowly define to what extent the activities of practitioners as they are available for study of social-media platforms can be considered to be 'traces.' Seeking to establish a more "integral" way of understanding the relationship between nature, culture, and technology, Barad (2007, p. 25) outlines an ontology with wide-reaching and fundamental implications. Barad (2007) questions the ontological separation of representations (social-media traces; scholarly papers) and that which is represented (activities of members of practice; knowledge held by a scholar) as symptoms of an insufficient rendering of the close and mutually constitutive relationship between humans and non-humans. Barad (2007) suggests a reconsideration of this relationship based on the switch from an interaction to an intra-action point of view. The ability of humans and nonhumans to constitute and influence goings-on in the social world does not stem from their relationship with each other, but is constituted from *within* their relation to one another. This view implies that humans and non-humans are "constitutively entangled" in everyday life (Orlikowski, 2007, p. 1437) and does not privilege either in the analysis of social affairs.

The consideration of the social and material as inextricably tied to one another provides an explanation of how the 'traces of activity' found in the social-media environments of videogame communities can hold major social significance therein. The need to make distinctions between traces and the activities that produce them remains, but there is little reason to do so in the specific context of the present study. In the documentary practices of videogame communities, a statement found in a discussion forum is neither a trace nor an entry in a database, it is a social-material activity. There are several advantages to this position. It provides an explanation of social agency in social-media environments that is both coherent with the documentary-practice framework and compatible with the oft-pointed-out important role of forums, wikis, and other technologies in videogame communities. Also, the inextricability of social activity and its material representation in social-media services corresponds with other accounts of how objects or technologies routinely and habitually used as a part of a practice tend to become "absorbed into [it]" from the cognitive viewpoint of the practitioner (Knorr-Cetina, 2001, p. 178; cf. Jørgensen's, 2016, analyses of narrative and ludic components of immersion in videogame play). Parallels can furthermore be drawn to Berg's (1996, p. 500; citing Latour, 1987, Haraway, 1991, and Lynch, 1993) observations regarding the relationship between medical practice and medical records: "the creation of the representation involves the active work of ordering [- - -] it is in fact involved in the very event it represents. There is no neat temporal succession between the two: rather, the representation and represented are achieved simultaneously." In light of this line of reasoning, videogame-community social media emerge as complex documentary systems that support

masses of users to participate in practices relating to the creation, access, circulation, storage, and categorization of large amounts of "bundles of inscriptions" (Frohmann, 2004a, p. 137). Similarly intricate are the documentary practices, which are at all times performed in an environment where detailed records of non-current doings and sayings are readily available.[34]

6.4.2.3. Studying traces

Geiger and Ribe's (2011) trace approach offers the researcher the opportunity to observe and participate in community activities with the same means of operation that the members of the community employ in their interactions with each other—a prerequisite of practice research according to Schatzki (2012). The trace approach informed the studies carried out on /r/cityofheroes (Paper II) and on the DSW (Paper III) by highlighting the benefits of focusing attention on the logs, version histories and other indicators of interaction that these sites make available for analysis.

Notwithstanding the differing characteristics of Papers II and III, the inquiries they report were informed by the same general approach to the study of practices. In its most foundational form, the method of practice study employed consisted of grounding "explanations in what is empirically observable [materials, infrastructures, doings and sayings in the field sites], patiently tracing back phenomena to arrangements of concrete elements that produce the state of affairs under investigation" (Nicolini and Monteiro, 2016, p. 17). Such attempts started with the identification of repeated patterns of activity in the field sites, and early efforts to delimit the practices of interest from the rest of the practices observable there in order to focus further study. This operation of "isolating" (Gherardi, 2012, p. 73) practices is heuristic and directed by the design of the study being performed (research questions, theoretical frameworks, et cetera) and the happenings and features on and off the field site. When a higher degree of familiarity with the everyday on-goings of the sites was reached, the "from outside" approach to understanding the practices under inquiry was complemented with attempts to study them "from inside" (Gherardi, 2012, p. 161), from the perspective of the practitioners. The trace approach to the study of /r/cityofheroes was employed in tandem with document analysis and was to a greater extent, as pointed out above, of the former type. The study of the DSW was conducted more from the point of view of practitioners and was combined with ethnographic methods and sensibilities (cf. Geiger and Ribes, 2011, p. 9).

---

[34] There are of course many ways to understand the more specific relationship between material entities and practices. One of the more visible dividing lines among authors engaged in the practice approach concerns the particular issue discussed above, that is, what degree of agency should be attributed to objects. Gherardi (2012; 2016), Reckwitz (2002b), and Shove, et al. (2012) distribute ontological priority and agency equally among human and non-human actors, while Schatzki (2001; 2012)—although his position varies—generally privileges the former.

6.5. Materials

The empirical basis of the study is diverse and comprehensive, and can be grouped into three categories. The first and second categories of materials emanate from the field studies of /r/cityofheroes on Reddit (Paper II) and the DSW (Paper III) respectively. Scholarly works on the topics of videogames, practice theory, documentation, and videogame preservation constitute the third category (Papers I, IV, the introduction). See Table 3 for an overview of the source materials of Papers I–IV.

Paper	Site of study	Temporal aspect	Types of materials collected
I. Sköld, O. (2013) Tracing Traces. A Document-Centred Approach to the Preservation of Virtual World Communities	Relevant scholarly works on videogames, videogame preservation, practice theory, and documentation	N/A	97 works, principally journal articles, conference proceedings, book chapters, and monographs
II. Sköld, O. (2015) Documenting Virtual World Cultures. Memory-Making and Documentary Practices in the City of Heroes Community	/r/cityofheroes on Reddit	The study spanned 223 days	The interactions of 299 unique users[35] in 140 discussion threads with a total of 849 comments (text, images, videos) and 2, 712 votes
III. Sköld, O. (2017). Getting-to-Know. Inquiries, Sources, Methods, and the Production of Knowledge on a Videogame Wiki	The Dark Souls Wiki	The study spanned 94 days	Change logs from 94 days of study detailing an average of 584 interactions a day; field notes; over 110 downloaded documents (e.g., site policies, discussion threads)
IV. Sköld, O. (2018). Understanding the 'Expanded Notion' of Videogames as Archival Objects. A Review of Priorities, Methods, and Conceptions	Relevant scholarly works on videogame preservation	The literature searches were conducted in October 2015	42 works, principally journal articles, conference proceedings, book chapters, and white papers

Table 3. The source materials of Papers I–IV.

Reddit (www.reddit.com) is a multilingual, but primarily English-language, website centered on user-submitted content and discussion thereof. Common content types include text, images, videos, and links to other websites. Content on Reddit is presented in a threaded, online-discussion-forum fashion where the original post and its comments are nested together. An important feature

---

[35] "A 'unique user' is a user that has started a minimum of one thread or submitted a minimum of one comment to /r/cityofheroes during the period of study" (Paper II, p. 312).

of Reddit is the vote system. Users are offered to either 'up-vote' or 'down-vote' all posts and comments on the site, thus affecting the visibility of the rated content. Reddit is organized in sub-forums called 'subreddits.' Subreddits play key organizational roles on Reddit; while the site offers many ways to aggregate content from across multiple subreddits or with particular characteristics—trending, most up-voted or down-voted, most recent, et cetera—every post must be assigned to a subreddit before submission. Subreddits vary in terms of popularity and focus. There are generalist subreddits like /r/gaming (with 17.2 million subscribed registered users at the time of writing) and /r/food (12.6 million subscribers) as well as a great span of subreddits specialized on specific videogames, genres of music, YouTube content creators, and much more. User registration is required to post content on the site, comment, vote, and to subscribe to subreddits, but not to browse the site or to use its navigational tools. Reddit was launched in 2005 and has since become a popular and widely referenced service. Reddit (2017a) claims to be the "5th largest site in the United States" and to have had 274 million unique visitors in January 2017. /r/cityofheroes (https://www.reddit.com/r/cityofheroes) is a seven-year-old subreddit dedicated to the posting of content related to and discussion of CoH and related topics. During the study of approximately seven months of activity on /r/cityofheroes (resulting in a total of 140 discussion threads and 849 comments) a diversity of materials were posted to the subreddit, for example screenshots, photographs, videos, audio, narratives, accounts of personal experiences, criticisms, and exposés on game mechanics.

The Dark Souls Wiki (http://darksouls.wikia.com) is a community-driven wiki devoted to the three-part Dark Souls videogame series. The DSW is hosted by Wikia (2018), a for-profit but free of charge wiki-hosting service oriented towards "pop culture" in the major instantiations of game, film, and television-series fandom. Wikia (2018) claims to host 385 000 wikis and to have 180 million monthly users. Wikia wikis are of many languages and focuses and sizes. Small wikis can consist of a few pages and large ones, like the Marvel Database (http://marvel.wikia.com), of more than 150 000 pages. For the purposes of comparison, the DSW consisted of around 2 600 pages at the end of the study reported in Paper III. Wikia wikis run on the open source software MediaWiki. MediaWiki is highly customizable and there are both major and minor aesthetic and functional differences among the wikis hosted by Wikia. The DSW consisted of several sections and held a variety of materials. There was a discussion forum, an open-for-all chat channel, and each registered user had a personal blog ('wall'). Materials on the site principally dealt with site administration and the Dark Souls games. Examples of materials of the latter category include lists of administrators, chat moderators, users with other responsibilities and privileges, policies, guidelines, codes of conduct, and analytical tools designed to help inform editing decisions. The study of the DSW was performed during a time when the community was dedicated to the second game in the Dark Souls series, DS2. Materials pertaining to DS2

was of many forms and characteristics. A few examples: there were discussions of narratives and investigations of how the videogame worked, screenshots of DS2, article templates and other tools of work, descriptions of in-game characters and transcriptions of dialogue, item entries complete with pictures, descriptions and tables of item values and attributes, strategies for successful gameplay, and comment sections connected to most of these materials. The majority of activities on the DSW were accessible without having to register a username. At the time of the study, the registration of a username on the DSW and Reddit was both voluntary and without cost.

6.6. Ethical considerations

This study follows the Swedish Research Council's (2017) guidelines. Pertaining especially to Internet research, the ethical guidelines of the Association of Internet Researchers' (AoIR) ethics working committee (Markham and Buchanan, 2012), and the writings *Ethical Guidelines for Research Online* (Bruckman, 2002) and *Passive Data Collection, Observation and Recording* (European Society for Opinion and Marketing Research, 2009) are additional frameworks used for ethical decision-making along with Nissenbaum's (2010) notion of contextual integrity (which is also touched upon by the AoIR guidelines). The process of ethical consideration has permeated the writing of this study and its sub-studies, and the main steps of the research process—from research plan to manuscript—have been presented for commentary to the scholarly community on many occasions. The communities that are depicted in the research data are not considered to be vulnerable or exposed, and no particular ethical dilemmas or risks of harm have been identified against which the benefits of the present research work would need to be weighed. Rather, the communities that are the focus of investigation of the research presented here may plausibly be empowered by the studies, which show them to be arenas of expertise and nuanced, meaningful and documentary practices (cf. Gherardi, 2012, p. 177).

Following the rationale explored by Clifford, Marcus, and their co-authors in *Writing Culture* (Clifford and Marcus, 1986), the present study recognizes that the "[r]epresentation and explanation" of the social phenomena has the potential to influence the emergence of, or in other ways effect, these phenomena. While this also holds true for the (also fundamentally social, see Kirschenbaum, 2012; Newman, 2012a) venture of videogame preservation, more specific ethical considerations are warranted in relation to the study of /r/cityofheroes and the DSW. The present study's stance towards the anonymity of the users whose endeavors in social-media spaces that have provided the empirical basis of this research consists of three components. Firstly, no attempts have been made to identify, track, or inquire further into the activities of the users beyond that which is openly accessible without registration and

the use of passwords on the studied sites. Secondly, put in context with the non-sensitive nature of the present study's research interests, the guiding ethical stance with regards to openly accessible materials posted on /r/cityofheroes and the DSW is that they knowingly have been put into a public space with links to the submitter's user name. The stance towards openly provided logs and other indicators of activity such as Reddit's up-vote and down-vote system are considered in the same fashion. The main impetus for this reasoning rests on the observed boundaries of common use in the respective Reddit and wiki communities. Thirdly, this stance is further justified by Reddit's Privacy policy and Wikia's Community creation policy. Wikia's (n.d.) policy state that "the information [users] put on the wiki can be copied and reused by anyone". Reddit's (2017) policy similarly encourage users to "take [...] into consideration before posting" that posts, comments, usernames, date and timestamps are publicly accessible to both visitors to the site and registered users. Furthermore, no close social relationships were established during the course of the research that require special ethical handling and reflection, and neither was any personally identifiable information or information of a legally or ethically sensitive nature collected or gleaned.

6.7. Limitations

The results and arguments presented in this study are tempered by the following limitations.

It is of interest to consider the construction of field sites as it has been carried out most visibly in Papers II and III, but also in Papers I and IV to some extent. Law (2004) and Law and Urry (2004) argue that the world is never as structured, bounded, and fixed as the methods of social inquiry make it out to be. Gupta and Ferguson (1997) discusses field sites in a similar fashion and present the idea that the 'the field' itself is a function of the methods by which the study of the social world is approached, and that it privileges some kinds of knowledge while obscuring others. In application, the studies of the communities of /r/cityofheroes and the DSW make them appear more self-contained and self-sufficient than they, in fact, may be. It was a choice of research design to explore what could be learned from the practices and material settings of these communities taken as wholes, and while it was not a matter of priority to elucidate how the communities in focus relate to other sites, groupings, and eventual community hierarchies, this approach had its drawbacks as has been made apparent. Literature reviews or studies providing theoretical syntheses can be argued to work in similar homogenizing ways.

Some limitations also stem from the particulars of how practice theory is used in the study.[36] In the practice lens the totality of the social world consists of a web of interlinked clusters of practices. The practice approach to social study nevertheless necessitates that the researcher for the purposes of manageable study isolates and thematizes a small part of this web, thus framing social life as enacted in practice so that some aspects become more visible and others less so (Nicolini and Monteiro, 2016). The difficulties that arise out of such selective action are however always present in scholarly work and can be sufficiently handled via sound research designs, cognizant application of methods, self-reflexivity, and the guidance provided by suitable theoretical frameworks. Limitations more particular to the present inquiry are imposed by the choice to study practices via the trace-based approach as outlined in this chapter. The approach leaves several factors of videogame-community documentary practices outside the bounds of what is possible to know; biographical data of any kind, the activities and use and type of machinery that result in traces and other materials becoming available for analysis on social-media sites, and communications and interactions that take place outside of the studied spaces are three weighty examples aspects that this study cannot elucidate. These drawbacks are acceptable because of the usefulness of the trace approach in the current study. The approach affords prolonged field studies in the data-intensive environments of social-media services centered on what is of primary empirical interest in practice research: the everyday coordination and enactment of patterns of activities, means, and ends as they emerge from a point of view that to a substantial extent resemble that of the practitioners.

Another limitation relates to the transferability of practice research. Practice research is grounded in local material settings and the collective everyday activities of people in a certain context. This means that practice studies can capably "explain situated dynamics, [but] not universal variation" (Feldman and Orlikowski, 2011, p. 1249). The results offered by practice research can thus not be used to predict human behavior in other, similar locales. The transferability of practice research instead lies in how the rendering of and theoretically informed reflections on identified practices—including how tasks are accomplished, materials are put to use, and relationships are enacted—can benefit the understanding of human endeavors also outside of the studied circumstance (Feldman and Orlikowski, 2011, p. 1249).

Like the first limitation but relating to results and not field sites: the theoretical and empirical narratives presented in this inquiry and its sub-studies do not represent the only possible telling. The current study is, in the words of Clifford and Marcus (1986, p. 7) "partial—committed and incomplete," affected by the chosen methodologies, theoretical frameworks, and foci of research attention. To take the study of community knowledge production on

---

[36] Limitations of the trace-based approach to the study of documentary practices are also discussed in Section 6.4: *A trace-based approach to the study of online videogame communities*.

the DSW as an example, the work of creating a videogame wiki could, and should, be studied also from the viewpoints of production in the videogame marketplace ('playbour,' Lund, 2015), to a greater extent organizationally cognizant perspectives (Jemielniak, 2014), and more. Further, the role of technology in the studies of /r/cityofheroes and the DSW is only mentioned, when its functionalities or affordances possess large explanatory potential vis-à-vis the practices in focus of inquiry (e.g., Knorr-Cetina, 1999; Latour and Woolgar, 1979). Seeing as the chosen methods in the study of Reddit and Wikia make the sites emerge as sociomaterial systems of interaction, the low priority of aspects of technology and infrastructure present obvious limitations (see Skeggs and Yuill, 2016 and van Dijck, 2012 for examples of studies that more directly engages with how the technology of social media produce sociality). This being said, the present work has been written from the standpoint that the traditions of humanistic and social studies scholarship to which is subscribes have the capacity to produce meaningful understandings of what things are and how they function, despite the complexity and conditionality of their subject matters (Schatzki, 1996; Van Maanen, 1995).

7. Paper summaries

The present chapter contains overviews of the four sub-studies, reported in Papers I–IV, that the current work is based on. The sub-studies are simultaneously singular and co-dependent; they are stand-alone research projects that represent cumulative steps in the exploratory process of inquiry that has sought to answer the current study's research questions. The first sub-study establishes a conceptual framework for the first and second sub-studies to work within. The second and third sub-studies offer field-based investigations of documentary practices of videogame communities in social-media environments, holding a focus on documentation and memory-making (II) and knowledge production (III) respectively. The fourth sub-study contains a review of priorities, methods, and conceptions in the videogame-preservation literature and thus provides the opportunity to situate the results of the preceding papers in this context.

7.1. Paper I. Tracing traces: a document-centred approach to the preservation of virtual world communities

The paper takes a starting point in that the successful safekeeping of materials in the ALM sector fundamentally rests on sufficiently developed understandings of the objects-to-be-preserved and the extent to which such insights are set to inform the choice, application, and—in certain circumstances—development of suitable preservational methods (Cook, 2001; Kirschenbaum, 2012, p. 20; Mortensen, 1999; Schwartz and Cook, 2002). The implication of this line of reasoning is that new types of materials, where a lesser degree of applicable knowledge and established modes of work relating to the ways of their safekeeping exists, presents significant challenges for the institutions of the ALM sphere and their efforts of preservation. As pointed out by Brügger (2012), Galloway (2005), Snickars (2010), and others, this situation is often the case where digital objects are concerned. It is against this backdrop that the paper focuses on the preservation of the sociocultural dimension of videogames.

Paper I constructs a framework that can be used to fruitfully theorize the roles and functions of social media in videogame communities. It contributes

to the understanding of videogame-community social life and, indirectly, to the methods of their preservation. The impetus to put the intersection of videogame communities and their social-media environments at the center of investigative attention was found in the literature, where several studies have pointed to the importance of such platforms in communal forms of online sociality (e.g., Hine, 2000; Lowood, 2009; Rehn, 2001). The framework was formed by a synthetically and conceptually oriented analysis of literature on the topics of videogames and videogame communities (e.g., Boellstorff, 2008; Pearce, 2011), videogame preservation (e.g., McDonough, et al., 2010), practice theory (e.g., Reckwitz, 2002b; Schatzki, 1996), and document studies (e.g., Buckland, 1997; Lund, 2010; Frohmann, 2009).

The paper shows that there are analytical merits to theoretically approaching videogame-community social media and the practices they display not as passive repositories of documentation or the by-products of online communication, but as nexuses of documentary practices where important aspects of community social life (knowledge, viewpoints, norms, shared ways of performing tasks) are negotiated, reproduced, and modulated. This viewpoint suggests that the social-media ecosystems of videogame communities are highly valuable sources of documentation of the sayings and doings and dynamics of such groups, and that their preservational priority should be of the higher order. Before any further theoretical and practical contributions to videogame preservation can be made, additional research-based insights into the documentary practices through which documentation is produced by videogame communities in their social-media environments are required. Papers II and III answer these calls for further research.

7.2. Paper II. Documenting virtual world cultures: memory-making and documentary practices in the City of Heroes community

Paper II examines how videogame communities employ social-media services to document their past, including that of the videogames they are engaged in. By doing so, the paper contributes to the understanding of the interplay between how videogame communities document their past in social-media environments, and how such documentation informs present activities in the community. Additionally, the paper shows how videogame-community memory-making is jointly shaped by the affordances of social media and community documentary practices. The study is an interpretative analysis (Charmaz, 1983; Glaser and Strauss, 1967) of the activities of the MMORPG City of Heroes (CoH) community on the /r/cityofheroes discussion board on Reddit. The study analyses the activities carried out on, and the materials posted to, the discussion board during a period of seven months. Approximately in

the middle of the period of study, CoH was taken offline. The notion of documentary practices and perspectives offered by memory research (Bowker, 2005; Featherstone, 2000; Featherstone, 2006; Halbwachs, 1992; Nora, 1989; Walsh and Ungson, 1991) are the principal theoretical tools.

The study showed that five principal types of representations of CoH's past were documented on /r/cityofheroes. These depicted CoH through the lenses of (i) the audiovisual elements that made up the CoH game world; (ii) the experiences of its players; (iii) the videogame industry; (iv) CoH's lore and story arcs; (v) the game mechanics of CoH. A great range of topics and perspectives that were recorded on the discussion board during the period of inquiry. While it is made clear that documentation on /r/cityofheroes was created to fill a broad variety of purposes, the analysis highlights the active role that the historical documentation played in the community's presently ongoing process to deal with the closing of CoH. Most notably, depictions of the game's past informed community post-closing projects, different forms of activities aimed towards protesting the demise of CoH, and strategies to ensure that community social life on /r/cityofheroes continued. The prominence and complexity of documentary practices of memory-making on the discussion board may be explained with reference to the end of CoH, and event that defined most interactions observed during the study both before and after the game was taken offline. Judging by the intense activity on the board also four months after CoH's closing, it can be hypothesized that the community's documentary practices of memory-making detailing bygone events and phenomena, played a role in the sustenance of the community. /r/cityofheroes offered an opportunity to connect to CoH and the experience of being a player, even though the virtual world itself had become inaccessible. It can be concluded that the Reddit discussion board under study functioned as something akin to a 'lieux de mémoire' (Nora, 1989)—a site where memory is embodied—of the CoH community by retaining community-produced documentation produced with varying means and to various ends.

7.3. Paper III. Getting-to-know: inquiries, sources, methods, and the production of knowledge on a videogame wiki

Paper III investigates videogame-community knowledge production in social-media environments on the basis of a three-month ethnographic examination of the Dark Souls Wiki (the DSW). In focus of the analysis were the boundaries and knowledge aims of the DSW, together with how its contributors organized inquiries and used various sources, methods of investigation, and ways of warranting knowledge claims. Theoretical perspectives were drawn from inquiries that knowledge production as enacted in practice (principally

Knorr-Cetina, 1999; see also Becher, 1989; Latour and Woolgar, 1979; Orlikowski, 2002), and document studies (e.g., Brown and Duguid, 1996; Frohmann, 2004b). Material was collected by participant observation and by gathering data from the site. The study's fundamental scope and methodological outline were influenced by Geertz (1993, p. 5–10) and works on the application of ethnography in the study of online phenomena (e.g., Gatson, 2011; Hine, 2000; Markham, 2013). The more specific methodology employed in data collection was the so-called 'trace' or 'database' ethnography, developed and showcased by (among others) Geiger and Ribes (2011) and Schuurman (2008).

Paper III analyses and describes how the documentation and structure of the DSW are the product of a historically situated knowledge culture. The results indicate that the DSW's knowledge culture can be summarized in five key points of abstraction. Firstly, the DSW knowledge culture was externally bounded by the limits of the site, and knowledge production was independently conducted. Secondly, the principal aim of the DSW enterprise was to create and maintain a resource of documentation that satisfactorily met the standards and specifications established by the wiki contributors themselves. This work rested on the production and recording of knowledge claims concerning the appearance and functioning of the games in focus. Thirdly, knowledge was dominantly defined as being necessarily derived from certain observations qualified to be presented on what by the DSWians considered to be the 'wiki proper'—the article pages. Fourthly, the characteristics of the two most commonly used platforms in DSW-knowledge work—Dark Souls II (DS2) and the DSW's MediaWiki infrastructure—had a large impact on knowledge production on the site. Fifthly and finally, the study of the DSW shows that the apt metaphor for describing the production of a videogame wiki is not as 'a singular communal process,' but rather as 'groups of activities set in stages.' Four major (interrelated) factors were found to influence knowledge practices on the wiki: (i) the structures and modes of work established by the community's earlier wiki efforts; (ii) the principles and priorities that informed wiki knowledge practices; (iii) the characteristics of the videogame in focus of the site's knowledge-building efforts; (iv) the extent and types of relevant information provided by videogame industry, the videogaming press included.

7.4. Paper IV. Understanding the 'expanded notion' of videogames as archival objects: a review of priorities, methods, and conceptions

Paper IV explores what the 'expanded notion of videogames' (the EN) of videogames is from the viewpoint of videogame preservation. The EN is a concept introduced to collectively refer to aspects of videogames other than software and hardware: game culture, cultural and social aspects including experience, play, and community social life and activity (see 1.5: *A note on terminology*). The paper investigates how varying conceptions and definitions of the EN of videogames inform preservational practice. More specifically, the paper examines the overarching motivations and drivers for videogame preservation, and shows how the EN of videogames is construed in the videogame-preservation literature by investigating patterns of motivations and drivers, selection of content and materials, and methods of preservation. The study is a critical systematic literature review (Grant and Booth, 2009) of publications originating from a broad range of academic disciplines and videogame-preservation projects. Content analysis (Krippendorff, 2004) and writings on the method of systematic literature reviews (e.g., vom Brocke, et al., 2009; Webster and Watson, 2002) inform the paper's theoretical and methodological approach.

Paper IV shows that the EN of videogames is construed in three principal ways in the reviewed archival literature. (i) The EN as understood to be an essential part of the videogame as an archival object. Successful efforts in the area of videogame preservation must, in this view, include elements of play and culture; the mere safekeeping of software and hardware is considered to be only a partial fulfillment of the fundamental aims of videogame preservation. (ii) The EN is posited as a useful resource in the preservation of videogames, able to provide documentation of game culture and social context. By preservation the EN of videogames besides the software of the games themselves, the resulting archival collection contains a wider potential for use by virtue of its more diverse content. More significantly, the presence or absence of documentation of context is directly related to the usefulness of the archived videogames as it affects their interpretability. (iii) The EN is described as a useful resource in inquiries focused on the current state and recent history of society and culture from a socio-technical viewpoint. Videogame culture and memories of playing games are useful sources of documentation on the history of personal computing and the sociotechnical developments that led up to the role of digital technology in contemporary society and culture.

The findings suggest directions for future work that hopefully will prove to be a resource for empirical research and meta-analysis in the area of videogame preservation in academic, professional, and player communities. The proposed directions for further empirical and conceptual study are videogame

community dynamics, videogame ontology, the development of archival the-
ory, and videogame-archive studies.

8. Discussion

This study set out to examine how online videogame communities are entangled with the social-media services they employ, and from there to suggest some implications for socioculturally-focused videogame preservation—a pressing matter that deserves research attention. The purposes, aims, and research questions of the current study were pursued on the basis of four sub-studies (Papers I-IV: Sköld, 2013; Sköld, 2015; Sköld, 2017; Sköld, 2018; see Tables 1, 2, 3 and Chapter 7: *Paper summaries*). These sub-studies use multiple methods and encompass several empirical sites of inquiry. The present study is both in its entirety and in its parts positioned in the qualitative and interpretative paradigms. In proceeding from the asking of research questions to planning, fieldwork, and analysis, the study was inspired by the framework of exploratory research (Stebbins, 2001), which proposes a goal-oriented yet flexible and reflective approach to research design, and of 'bricolage' research strategies (Denzin and Lincoln, 1994). Data analysis and coding in the present work took impression from grounded theory (Charmaz, 1983; Glaser and Strauss, 1967), including the method of constant comparison (Corbin and Strauss, 1990, p. 9). The theoretical dimension of the study is comprised of a series of perspectives with varying functions and levels of theoretical operations (Table 2). Writings on practice theory and the nature of archival work make up the core of the theoretical toolset, which is complemented by research focused on documentation, knowledge production and memory-making.

This chapter seeks to outline and discuss the main findings of the current study in a more thorough and contextualizing manner than in Chapter 7: *Paper summaries*. The remainder of the chapter is structured as follows. The first section of the discussion is ordered by the study's research questions. Here, the purpose is to show how the study's aims have been met by highlighting main results and putting them into context with previous research. Subsequently, the discussion will move on to outline the wider implications and contributions of the study. The final part of the chapter consists of a concluding discussion and recommendations for future research.

8.1. The production of information in videogame-community social media

Earlier studies have only tangentially treated the important relationship between videogame communities, videogame play, and the social-media environments of videogame communities (Crawford, 2012; cf. Boellstorff, 2008; Harrison, 2009; McDonough and Olendorf, 2011)—with some important exceptions (including Barr, 2014; Newman, 2008; Newman, 2012a; Sköld, et al., 2015). Inversely, the present study put into focus the manifold activities of information production that make up a large part of the common on-goings that take place in videogame-community social-media environments—the linking, liking, and strategizing; the discussions, small talk, and writing of analyses; the storytelling, and image and video uploads to mention a few examples. The study aimed, *firstly*, to theorize and subsequently develop an understanding of how the shape and form of videogame-community social media are linked to the contexts and modes of information production by which they emerge. Such activities of information production were framed theoretically as documentary practices, and empirically investigated in the context of two processes of importance in community social life: memory-making and knowledge production. The study's first aim was pursued on the basis of the following set of research questions:

1. How are videogame-community memory-making and knowledge production enacted in practice?
2. How are videogame-community memory-making and knowledge production configured by the characteristics of the social-media environments in which they are carried out?

Next, it will be shown how the study's first aim was met, and how RQs 1 and 2 were answered. RQ 2 is revisited in Section 8.2.1: *Aspects that impacted the shape and form of videogame-community social media*. Guided by the study's first aim and its explorative research ethos (Stebbins, 2001), the first point of discussion is how the entanglement of videogame communities and their social-media environments was approached theoretically. The discussion will then move on to focus on how videogame-community memory-making and knowledge production were enacted in practice, and how these practices were influenced by the social-media spaces where they were performed.

8.1.1. The documentary-practices framework

The first step in the investigation of RQs 1 and 2 was to develop a suitable theoretical framework. The aims and RQs of this study demanded that this framework be of wide and fruitful applicability in the analysis of community activities in social-media settings: from the constitution of social reality, to

community dynamics and the analysis of specific types of communal efforts—i.e., memory-making and knowledge production. At the most abstract level, it would have to be able to encompass all activities of information production (text, image, video) whatever their formative intent (communication, discussion, creative outlet) and connect them to the situated configurations of their communal context of production, the functional characteristics of the social-media services that support them, and the discursive fields of LIS and archival studies. A framework centered on documentary practices was created based on practice-theoretical writings (e.g., Barad, 2007; Gherardi, 2012; Nicolini, 2013; Schatzki, 1996; Schatzki, 2001; Shove, et al., 2012), research on documentation (e.g., Berg, 1996; Brown and Duguid, 1996; Buckland, 1991b; Buckland, 1997; Buckland, 2017; Frohmann, 2004a; Law and Lynch, 1988; McKenzie and Davies, 2010), and inquiries exploring how the trace-generating and database-like functionalities of social media can be employed in the study of online and communal activities (e.g., Geiger and Ribes, 2011; Schuurman, 2008; Hine, 2000; Rehn, 2001). The documentary-practice approach was developed in Paper I and in the introduction to the study. Parts of the framework dedicated to memory-making and knowledge production was reported in Papers II and III respectively. The framework constitutes one of the results and contributions of the current work.

The basic units of analysis in the documentary practice-framework are documents and practices with documents. The focus on documents foregrounds a material conception of information, i.e., documents are manifestations of recorded information. In the social-media environments of videogame communities, documentation abound—text posts, images, videos, up-votes, and down-votes are ubiquitous. Practices are embodied, organized, and situated systems of activity (bodily movements, use of objects and technological environments, mental and discursive activities) that constitute the basic component of human social existence and consequently the ground zero of analytic attention in social research (Gherardi, 2012; Nicolini, 2013; Schatzki, 1996; Schatzki, 2002; Shove, et al., 2012; see Chapter 5: *Theory* for a fuller description of the notion of practice as it is employed and developed here). The practice lens provides the theoretical tools to analyze the social and material features of videogame communities as grounded in the ongoing accomplishment of coordinated activity by its members. Documentary practices are a subset of videogame-community practices that bear meaningful and substantial connection to the types of documentation that exist in videogame-community social media, for instance regarding production, use, ordering, and dissemination. The study of videogame-community documentary practices is hence the study of how the dynamics of community social life are interlinked with the breadth of social media-based community everyday activities and processes, and the documentation produced as these activities are carried out.

The documentary-practices framework offers the following characteristics, which taken together makes it useful for the study of how videogames and

116

other topic-centered online, in the terms of Jenkins (2008; 2013), 'fan' communities are entangled with their social-media environments—especially in the disciplines of LIS and archival studies.

Adaptability. The framework theorizes the relationship between online communities, the social-media services they employ, and the community documentary practices that shape and form these social-media environments. This renders the framework adaptable to fit varying research interests. Examples of how the framework can be modified are given in Papers II and III, where analyses of memory-making and knowledge production as conducted by videogame communities in wiki and discussion forum environments are performed using the framework.

Conceptual affinity. The focus on documents is well established in LIS research and bears affinity to the archival sphere via its closeness to 'records' (Yeo, 2011). This disciplinary affinity is important because it brings the complex of online-community social-media as sites of empirical research into contact with the concepts, core sets of questions and research interests, and theoretical perspectives of LIS and archival studies. The document focus also provides connections to relevant research in workplace studies and organizational sociology (e.g., Berg and Bowker, 1997; Berg, 1996; Harper, 1998; Riles, 2006a) Such juxtapositions has rarely been performed previously and it has the potential to generate theoretical and conceptual innovation, as well as to inform new empirical investigations.

Scalability. The bridging of practice theory and the document studies tradition allows for the framework to be highly scalable; it allows multiple types of practices in multiple types of social media to be analyzed together, and it has the capacity to describe and explain how these practices connect to features of the community that enact them, like community emergence and membership, social change and stability, use of materials and infrastructure, industry relationships, productive efforts, et cetera.

Specificity. The framework is drawn together with the intent to succor the study of how online videogame communities are entangled with their social-media environments, and to be able to include in the analysis community practices and the functionalities of the environments in which they are enacted. A fundamental purpose of the framework in the context of the present inquiry is to further the matter of socioculturally-oriented videogame preservation. One of the contributions of the framework is the impetus to move away from representational thinking in the study of the practices of online communities in social-media environments. With inspiration from Barad's (2007; see also Chapter 5: *Theory*) writing on the notion of 'intra-action,' activities and articulations in online-community social-media spaces are suggested to be socially meaningful—which is shown in Papers II and III—by virtue of the entanglement of social activities and the social-media technology in this context. This perspective differs markedly from a view where social activities become meaningful in community social life because they are mediated or otherwise

represented by social-media platforms. This conceptualization furthers the understanding of both the relationship between videogame communities and the social-media spaces they employ and, by more precisely suggesting what kind of archival objects these varieties of community-produced documentation are, socioculturally-oriented efforts of videogame preservation.

The perspective of documentation-in-practice informed the subsequent investigations of memory-making (Paper II) and knowledge production (Paper III) in videogame communities. From the viewpoints offered by the concept of documentary practice, knowledge production and memory-making in videogame communities emerge in, transpire through, and are analyzable via the documentary practices enacted in the communities' social-media environments. The results of Papers II and III will be summarized and discussed below.

8.1.2. Memory-making

The theoretical approach towards the study of memory-making and knowledge production as conducted by videogame communities in social-media environments recognizes that they are constituted by and enacted through ('anchored in,' see Swidler, 2001) documentary practices.

The study of videogame-community documentary practices of memory-making took place during a period of seven months on /r/cityofheroes, a discussion forum dedicated to CoH. The studied timeframe was defined by an announcement made by the CoH's publisher on the first day of inquiry: the game was being shut down in three months' time and would thereby become inaccessible to its players. There was a two-fold impetus for the choice to study memory-making in videogame communities. Memory plays an important role in how social entities of any kind function (individuals, communities, nation states, organizations; Anderson, 1991; Bowker, 2005; Featherstone, 2000; Featherstone, 2006; Walsh and Ungson, 1991), and previous research on memory-making in videogame communities is scarce. Thus, to explore how videogame-communities engage in memory-making in social-media environments is relevant for the purposes of this study and for the general understanding of the role of documentary practices in the social life of the communities of videogames. The second impetus was the high degree of CoH documentation that was posted to /r/cityofheroes after the announcement of CoH's demise; memory-making was, during this particular timeframe, something that engaged a lot of community members.

The study showed that memory-making was enacted in (documentary) practice by the community on /r/cityofheroes in the following way. The posting of and commenting on a wide variety of materials that documented current or past states of CoH constituted an important part of the CoH community's documentary practices of memory-making on /r/cityofheroes. Five principal representations of CoH were documented on the site. CoH was recoded as a

118

game world via the uploading and linking of images—commonly screen captures—audio, video, and only rarely text. CoH was depicted as an audiovisual space composed of landscapes, buildings, and items, and inhabited by players and non-player characters involved in exploration, combat, or other interactions. The absolute majority of the documentation of CoH as a game world included metadata, e.g., the name of the place where a screen capture was taken, or the name and skill specializations of showcased player characters. When missing, metadata was often provided by the community in a short timeframe. The study also found that CoH was documented from the viewpoint of *player experience*. This was done through the sharing of stories, narratives, or glimpses of activity from player's in-game CoH experiences, or how CoH was intertwined with non-play aspects of life. The types of experiences that were most prominent included memorable moments of gameplay from the perspective of the player, and storytelling and reminiscing related to situations and events that many players are familiar with, like seasonal events. Another category of documentation depicted CoH as a *product* and a part of the videogame industry. It contained stories of consumption—how players first came to purchase the game—and comparisons between CoH and other MMORPGs available on the market. With reference to the game's demise, CoH was depicted as a competitive and economically viable product (on the basis of its customer base, market value, and strength of the brand name) whose closing was seen as unethical and bad business practice. CoH was furthermore documented as a site of lore, story arcs, and other narratives. This *narrative dimension* of CoH was also recorded via the posting of popular sayings and memes, and involved members seeking (and promptly receiving) expositions of lore or narrative from the community. The last of the principal representations of CoH that were recorded on /r/cityofheroes focused on the game's rules, and how these rules determined the *mechanics* of different aspects of gameplay like combat and in-game communication. A theme in this documentary category was that CoH was set above its competing MMORPGs by virtue of the quality of its gameplay mechanics.

The study of /r/cityofheroes showed two main memory-making functions, the first being to make images of CoH's past tangible in the form of audiovisual documentation, from the horizon of player experiences, as a system to be played, or as a product existing in, and being influenced by, relationships to the videogame industry. Participation in this memory-making instance emerged as a way for the CoH community to ensure an access of sorts to the videogame also after it went offline. Secondly, memory-making on /r/cityofheroes also functioned as a way to frame the present by using depictions of things past. The most prominent use of CoH's past on /r/cityofheroes was the depiction of CoH as an exceptionally good MMORPG in terms of its game mechanics, narrative qualities, and as a source of personal enjoyment. CoH was furthermore portrayed as being economically viable and unique; docu-

mentation of player experiences and CoH's mechanics often involved conclusions determining that no other videogame had the potential to be a satisfactory replacement for CoH. These representations of CoH's quality, uniqueness, and value as a product on the videogame market formed a means to garner of support for community action vis-a-vis the game's publishers and the decision to close down the MMORPG. In this capacity, the past was mobilized and embodied via documentation such as imagery, text, audio, and video, and used to depict CoH's current situation and to legitimize protests or other initiatives seeking to safeguard the community's access to the MMORPG.

8.1.3 Knowledge production.

The study of videogame-community practices with documentation proceeded to focus on knowledge production. The inquiry was carried out on the DSW, a wiki dedicated to the Dark Souls series, during a period of three months. The choice to examine how knowledge production was enacted in documentary practice was motivated similarly as the decision to study community memory-making: knowledge production is an important aspect of community social life, and videogame-community knowledge production has received only limited research attention (exceptions include Barr, 2014; Golub, 2010; Steinkuehler and Duncan, 2008). Efforts of knowledge production were omnipresent on the DSW during the entire period of inquiry. The study started on the day before the release of DS2, an event that resulted in high levels of activity when the contributors to the site (the DSWians) rallied to explore and document DS2 while simultaneously managing the wave of new wiki contributors flocking to the site in the wake of the game's release.

   The study showed that knowledge production on the DSW was enacted in practice in the following manner. The study observed how the DSW functioned as a bounded setting of knowledge production in the videogame domain, and how the DSWians organized inquiries, utilized different methods and means, sources, and procedures of knowledge warranting as a means to turn the DSW into a comprehensive documentary resource built to the specifications set by the community. The DSWians often expressed that the knowledge-building project of the DSW was distinguished from related work in forums and strategy guides by virtue of aiming to provide well-sourced and easy-to-navigate documentation using simple diction and highly standardized article and metadata structures. Importantly, all documentation of DS2 was to be produced by the DSWians themselves. To source texts, images, et cetera from other Dark Souls wikis or other websites was hence not allowed by the rules and policies of the DSW. Within the boundaries of these rules and policies, knowledge production was mainly unregulated—though smaller groups of usually senior wiki contributors pursued more organized efforts—and proceeded from the interests and prioritizations of the individual editor. Editing patterns were discernible, however: as the documentation of simpler aspects

of DS2 began to become complete, the focus of the DSWians shifted towards more complex matters which often required more advanced investigative methods. Similarly, the use of sources changed during the course of the study as new ones became available.

The study also found that there were four major shaping factors that impacted the modes of knowledge production practiced on the DSW. The first factor is the structures, priorities, and policies that informed the DSWians analyses and documentation of earlier Dark Souls games. Almost without exception, knowledge production related to DS2 followed the same strictures. An illuminating example here are the standards regulating article and metadata structures of DS2 documentation on the site, which to a significant extent were modeled after already-existing structures and not by the characteristics of DS2. The second factor was the modes of inquiry, sourcing, knowledge warranting, and choices of methods that configured knowledge production on the site. An influential instance of this factor was the criterion of verified knowledge. There was wide consensus on the DSW regarding that documentation of DS2's various aspects should be derived from direct observation. Conclusions produced by more interpretative approaches were not allowed to be presented in the article space of the DSW. The characteristics of the videogame in focus of the DSWians' efforts is the third factor that greatly impact the modes of knowledge production observed on the site. The Dark Souls games by design present the player with little information regarding what to do, where to go, or how game mechanics function. The information-starved environment of DS2 reduced the efficiency one of the DSWians most employed methods of investigation—to play and to record—and forced them to consult other sources, employ other methods and was, ultimately and plausibly, the reason to adapt the aims and procedures of the DSW knowledge-building project to fit this state of affairs. The final major shaping factor was the videogame industry. All information that was provided by the publishers and producers of DS2, for instance, interviews or the strategy guide mentioned above, was approached by the DSWians as 'canonical' and was presented on the wiki as is and without critical examination or discussion on the DSW. The activities of DS2's publishers and producers hence greatly impacted how DS2 was documented on the DSW.

8.2. Videogame-community social media and the socioculturally-focused preservation of videogames

The *second* aim of this study is to operationalize the acquired insights into videogame-community documentary practices in social-media environments in such a manner that it can benefit the area of socioculturally-focused videogame preservation. The research questions addressed are:

3. What is the current state of socioculturally-focused videogame-preservation research in terms of priorities, methods, and conceptions?
4. How can the deepened understanding of information production in videogame-community social media inform preservational efforts directed towards the sociocultural elements of videogames?

The view of archival work that informed RQs 3 and 4 posits successful preservational ventures as dependent on insights into the object that is to be preserved, and "the nature of its task" (Mortensen, 1999, p. 15). RQ 3 in answered below, and RQ 4 in Section 8.2.2: *Implications for videogame preservation*.

RQ 3 was pursued on the basis of a critical systematic literature review (Grant and Booth, 2009) of publications pertaining to the subject of socioculturally-focused videogame preservation. The review set out to investigate what motivation and drivers underpinned such preservational efforts, what content and types of materials were considered to be of priority, and what procedures were deemed effective. The review showed that the preservation of the sociocultural dimensions of videogames were carried out (and written about) by different actors with different interests, resources, and preferred procedures, and were driven by varying motivations and understandings of what a videogame is and what aspects of it are important for preservational purposes. Three core conceptions of videogames' sociocultural aspects emerged: (i) The sociocultural dimensions of videogames cannot be separated from the videogame software; they are a key significant property of videogames that should be represented in videogame archival collections. (ii) The sociocultural dimensions of video-games can provide documentation of the context of videogames; they are a resource in videogame preservation in as much as they provide videogame software collections with a wider potential for use. (iii) The sociocultural dimensions of videogames are important to preserve because they are telling of contemporary society and its recent history and development.

The review furthermore found that four main approaches were used, or suggested to be used, in the advancement of videogame preservation of this particular focus: conceptual work, collaborative planning and activity, adaptive measures oriented towards videogame software, and the collection of 'context materials.' The most prevalent category of context materials was that which is in focus of the current study: the social media produced and used by videogame-communities like forums, blogs, and wikis. A number of studies however expressed concern regarding this strategy, and simultaneously underlined the relevance of the current study. Connecting to the discussion of the prerequisites of archival work above, the concerns center on the need to further explore how videogame-community social media are created and used. Winget and Murray (2008a, p. 4) write that it would be beneficial for "archivists, cu-

rators, and conservators [to have] a deeper understanding of the general creation behaviors and methods" of the people that produce videogame-community social media. Winget (2011b, p. 68) expresses similar observations and propose a number of directions for future research, including investigations seeking to find out if such "materials perform some specific function" in the context of the videogame in question, and how they "used after the game closes, or the players are no longer active"; McDonough and Olendorf (2011) point to the need to attain insights into what materials to select in the collection of context materials. Based on the investigations of how documentary practices constitute memory-making and knowledge production in the communities of the DSW and /r/cityofheroes, the current study addressed these concerns by providing insights into how the shapes and forms of videogame-community social media are linked to the modes of production and use by which such sites emerge.

8.2.1. Aspects that impacted the shape and form of videogame-community social media

In order to operationalize the acquired insights into videogame-community social media in such a manner that can benefit the area of socioculturally-focused videogame preservation (the EN, see Paper III), it is necessary to move beyond the identification of practices and delve into some commonalities and dissimilarities between the documentary practices observed in the two field sites, putting the findings into dialogue with the reflections and conclusions of previous research. An initial observation based on the results of the present study is that videogame-community documentary practices are performed with similarly high degrees of expertise as has been indicated by earlier studies (e.g., Barr, 2014; Steinkuehler and Duncan, 2008). The community-produced documentation on /r/cityofheroes and the DSW is generally comprehensive and complex, and is in many scenarios vetted, expanded upon or corrected by other members of community than the original poster. Videogame-community social media played several of the important roles outlined in literature exploring the 'social life' of documentation: they served as places for people to gather around, and they were a part in the establishment of community boundaries (Brown and Duguid, 1996; Frohmann, 2004b; Huvila, 2011); they facilitated and influenced community memory-making and knowledge production (Bowker, 2005; Frohmann, 2004a) and functioned as places of embodied memory (cf. Nora, 1989); they had a mutually shaping relationship to the community they pertained to, and its historical and sociocultural context (Berg, 1996; Law and Lynch, 1988).

The social-media environments of the communities studied in Papers II and III developed on the basis on the local configurations of documentary practices that were exercised there. The principal commonalities of these practices are discussed below.

8.2.1.1. Material arrangements

Schatzki (2001) and other practice theorists (Feldman and Orlikowski, 2011; Gherardi, 2012; Gherardi, 2016; Nicolini, 2013; Orlikowski, 2002; Orlikowski, 2007) stress that analyses of practices must take the material arrangements of the site under study into consideration. The current study has reflected this analytical impulse and reinforced its relevance. The documentary practices of memory-making and knowledge production in the CoH and DSW communities were significantly configured by material arrangements of two kinds: the social-media platforms through which the practices were carried out—Reddit and MediaWiki respectively—and the videogames in focus in the communities. The platforms share some impactful features, most prominently the way in which they simultaneously record and make searchable a large part of the practices performed there. This resulted in patterns of social interaction where activities performed to other ends and in other times than the current also could become a part of the communal processes of memory-making or knowledge production. MediaWiki and Reddit however differ in many respects, and thus had contrasting affordances for the documentary practices of the studied communities. The study of /r/cityofheroes suggests that the low amount of collaborative efforts and the large proportion of posts consisting of links or images may be partly influenced by the design of the platform. On the DSW, the practices of documenting DS2 tended to institute similarities in the resulting documentation—rather than to produce differences, a common characteristic of knowledge production in the sciences (Knorr-Cetina, 1999)—between various occurrences in the videogame, and showed correspondence with what is known about knowledge production on Wikipedia (Jemielniak, 2014; Sundin, 2011). These observations can be explained with reference to the toolset offered by MediaWiki (tags, categories, templates), Wikipedia's shaping influence on how work on other wikis is conducted (Mittell, 2009; Mittell, 2013), and the fact that the DSW uses the same, although differently configured, social-media platform—MediaWiki.

While the mutually shaping relationship between practices and the social media through which they are enacted has been previously noted (e.g., by Geiger and Ribes, 2011; Hunter, 2011; Mittell, 2009; Mittell, 2013), few mentions have been made concerning how the videogame in focus of a videogame community impacts their documentary practices and, consequently, how videogame-community social-media environments are shaped. Two aspects of the interaction between videogame and documentary practices were discerned: the characteristics of the videogame and the current stage of its life cycle. The former aspect was explored in the study of the DSW, where the obscure nature

of DS2 forced the DSWians to adapt both procedures and the ends and direction of the knowledge-building project in its entirety. The inquiry into /r/cityofheroes illuminated how the life cycle of videogames impact community social media. In this specific instance the ending of CoH triggered widespread memory-making activities which in turn informed community protests. Research furthermore indicates that significant changes taking place mid-life cycle also can result in wide ranging community memory-making activities (Sköld, 2011).

8.2.1.2. Videogame play and documentary practices

The results of the present study strengthen the argument that the porous boundary between videogame play and participation in community documentary practices in social-media spaces should be noted and recognized in videogame research (cf. Newman's, 2008, p. 13, distinction between *playing* videogames and playing *with* videogames). Generally, the DSW and CoH communities showed many shared characteristics with Jenkins' (2006) notion of participatory cultures. Community members acted in a critical and creative manner. Documentary practices in social-media environments emerged as being a part of videogame play for the members of the studied communities, as previously noted by Pearce (2011), Taylor (2006), and Boellstorff (2008).

The present study also provides several results that serve to shed further light on the porous boundary between videogame play and participation in documentary practices on videogame-related social media. Gameplay was an important element of knowledge production on the DSW: the videogame itself was one of the pivotal sources of information in the work of the DSWians, and videogame play was the fundament of several important knowledge-production procedures. The present study also indicates how practices in videogame-community social media influence play, a connection hypothesized by Newman (2011) and Bullard (2013). Many players came to the DSW asking questions—thus often inciting investigative gameplay if the answer was unknown—and expressed how documentation on the site informed the way they played DS2. Reminiscent of Pearce's (2011) analysis of feedback in web environments and its importance for the emergence of social phenomena, the posting of CoH documentation on /r/cityofheroes seemed to lead to more community members logging into the game, capturing video and taking screen captures, and then sharing them on the discussion board. The documentary practices of the CoH and DSW communities differently illustrated how (non-gameplay) activities of play have an effect on how videogame-community social media are configured. Memory-making on /r/cityofheroes included multiple instances of the acts of appropriation that Jenkins (2006) calls 'poaching,' which he views as a key interaction in participatory culture. Much of the texts, images, videos that documented past events, places, and characters in CoH were annotated or presented as a part of fan writing efforts or the sharing of

personal history. Any such ways to contextualize documentation were vigorously counteracted on the DSW, where ludic representations of DS2 were deemed to be of higher priority than any articulations of narrative or personal dimensions of gameplay.

8.2.1.3. Organization, regulation, and videogame-industry relations

The documentary practices of the CoH and DSW communities, and consequently the manners in which they impact the shapes and forms of /r/cityofheroes and the DSW, were tied to community organization and regulations. Jenkins (2008, p. 57) wrote that the emergence and disbandment of 'fan' communities are tied to the pursuit of common interests. In the practice-theoretical lens, community membership is dependent on the participation in the practices of the community. These correlative analyses hold true also in relation to the results of the present study. The release of DS2 caused a rise in activity on the DSW, which can be interpreted as a reflection of the fact that the release gave many players the opportunity to actualize their interest in playing the game by participating in community practices. The study of /r/cityofheroes provides and interesting observation of relevance here. When CoH was taken offline, activity on the Reddit discussion board continued for at least the duration of the study (four months). It can be supposed that the ends of community documentary practices shifted during the study's seven-month time span, from being centered on CoH gameplay to ensuring continued or future access to the game, and reminiscing. This observation is in line with what Shove, et al. (2012, p. 97) write about the evolution of practices: "[i]t is obvious that past performances create and limit opportunities for future development."

Previous research on productive videogame communities have offered differing descriptions of their organization and regulation. Jenkins (2006; 2008), drawing on Lévy (1997), depicts fan community productive activities as principally collective in nature, procedurally diverse, and non-hierarchic in terms of organization and the statuses of different modes of production. Mittell (2009); Mittell (2013) and Toton (2008) on the other hand argue that a process of polarization is implicit in the productive ventures of fan communities, where certain aspects of fandom are deemed more important and relevant than others. The communities of CoH and the DSW proved to be interestingly different in terms of their organizations and their regulation of documentary practices. The CoH community did not have any assigned roles or responsibilities. Furthermore, no regulative attempts were observed despite the wide variety of documentation that was posted to the site. The DSW is a contrasting case: it was more organized and significantly more regulated, and documentary practices on the wiki were afforded different values. Although the site's forum section could see a wider variety of fan production and different perspectives being voiced, the collective effort of documenting DS2 was led by a smaller

group of active contributors, moderators, and administrators, who also espoused increased codification of the DSWs hitherto unwritten rules and policies.

The present study also shows that the relationship between the communities studied and the videogame industry was an important factor in the regulation of documentary practices. The most obvious, but nevertheless important, example is how the decision to take CoH offline was followed by wide participation in community memory-making. Generally during the study of /r/cityofheroes, the activities of CoH's publisher and owner were one of the elements that affected the memory-making dynamics the most. On the DSW, the influence of community–industry relationships was more easily discernible in detail. Knowledge production on the DSW proceeded among similar lines found by Mittell (2013; 2009) and Toton (2008) in their research on fan-wikis: certain types of information from certain types of sources were equated to being 'fact.' Such sources, for the DSWians, were DS2 and materials that bore connection to the videogame's developers, like interviews, online posts, and DS2's strategy guide. The release of DS2's strategy guide, for instance, led to the revision of much of the documentation already in place on the wiki that had to a larger extent been based on interpretative efforts based on among other things knowledge of previous Dark Souls games and general videogame mythology.

8.2.2. Implications for videogame preservation

Videogame-archival collections are shaped by what archivists do and what archivists know—ranging from what items exists in the archive to how they are represented and contextualized. Videogames and videogame play are to a great extent important, fragile, and ephemeral. If future work (scholarly, videogame industry, other) pertaining to anything else than recently released videogames is to be possible to conduct systematically, the preservation of videogames and what has here been termed the sociocultural dimension of videogames must be actively pursued. The current study is based on the premise (previously investigated by Newman, 2008; 2012a and others) that a plausible way to preserve the sociocultural dimension of videogames is to collect documentation produced by videogame communities in their social-media environments. From an archival point of view, the advantages of videogame-community social media lie in their prolificacy and accessibility in combination with their qualities as documentation of community social life. This value, in turn, springs from how closely entangled social media and online videogame communities are and the wide array of practices that videogame-related social media hold documentation of. As shown above, the present study offers insights into how the shapes and forms of videogame-community social media are linked to the documentary practices by which they emerge. These insights

have the following implications for archival procedure and perspectives regarding the safeguarding of videogame-community social media.

8.2.2.1. Videogame communities and the fandom domain

The present research indicates that it is important for archivists to recognize the particular characteristics of videogame communities. Comparing the results of this study with research concentrating on other topic-centered communities (Baym, 2000; Jenkins, 2006; Jenkins, 2008; Mittell, 2009; Mittell, 2013; Toton, 2008), significant similarities emerge; social media are employed to, among other things, facilitate community practices, including collaborative knowledge production. In terms of the factors that shape community social media, the current study shows, however, that there are modes of production that distinguish videogame communities. This observation connects to arguments presented by Wirman (2007), who question Jenkins' (2006; 2008) blanket use of the fandom term on the basis of a study that shows forms of productivity exist that are specific to the videogame domain. While Wirman (2007) points to certain types of instrumental productivity as an example of an occurrence that differentiates videogame-community activity, the current study demonstrated how the interactability and specifics of the videogame at the center of community activity, in combination with its life cycle, impact the shape and form of the community's social-media environment.

8.2.2.2. Factors impacting videogame-community social media

As numerous previous studies have elucidated, social media are important sites of interaction for videogame communities (Golub, 2010; Newman, 2011; Pearce, 2011; Steinkuehler and Duncan, 2008; Taylor, 2006; Warmelink, 2014). The current study has reinforced this observation, and contributed additional insights into how videogame social media emerge as a result of community documentary practices. Abstracting from the above, key factors impacting videogame-community social media that have been identified during the course of this research are: the characteristics of the social-media platforms; the characteristics and life cycle of the videogame at the center of community attention; principal types of current and historical documentary practices that the community is engaged in (e.g., related to memory-making, knowledge production); how the community is organized and what regulations are involved in their activities; videogame-community–industry relations; the porous boundaries between videogame play and documentary practices in videogame-related social-media environments.

The overall picture that unfolds is that the collection of videogame-community social media is both an asset and a challenge for efforts of videogame preservation. Social media have the potential to provide context for and documentation of a wide array of sociocultural aspects of videogames, including community knowledge production and memory-making, and about how patterns of gameplay and videogame consumption emerge and are negotiated.

However, the present research also shows that there are many—and potentially rapidly changing—circumstances that are important for the interpretation for the social media themselves. This complexity illustrates that the preservation of videogames must be a composite effort, where the collection of videogame-community social media is flanked by for instance the building of software collections and application of adaptive measures.

The present research has taken a broad approach to the study of documentary practices in social-media environments. Preservational projects seeking to collect videogame-community social media may be advantaged by more closely considering which dimensions of videogame communities and their practices are of priority. As illustrated previously, the enterprise which the community in focus is invested in affect the documentation that is produced. To refer to the field studies that underpin this work, the DSW held more documentation of a ludological nature, while /r/cityofheroes had a greater proportion of documentation detailing narratological aspects.

8.2.2.3. The current state of socioculturally-focused videogame preservation

A part of the present research was to attain an understanding of the current state of socioculturally-focused videogame preservation (see Paper IV) and ongoing or completed initiatives of videogame preservation (see Chapter 3: *Videogame preservation*). These reviews also carry implications for future preservational efforts by providing insights into present procedures, perceptions, and knowing in the videogame-preservation arena. The reviews indicate that there is a widespread recognition of the importance of preserving sociocultural dimension of videogames. The reviews also present the most commonly occurring preservational motivations that underpin socioculturally-focused archiving ventures, suggested methods, prioritized types of material and content, and potential uses of the gathered material—all aspects that are of interest to consider in the planning stages of such initiatives.

Collaboration between institutions and videogame communities appears to be a potent approach to collecting videogame-community social media. The current study shows that videogame communities possess a considerable capacity and expertise regarding the production and annotation of many aspects of community social life and the videogame or videogames at the center of attention (Papers II, III, and Sköld, 2011). Collaborations between an institution seeking to preserve the sociocultural dimensions of videogames and a videogame community could assume a variety of forms. The community could be asked to provide materials on certain themes or of a certain significance (for the community), and metadata and metadata models could be sourced or receive input from members of the community (cf. Lee, et al., 2015a; Lee, et al., 2015b).

8.3. Concluding remarks

The 'information superhighway' (e.g., Gibson, 1984) and the 'electronic frontier' (Rheingold, 2000); the sense of newness and excitement that once perhaps worked to the benefit of such terms have today somewhat diminished (their evocative qualities notwithstanding, of course). Currently, the Internet and what goes on there is often approached as something that is both—or something in between—online and offline, physical and digital, everyday and emergent, and as something that bears continuity with older doings and states of affairs, and something of comparative newness. People with common interests formed communities long before the arrival of the web, and these communities have engaged in forms of what is here termed documentary practices as a part of community activity. Whether newly emerged or of older ancestry, the manifold activities that make up a large part of the everyday goings-on that take place in the social-media environments of videogame communities— the linking, liking, and strategizing; discussions, small talk, and analyses; storytelling, image and video uploads—have been at the center of this study. Time and effort have been devoted to trying to understand some of the ways in which such mundanities connect to dimensions of videogame-community social life, and to therefrom pry out some implications for videogame preservation, a pressing matter that deserves research attention and efforts of development. On the basis of this study, it is plausible to argue that online videogame communities are something that archival and scholarly projects should recognize as partly distinct from present-day online communities centered on other types of media and topics mainly because of the impactful and media-specific features of videogames outlined in the discussion above.

The current study makes several topical, conceptual, and interdisciplinary contributions. The study continues the work of Newman (2008; 2012a) and others by advancing the empirical understanding and theoretical framing of how videogame communities are entangled with their social-media environments, and how the structures and documentation present in such spaces are shaped by the documentary practices of the community. Furthermore, the current inquiry illustrates how an informed view of videogame-community documentary practices in combination with insights into how videogame communities carry out important community functions by engaging in social-media spaces hence, from the archival perspective, lend insights into the sociocultural underpinnings of, and the provenance and representational aspects pertaining to, the resulting documentation. More topical contributions include a better understanding of how videogames and videogame communities relate to the 'fandom' domain (television series, films, see Chapter 4: *Online communities and online community productivity*), how videogame communities enact memory-making and knowledge production in practice, and the formation of an overview of the current state of videogame-preservation research and procedure.

On a disciplinary level, the present study demonstrates how research in the sphere of ALM can be designed to draw on concepts, research questions, and theories native to multiple ALM disciplines and come to fruitful conclusion. This attempt has necessitated, to a certain degree, a multilayered construction of the theoretical perspectives, literatures, and so on, of this research work—resulting in more conceptual and empirical breadth. In fact, the research course pursued in this study would not be possible without such a maneuver. Also, the present inquiry has made contributions that show the relevance that the disciplines of LIS and archival studies hold in the scholarly overall venture to grasp how everyday online scenarios and articulations are interwoven with human practice and technology, especially in the large and influential videogame domain.

This study suggests future research pertaining to the themes of archives, players and the study of videogame-community social media. Inquiries into what motivates players to participate in videogame-related social-media documentary practices, and how players identify themselves as part of communities, would greatly benefit the line of study represented in his work. It is also of interest to shed additional light on the relationship between gameplay and the use and production of videogame-community social media by more closely focusing on how videogame-related social media is consulted and created during gameplay, and how the functionalities and affordances of such sites plays a part in shaping the practices enacted there (see e.g., van Dijck, 2012; Skeggs and Yuill, 2016) Further studies could also serve to research procedures of how best to ingest community-produced materials into digital archives, including developing suitable metadata models and archival concepts (significant properties, provenance). This study has showed the complexity of the everyday documentary practices that underpin the production of information in videogame-related social media. Further study of this topic (see below) aside, it is of importance for future studies to engage in the development of best-practices and guidelines of selection in preservational efforts of documentation produced by videogame communities. Of importance to the entire preservational venture of interest in this study is to consider the collection of videogame-community social media from an ethical standpoint, and to produce ethical procedures and frameworks of general usefulness in efforts of socioculturally-focused videogame preservation.

Research should also continue to investigate the entanglement of videogame communities and social media. The importance of this research topic can be illustrated with reference to a trend in the corpus of previous studies that underpin the present work. The trend regards how videogame documentary practices extend beyond the videogame domain. Just as many of these studies consider the boundary between videogames and social media or other Internet-based services to be porous, they also predict that behaviors, skill sets, and perceptions that emerge in the context of videogames will become mean-

ingful and relevant in other arenas. Examples, nascent—though surely not exclusively—in the videogaming setting, include ways of seeking, evaluating, and using information (Adams, 2009); integration of community values in social media (Bullard, 2013); manners of collaborative writing (Hunter, 2011); historical activity (Webber, 2016); and literacies (Martin and Steinkuehler, 2010; Steinkuehler, 2007). These observations indicate that it is important to recognize what goes on in the videogaming domain; such cognizance could indicate what skills and literacies are required for meaningful online participation, and underpin key insights into the workings of current culture and society (see also Hollister, 2016). Finally, it is important that future inquiries explore the approximate cycles and patterns of how videogame-community documentary practices emerge, evolve, and disappear (see Shove, et al., 2012). Such studies could benefit socioculturally-focused efforts of videogame preservation by providing a research-based understanding on which to base decisions relating to planning, execution, description, and more. Further explorations investigations in this vein should include different communities, social-media platforms, and types of documentary practices than those explored in this study in order attain a better understanding of the breadth and complexities of this research topic.

Even as the writing of this text draws to an end, it is difficult to discern exactly what ideas, insights, or desires to know formed the initial motivation from which the rest of the present work emanated. Nevertheless, it is possible to identify driving forces of both personal and scholarly kinds. One is the author's own experiences of videogame playing and participation in videogame social media, which have been highly interlinked and mutually shaping. Another impetus was the status of videogames and videogaming as a current and important, yet under-explored, area of research from the perspectives of both LIS and archival studies. Videogame preservation here emerges as a pressing concern for both scholarly and industry pursuits and—perhaps—for cultural heritage purposes in general, while a deepened understanding of the documentary practices of videogame communities is valuable both in its own right, and for a better understanding how and why people do lots of things with digital technology and how digital technology plays important parts in the everyday lives of many people.

9. Sammanfattning (Summary in Swedish)

Digital teknik är idag ett viktigt inslag i många människors vardag. Samma bild framträder när det gäller sådant som uppstår ur mänsklig interaktion såsom samhälle och kultur—digital teknik är en betydande och meningsfull del av många sociala arenor. Den digitala teknikens genomslag har resulterat i att en mångfald av digitala material produceras och förmedlas av olika aktörer i olika sammanhang via olika verktyg och distributionskanaler. Samtidigt som digitalt material är lätt att producera och förmedla så länge nödvändig utrustning finns till hands, har det också egenskaper som gör det besvärligt att bevara och kommunicera över tid. Digitalt material utgör därför en utmaning för ABM-institutioner (arkiv, bibliotek, museum) och andra verksamheter som har till uppdrag att samla, bevara och tillgängliggöra material på lång sikt. Utmaningen återfinns i bevarandeprocessens samtliga steg: från frågor gällande urval, till hur begrepp som kontext och autenticitet kan förstås i relation till digitalt material, såväl som till vilka metadatamodeller och metoder för tillgängliggörande som är tillämpliga. Varför det är av vikt att hitta lösningar på de många utmaningar som kringgärdar digitalt bevarande är uppenbart: möjligheten att i framtiden forska eller på annat sätt använda digitalt material från andra tider än enbart det nära förflutna vilar i en betydande del på att fullgoda bevarandeinsatser genomförs i vår samtid.

Datorspelsarkivering är ett viktigt delproblem i det fält av utmaningar som rör bevarandet av signifikanta aspekter av (den digitala) samtiden. Datorspel[37] och datorspelande är viktiga att bevara på grund av deras kulturella, ekonomiska och historiska betydelse (Begy, 2015; Chapman, et al., 2017; Pötzsch och Šisler, 2016; Webber, 2016). Att bevara spel är emellertid en svår uppgift som för med sig utmaningar av teknisk, juridisk, kollaborativ, konceptuell och metodologisk natur (MacDonough, et al., 2016; McDonough, et al., 2010; Newman, 2012a). För att framtida tillgång till funktionalitet och dokumentation av datorspel ska kunna säkerställas är riktade bevarandeinitiativ nödvändiga (Bachell och Barr, 2014; Guttenbrunner, et al., 2010; McDonough, et al., 2010). Datorspelsbevarandets utmaningar kan enbart mötas genom forsknings- och utvecklingsinsatser som siktar på att gradvis lösa de problem som är implicita i sådan verksamhet. Föreliggande studie utgör ett steg i denna riktning.

---

[37] "Datorspel" används som ett paraplybegrepp som omfattar alla typer av spel som spelas på datorer, konsoler, mobiltelefoner, surfplattor, m.m.

Tidigare forskning om datorspelsbevarande kan delas i in i två huvudsakliga kategorier. Den första kategorin inrymmer sådana studier som koncentrerat sig på att utveckla metoder för att säkerställa datorspelens funktionalitet och tillgänglighet på lång sikt (Anderson, et al., 2010; Guttenbrunner, et al., 2010; McDonough, 2011; McDonough, 2012). Forskning som tillhör den andra kategorin har istället argumenterat för och undersökt hur de sociokulturella aspekter som existerar "bortom" spelens programkod samt audiovisuella dimensioner—spelkultur, kulturella och sociala aspekter av datorspelande, spelgemenskapers[38] sociala liv och aktivitet—kan dokumenteras och inlemmas i spelarkiv (Lowood, 2004; Newman, 2012a; Shipman och Marshall, 2014). Att samla in material producerat av spelgemenskaper i sociala medier har lyfts fram som ett centralt steg i att tillgodose framtida användare av spelarkiv med information om de aktiviteter och processer som spelgemenskapers verksamheter består av (Harrison, 2009; McDonough och Olendorf, 2011; Winget, 2011), och därjämte som ett nödvändigt steg i spelbevarandeprocessen (Newman, 2008; Newman, 2012a).

Denna studie bidrar till kunskapsläget i den andra kategorin av spelbevarandeforskning genom (i) att skapa en överblick av forskningsläget om sociokulturellt-orienterad spelbevarandeforskning och; (ii) att undersöka hur datorspelsgemenskaper producerar information i sociala medier (diskussionsforum, wikis), samt vilka betydelser som sådan information och informationsproduktion har i spelgemenskaperna. En studie av föreliggande slag kan självfallet inte möta alla föreliggande utmaningar i bevarandet av datorspelens sociokulturella dimensioner. Den kan däremot leverera pålitliga resultat som kan ligga till grund för praktiska och teoretiska överväganden i spelbevarandeinitiativ, exempelvis sådana som har att göra med prioritering, urval, och arkivbeskrivningar och annan metadata. Motivet till att sätta studiet av spelgemenskapers informationsproduktion i sociala medier i dialog med problemkomplexet kring sociokulturellt orienterat bevarande av datorspel har sin grund i följande: en fundamental princip inom alla arkiv- och bevarandeverksamheter är att välgrundade beslut samt kapaciteten att genomföra evaluerande analyser och göra teoretiska bidrag, baserar sig på god kännedom om materialet som ska bevaras, inklusive dess karakteristik och proveniens(er) (se t.ex. Gilliland och McKemmish, 2004; Kirschenbaum, 2012; Mortensen, 1999). Denna princip är särskilt aktuell i samband med nya arkivobjekt som datorspel, där beprövad praxis ännu inte har utarbetats.

---

[38] Det finns många olika typer av spelgemenskaper. I fokus för denna studie är spelgemenskaper där sociala media och annan digital teknik utgör de huvudsakliga kommunikationsmedlen medlemmarna emellan.

9.1. Syfte och frågeställningar

Studien positionerar sig huvudsakligen inom de biblioteks- och informations-svetenskapliga (B&I) och arkivvetenskapliga forskningsfälten, men tangerar även spel- och organisationsstudier samt andra discipliner. Även om den mängden relevant forskning inom dessa fält både är stor och diversifierad så finns det få tidigare studier som har tagit sikte på relationen mellan datorspels-gemenskaper och datorspels-relaterade sociala media, och hur information i den senare uppstår som en följd av de förstnämndas aktiviteter. Med vissa viktiga undantag (Barr, 2014; Bullard, 2013; Harviainen, et al., 2012; Newman, 2008; Newman, 2012; Sköld, et al., 2015) är det möjligt att observera en trend i den tidigare forskningen där relationen mellan spelgemenskaper och spelrelaterade sociala media enbart berörs i studiet av andra (emellertid relevanta och relaterade) fenomen som t.ex. hur spelare organiserar sig och sitt spelande (Warmelink, 2014) och datorspelskultur (Boellstorff, 2008). Samma mönster kan noteras i forskningsläget som råder gällande datorspelsbevarande. Flertalet studier konstaterar att information producerad av spelgemenskaper har stor relevans för bevarandet av spel (t.ex. MacDonough, et al., 2016; McDonough och Olendorf, 2011; Newman, 2011; Newman, 2012a), men få initiativ att beforska de kontexter och aktiviteter i och via vilka sådan information produceras (Crawford, 2012) har tagits. Samma förhållande gäller möjligheten att undersöka hur dylika studier kan bidra till forsknings- och bevarandeinitiativ riktade mot datorspel.

Föreliggande studie siktar på att fylla dessa kunskapsluckor. Studiens övergripande målsättning är att sätta fokus på hur datorspelsgemenskaper producerar information i sociala medier, och att skapa insikt i hur sådana kunskaper kan komma till nytta i sociokulturellt-orienterat datorspelsbevarande. Studien har vägletts av två syften. Det *första* syftet är att teoretisera och utveckla en förståelse för hur form och innehåll i social media-miljöer relaterade till spelgemenskaper växer fram som ett resultat av de informationsproducerande aktiviteterna som miljöerna inrymmer, och hur dessa aktiviteter är förbundna med gemenskapernas sociala processer. Fokus riktas här mot social media-baserad informationsproduktion som försiggår i samband minnesskapande och kunskapsproduktion—två processer av stor vikt i gemenskaper, organisationer och andra sociala grupper (se t.ex. Blackler, 1995; Bowker, 2005; Gherardi, 2012; Walsh och Ungson, 1991).

Studiens första syfte möts genom att följande frågeställningar besvaras:

1. Hur praktiseras minnesskapande och kunskapsproduktion i datorspelsgemenskaper?
2. Hur påverkas datorspelsgemenskapernas praktiker med relevans för minnesskapande och kunskapsproduktion av egenskaperna hos de sociala medier via vilka dessa praktiker genomförs?

Studiens *andra* syfte är att operationalisera insikterna i spelgemenskapers informationsproduktion på ett sådant sätt att de bidrar till kunskapsläget om sociokulturellt-orienterat spelbevarande. Forskningsfrågorna som undersöks i samband med det andra syftet är:

3. Vilket är det rådande forskningsläget gällande bevarande av datorspels sociokulturella aspekter i termer av prioriteringar, metoder, och begrepp?
4. Hur kan insikter i hur spelgemenskaper producerar information i spel-relaterade sociala medier bispringa bevarandet av datorspels sociokulturella aspekter?

Föreliggande studie är kvalitativ till sin karaktär och använder sig av olika metoder, materialtyper och ett flerledat teoretiskt ramverk för att uppnå sina syften. Studien består av fyra delstudier, rapporterade i fyra artiklar (I–IV), och en kappa. Forskningsfrågorna vägledde designen av delstudierna, inklusive val av källmaterial, metoder, och teoretiska resurser. Studiens teoretiska ramverk skisseras i artikel I och vidareutvecklas i kappan. Ramverket är i huvudsak baserat på praktikteori och dokumentteori och har kapacitet att ge perspektiv på spelgemenskapers minnesskapande och kunskapsproduktion såväl som deras informationsproduktion i sociala media. Artiklarna II och III rapporterar fältstudier av minnesskapande (II) and kunskapsproduktion (III) i spelgemenskaper. Artikel II är baserad på en studie av en spelgemenskap på webbplatsen Reddit (www.reddit.com) dedikerad till online-rollspelet City of Heroes (CoH). Artikel III utforskar kunskapsproduktion på Dark Souls Wiki (DSW; http://darksouls.wikia.com/wiki/Dark_Souls_Wiki), en wiki ägnad åt spelserien Dark Souls (vid studiens genomförande i huvudsak det andra spelet i serien, Dark Souls II, DS2). Artikel IV är grundad på en kvalitativ systematisk litteraturöversikt av spelbevarandelitteratur som syftar till att producera de insikter som krävs för att sätta artiklarna I–III i sammanhang med forskningsläget gällande spelbevarande i allmänhet och spelbevarande orienterat mot datorspelens sociokulturella dimensioner i synnerhet. Vid sidan av det teoretiska ramverket utgör tidigare forskning om fans och fan-gemenskaper (Jenkins, 2008; 2013), olika typer av produktion i online-gemenskaper via sociala medier (Barr, 2014; Golub, 2010; Steinkuehler och Duncan, 2008) och datorspelsbevarande (McDonough, et al., 2010; Newman, 2012a; Winget, 2011b) viktiga tolkningskontexter för studiens resultat.

Härnäst presenteras delstudierna i större detalj. Därefter följer en sammanfattning och diskussion av studiens resultat.

9.2. Delstudier

9.2.1. Artikel I. Att spåra spår: ett dokument-centrerat tillvägagångssätt för att bevara datorspelsgemenskaper

Den första delstudien tar sin utgångspunkt i resonemanget att framgångsrika bevarandeinitiativ inom ABM-sektorn vilar på att de ingående prioriteringarna, besluten och valen av bevarandemetoder är bygger på en god förståelse av objektet i centrum för bevarandearbetet (Kirschenbaum, 2012; Mortensen, 1999; Schwartz och Cook, 2002). Denna tankegång implicerar att nya materialtyper, där praxis och goda kunskaper baserade på forskning eller erfarenheter från tidigare bevarandeprojekt inte finns att tillgå i någon omfattande utsträckning, för med sig betydande utmaningar för de ABM-institutioner och andra verksamheter som har bevarande och tillgängliggörande inom sitt verksamhetsområde. Brügger (2012), Galloway (2005) och Snickars (2010) observerar att denna situation ofta är fallet när det gäller digitala objekt. Litteraturen indikerar likaså att sociala media är viktiga platser i online-gemenskaper (Hine, 2000; Lowood, 2009; Rehn, 2001). Det är mot denna bakgrund som delstudiens syfte framträder: att utveckla ett ramverk som kan användas till att teoretisera spelgemenskapers informationsproduktion i spelrelaterade sociala medier och som kan vägleda kommande empiriska undersökningar. Ramverket utvecklades genom en konceptuellt och syntetiskt driven analys av tidigare forskning om datorspel och datorspelsgemenskaper (Boellstorff, 2008; Pearce, 2011; Rheingold, 2000, m.fl.), bevarande av datorspel (McDonough, et al., 2010, m.fl.), praktikteori (t.ex. Reckwitz, 2002b; Schatzki, 1996) och dokumentstudier (t.ex. Buckland, 1997; Lund, 2010; Frohmann, 2009).

Artikel I indikerar att det finns analytiska fördelar med att teoretiskt närma sig spelrelaterade sociala medier inte som passiva förvar av dokumentation skapad av spelgemenskaper, eller som biprodukterna av interaktion över Internet, utan som knutpunkter för praktiker där datorspelgemenskapers sociala processer (kunskap, synpunkter, normer, gemensamma sätt att utföra uppgifter) förhandlas fram, reproduceras och moduleras. I det ramverk som utarbetas i artikel I framträder också att det är att föredra att lyfta fram informationsbegreppets materiella dimensioner i studiet av spelgemenskapers informationsproduktion i sociala medier. Ur denna synvinkel, och i de kommande delstudierna, konceptualiseras information som "dokument" och praktiker med meningsfull anknytning till information som "dokumentpraktiker". Det visas också att ytterligare kunskapsbidrag till sociokulturellt-orienterat spelbevarande förutsätter empiriskt grundande insikter i de dokumentpraktiker genom vilka dokumentation produceras av spelgemenskaper i spelrelaterade sociala medier. De delstudier som avrapporteras i artikel II och III är svar på dessa uppmaningar till fortsatt forskning.

9.2.2. Artikel II. Minnesskapande i datorspelsgemenskaper: dokumentpraktiker i City of Heroes-gemenskapen

Den andra delstudien undersöker hur spelgemenskaper använder spelrelaterade sociala medier för att dokumentera sitt förflutna. Delstudien bidrar till kunskapen om hur minnesskapande i spelgemenskaper sker via medlemmarnas deltagande i dokumentpraktiker. Studien visar vidare hur spelgemenskapernas minnesskapande sker i sampel med gemenskapens dokumentpraktiker och de egenskaper som den sociala medier-plattformen i bruk innehar. Artikel II är baserad på en studie av en CoH-gemenskap på diskussionsforumet /r/cityofheroes på webbsiten Reddit. CoH var ett online-rollspel som lades ner ungefär mitt i den sju månader långa studieperioden. Delstudiens teoretiska resurser utgörs av ramverket som utarbetades i artikel I med tillskott av forskning om minnesskapande (Bowker, 2005; Featherstone, 2000; Featherstone, 2006; Halbwachs, 1992; Nora, 1989; Walsh och Ungson, 1991).

Studien visar att fem huvudsakliga representationer av CoHs förflutna dokumenterades på /r/cityofheroes. Dessa representationer var centrerade kring (i) de audiovisuella element som utgjorde CoHs spelvärld; (ii) erfarenheter från att spela CoH; (iii) datorspelsindustrin; (iv) CoHs narrativa dimensioner och (v) CoHs spelmekaniker. En stor bredd av ämnen och perspektiv dokumenterades, på olika sätt och i olika syften, på /r/cityofheroes under studiens gång. Analysen sätter fokus på hur det dokumenterade förflutna spelade en aktiv roll i gemenskapens sätt att handskas med situationen som CoHs nedläggning förde med sig. Exempelvis spelade denna dokumentation en roll i gemenskapens protester mot beslutet stänga ner CoH och i de strategier som tillämpades för att uppmuntra till fortsatt aktivitet på /r/cityofheroes också efter att spelet inte längre var tillgängligt. Att dokumentpraktiker som syftade till minnesskapande var så komplexa och framträdande under studieperioden kan förklaras med hänvisning till CoHs nedläggning. Beskedet att gemenskapens tillgång till CoH skulle upphöra hade inverkan på de flesta praktiker som observerades under studien både före och efter att den faktiska nedläggningen hade skett. Den intensiva aktivitet som försiggick på /r/cityofheroes också vid studiens slut, ungefär fyra månader efter att CoH stängts, indikerar att de minnesskapande dokumentpraktikerna bidrog till att hålla samman gemenskapen genom att erbjuda medlemmarna ett sätt att relatera till CoH, dess spelvärld, spelmekaniker, dess narrativa dimension och erfarenheterna av att ha varit en spelare även om själva spelet inte längre fanns att tillgå. På sätt fungerade /r/cityofheroes som ett *lieux de mémoire* (Nora, 1989)—en plats där minne materialiseras—för CoH-gemenskapen.

9.2.3. Artikel III. Kunskapsproduktion i en datorspelswiki: undersökningar, källmaterial och metoder

Den tredje delstudien undersöker hur kunskapsproduktion praktiseras i en datorspelsgemenskap. Studien baseras på en tre månader lång, etnografisk studie av DSW som inleddes samma dag som DS2 släpptes. Studien fokuserade på DSW-gemenskapens kunskapsmål, hur medlemmarna i DSWs gemenskap (DSWianerna) organiserade undersökningar, samt deras bruk och val av källmaterial, metoder och kunskapskriterier. Teoretiska resurser hämtades från praktikteoretiska perspektiv på kunskapsproduktion (huvudsakligen Knorr-Cetina, 1999; se också Becher, 1989; Latour och Woolgar, 1979; Orlikowski, 2002) och dokumentstudier (t.ex. Brown och Duguid, 1996; Frohmann, 2004b). Studiens formulering, upplägg och genomförande var influerat av och Geertz (1993, p. 5–10) och skrifter som utreder hur etnografi kan tillämpas i studier av fenomen på Internet (t.ex. Gatson, 2011; Hine, 2000; Markham, 2013). Metoden för datainsamling inspirerades av Geiger och Ribes (2011) and Schuurman (2008).

Artikel III analyserar och beskriver hur produktionen av dokumentationen på DSW sker inom ramarna för en historiskt situerad kunskapskultur. Resultaten visar att DSWs kunskapskultur väsentligen kan summeras i fem punkter. För det första var kunskapsproduktionen på DSW självständig—wikins policys slog fast att all dokumentation på siten ska produceras av gemenskapens egna medlemmar och inte inhämtas från andra wikis eller webbplatser. För det andra var DSW-projektets explicita målsättning att skapa en dokumentationsresurs formerad enligt de standarder och specifikationer som utarbetats av DSWianerna själva. För det tredje mötte enbart sådant vetande som var baserat på observation och som kunde verifieras av flera DSWianerna wikins kunskapskriterier. För det fjärde, egenskaperna hos de i sammanhanget mest centrala plattformarna—DS2 och DSWs MediaWiki-infrastruktur—hade en stor inverkan på DSWianernas kunskapsproduktionen på wikin. Sist och slutligen visade studien att kunskapsproduktion på DSW förvisso var processuell, men att denna process framskred i segment som hängde samman med DS2s livscykel, hur långt DSWianernas hade framskridit i DS2, och olika organisatoriska åtgärder initierade av wikins moderatorer, administratörer och seniora användare. I sammandrag visar resultaten vidare att produktionen av DS2-relaterad kunskap på DSW i stor utsträckning påverkades av de praktiker som etablerats i samband med DSWianernas arbete med att dokumentera DS2 föregångare, DS1, och DS2s speldesign. Likaså hade information från spelindustrin och spelpressen påtaglig inverkan på hur DS2 dokumenterades på wikin.

9.2.4. Artikel IV. Sociokulturellt orienterat spelbevarande: en litteraturöversikt av prioriteringar, metoder, och begrepp

Den fjärde och sista delstudien utforskar hur datorspels sociokulturella aspekter framträder i spelbevarandeforskningen. Studien baserar sig på en kritisk och systematisk litteraturöversikt (Grant och Booth, 2009) av publikationer som härrör från flertalet discipliner och spelbevarandeprojekt. Mer specifikt sätter översikten i fokus de skäl som motiverar bevarande av datorspelens sociokulturella dimensioner, urval av innehåll och material, och metoder för bevarande, såsom de framhålls i litteraturen. Innehållsanalys (Krippendorff, 2004) och metodlitteratur om systematiska litteraturöversikter (t.ex. vom Brocke, et al., 2009; Webster och Watson, 2002) utgjorde studiens teoretiska och metodiska utgångspunkter.

Artikel IV visar att datorspels sociokulturella aspekter framträder på tre sätt i spelbevarandelitteraturen. I det första perspektivet beskrivs datorspelens sociokulturella aspekter som en essentiell del av vad ett spel är. Meningsfulla spelbevarandeinitiativ måste enligt detta synsätt innehålla dokumentation av t.ex. datorspelande och spelkultur; att enbart tillgodose åtkomsten till och funktionaliteten av spelet i sig anses endast delvis uppfylla spelbevarandets grundläggande syfte och målsättningar. I det andra perspektivet uppfattas datorspelens sociokulturella aspekter som en användbar resurs i bevarandet av spel, främst genom att fungera som en viktig kontext till spelens hårdvara och mjukvara. Genom att bevara dokumentation av datorspelens sociokulturella aspekter vid sidan av spelen i sig breddas arkivsamlingens användbarhet på grund av dess mer mångsidiga innehåll. Det tredje perspektivet ger vid handen att dokumentation av datorspelens sociokulturella dimensioner är värdefullt eftersom sådant material kan ge insikter i närtida historia från en socioteknisk synvinkel. Datorspelskultur och hågkomster från förflutna interaktioner med datorspel framträder här som värdefull dokumentation av persondatoranvändningens historia och de sociotekniska skeenden som resulterade i den digitala teknikens position i samtida samhälle och kultur. Resultaten av delstudien används också för att skissera möjliga riktningar för framtida forskning på spelbevarande såsom vidareutveckling av relevanta arkivteoretiska aspekter så att de bättre svarar mot datorspelbevarandets särart, samt studier av datorspelarkiv och datorspelens ontologi.

9.3. Diskussion och slutsats

Ett viktigt resultat i studien är det teoretiska ramverk som utvecklades i syfte att bispringa tolkningen av spelgemenskapers informationsproduktion i spelrelaterade sociala medier och hur denna är förbunden med sociala processer i dessa gemenskaper. Som tidigare utfäst är de mest betydelsefulla komponen-

terna i detta ramverk praktikteori, dokumentteori samt perspektiv på minnes-skapande och kunskapsproduktion. Ramverket har följande karakteristik, vil-ken också utgör delar av dess bidrag till framtida forskning på området spel-bevarande.

Bred tillämpning. Ramverket syftar till att teoretisera relationen mellan on-line-gemenskaper, de sociala media-tjänster gemenskaperna brukar, och de dokumentpraktiker som formar den dokumentation som återfinns i dessa tjänster. Således är ramverket av bred tillämplighet i studier av online-gemen-skaper både i spel- och andra domäner.

Konceptuell affinitet. Dokument är ett väletablerat begrepp i B&I-forsk-ning som också har affinitet till arkivsfären genom dess närhet till begrepp som arkivhandling (eng. records; se t.ex. Yeo, 2011). Denna konceptuella af-finitet är av betydelse eftersom den erbjuder möjlighet att föra samman online-gemenskapers sociala medier som empiriskt forskningsfält med de centrala koncept, intressen och teoretiska perspektiv inom B&I, arkivvetenskap och dokumentforskning som den bedrivits i arbetsplatsstudier och organisations-sociologi (t.ex. Berg och Bowker, 1997; Berg, 1996; Harper, 1998; Riles, 2006a).

Tolkningspotential. Ramverket visar också hur studiet av online-gemen-skapers praktiker i webbmiljöer kan röra sig bortom representationalistiska tolkningsmodeller med inspiration från Barad (2007). Ur ett icke-representat-ionalistiskt perspektiv blir online-gemenskapers praktiker socialt menings-fulla—vilket visas i artiklarna II och III—genom deras intima förbundenhet med teknologi (i detta fall, sociala media). Skillnaden mot ett synsätt där prak-tiker blir socialt meningsfulla för att de i dylika kontexter är medierade eller på annat sätt blir representerade är betydande.

Vidare visar studien att spelgemenskapers produktion av information i spelrelaterade sociala medier sker via återkommande, koordinerade, och kol-lektivt utförda dokumentpraktiker. Dessa praktiker är lokalt konfigurerade: karakteristiken av det spel som står i centrum för spelgemenskapen och den aktuella social media-plattformens egenskaper, spelets livscykel, relevanta skeenden i spelindustrin, och dokumentpraktikernas roll i spelgemenskapens sociala processer (minnesskapande, kunskapsproduktion) har stor betydelse för formeringen av spelgemenskapers sociala medier och den dokumentation som produceras och kan återfinnas där. Generellt uppvisade de studerade ge-menskaperna en liknande grad av expertis som observerats i tidigare studier av spelgemenskaper online (t.ex. Barr, 2014; Steinkuehler och Duncan, 2008). Dokumentationen som producerades på /r/cityofheroes och DSW var överlag extensiv, komplex och inte sällan granskad och i förekommande fall komplet-terad eller redigerad av andra medlemmar i gemenskapen är den ursprungliga upphovspersonen. De studerade spelgemenskapernas dokument och doku-mentpraktiker hängde vidare intimt samman med minnesskapande och kun-skapsproduktion (Bowker, 2005; Frohmann, 2004a) samt fungerade som

gränsmarkörer mellan näraliggande gemenskaper (Brown och Duguid, 1996; Frohmann, 2004b; Huvila, 2011).

Baserat på den överblick av spelbevarandeforskning som ges i artikel IV kan resultaten från artiklarna II och III operationaliseras på flera sätt i bevarandeinitiativ och -forskning riktad mot datorspels sociokulturella aspekter. Bevarandeinitiativ som har som målsättning att bevara ett spels sociokulturella dimension genom att samla in eller på annat sätt använda sig av spelgemenskaps-producerad dokumentation bör ta hänsyn till att följande faktorer. Dessa faktorer har stor inverkan på den dokumentation som finns att tillgå, hur den har producerats, och hur dokumentationen kan bidra med kontext till bevarad spel-mjukvara och –hårdvara.

Flertalet praktikteoretiker (Feldman och Orlikowski, 2011; Gherardi, 2016; Nicolini, 2013; Orlikowski, 2007; Schatzki, 2001) har observerat att praktiker är intimt förbundna men de materiella omgivningar i vilka de utförs. Artiklarna II och III visar att viktiga materiella omgivningar i online-spelgemenskaper utgörs av de sociala medier och spelen kring vilka dessa gemenskaper är centrerade. Plattformarna Reddit och MediaWiki har flera likheter, men också betydande skillnader vilka påverkade de dokumentpraktiker som utfördes där. Medan tidigare studier (t.ex. Geiger och Ribes, 2011; Hunter, 2011) har observerat den i viss utsträckning ömsesidigt formande relationen mellan praktiker och sociala media är det färre som har diskuterat sambandet mellan datorspelet som står i centrum för en spelgemenskap och denna spelgemenskaps dokumentpraktiker. Interaktionen mellan spel och dokumentpraktiker hade väsentligen två dimensioner som hänger samman med spelets karakteristik respektive dess livscykel. Den förra dimensionen utforskades i artikel III, där DS2s höga svårighetsgrad och den knapphändiga information som står spelaren till buds stod i relation till utformningen av DSWianernas kunskapsproduktionsarbetes målsättningar, metoder, och kunskapskriterier. Studien av CoH-gemenskapen i artikel II och de sätt på vilka de agerade i samband med CoHs nedläggning illustrerar hur ett spels livscykel påverkar dokumentpraktikerna hos de gemenskaper som är relaterade till det. Ett liknande skeende observeras i artikel III, där lanseringen av DS2 har stor inverkan på graden av aktivitet på DSW och produktionen av dokumentation på wikin. Det är emellertid inte enbart vid lansering och nedläggning som en spelgemenskaps dokumentpraktiker i stor utsträckning påverkas av justeringar i spelet, utan dylika skeenden kan ske även vid andra tidpunkter (se t.ex. Sköld, 2011). Vidare har Newman (2008; 2012a) och Jenkins (2006; 2008; 2013) tidigare pekat på den porösa gräns som finns mellan konsumtion och produktion i medie-centrerade gemenskaper (TV, film, datorspel). Föreliggande studie visar att det finns en nära relation mellan datorspelande och deltagande i dokumentpraktiker. Inom ramen för kunskapsproduktion på DSW var spelet både den mest använda informationskällan och spelande en av de viktigaste metoderna för undersökning och utforskande. En liknande situation förelåg i CoH under månaderna innan spelet blev otillgängligt. Studien visar också hur spelgemenskapers

142

dokumentpraktiker existerar i olika organisatoriska sammanhang. Det fanns ingen tilldelning av roller eller ansvarsområden i CoH-gemenskapen. Inte heller observerades några regulativa initiativ trots den omfattande och varierade dokumentation som producerades på webbplatsen. DSW står i stark kontrast: dokumentpraktikerna på siten mer organiserad och betydligt mer reglerad.

Det är viktigt att de beslut, prioriteringar och val av metoder som är implicita i bevarandeinitiativ riktade mot datorspels sociokulturella aspekter baseras på vad som är känt om spelgemenskaper och de kontexter och praktiker genom vilka de producerar dokumentation i spelrelaterade sociala medier. Föreliggande studie har enligt ovan bidragit med kunskaper som kan komma till nytta i detta sammanhang. Studien föreslår flera riktningar för framtida forskning. Två sådana linjer av vikt ska kort nämnas här. Det är av intresse att ytterligare belysa relationen mellan datorspelande och användningen och produktionen av spelrelaterad dokumentation i sociala medier genom att beforska hur dylika resurser används under pågående spel, samt hur dessa tjänsters karakteristik och egenskaper påverkar formeringen av de praktiker som försiggår där (se t.ex., van Dijck, 2012; Skeggs och Yuill, 2016). Vidare så är det starkt motiverat att bedriva ytterligare studier av relationen mellan spelgemenskaper och de praktiker som de utför i spelrelaterade sociala media. Tidigare studier av t.ex. informationsbeteenden (Adams, 2009) och literacitet (Martin och Steinkuehler, 2010; Steinkuehler, 2007) pekar på att förehavanden relaterade till datorspel har relevans också bortom datorspelsdomänen. Att bättre förstå skeenden i datorspelssammanhang är alltså ett av många sätt att bidra till kunskapen vår samtida kultur och samhälle.

10. References

Aarseth, E., 2012. A Narrative Theory of Games. In: *Proceedings of the 2012 International Conference on the Foundations of Digital Games*. Raleigh, NC, 29 May–01 June 2012. New York, NY: ACM. pp.129–133. https://doi.org/10.1145/2282338.2282365.

Adams, S., 2009. What Games Have to Offer: Information Behavior and Meaning-Making in Virtual Play Spaces. *Library Trends*, 57(4), pp.676–693. https://doi.org/10.1353/lib.0.0058.

Albrechtslund, M., 2010. Gamers Telling Stories: Understanding Narrative Practices in an Online Community. *Convergence: The International Journal of Research into New Media Technologies*, 16(1), pp.112–124. https://doi.org/10.1177/1354856509348773.

Albrechtslund, M., 2011. Online Identity Crisis: Real ID on the World of Warcraft Forums. *First Monday*, 16(7), no pag. http://dx.doi.org/10.5210/fm.v16i7.3624.

Anderson, D. and Delve, J. eds., 2013. *The Preservation of Complex Objects, Volume 3: Gaming Environments and Virtual Worlds*. London, UK: JISC.

Anderson, D., Delve, J. and Pinchbeck, D., 2010. Toward a Workable Emulation-Based Preservation Strategy: Rationale and Technical Metadata. *New Review of Information Networking*, 15(2), pp.110–131. https://doi.org/10.1080/13614576.2010.530132.

Antonescu, M-D., Guttenbrunner, M. and Rauber, A., 2009. Documenting a Virtual World: A Case Study in Preserving Scenes from Second Life. In: *Proceedings from the 9th International Web Archiving Workshop*. Corfu, Greece, September 30–October 1 2009. pp.5–10. [online] Available at: http://www.ionio.gr/conferences/ecdl2009/ws_iwaw2009.pdf [Accessed 5 January 2018].

Archiving Virtual Worlds, n.d. *Archiving Virtual Worlds: Stanford Humanities Lab*. [online] Available at: https://archive.org/details/virtual_worlds [Accessed 5 January 2018]. [Accessed 5 January 2018].

Avedon, E.M. and Sutton-Smith, B., 1971. *The Study of Games*. London, UK: Wiley.

Bachell, A. and Barr, M., 2014. Video Game Preservation in the UK: A Survey of Records Management Practices. *International Journal of Digital Curation*, 9(2), pp.139–170. https://doi.org/10.2218/ijdc.v9i2.294.

Bandara, W., Miskon, S. and Fielt, E., 2011. A Systematic, Tool-Supported Method for Conducting Literature Reviews in Information Systems. In: V. Tuunainen, J. Nandhakumarm, M. Rossi and W. Soliman, eds. 2011. *Proceedings from the 19th European Conference on Information Systems*. Helsinki, Finland, 9–11 June. Atlanta, GA: AIS. pp.1-14. [online] Available at: https://eprints.qut.edu.au/42184 [Accessed 5 January 2018].

Barad, K., 2007. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. London, UK: Duke University Press.

Barr, M., 2014. Learning Through Collaboration: Video Game Wikis. *International Journal of Social Media and Interactive Learning Environments*, 2(2), pp.119–133. https://doi.org/10.1504/IJSMILE.2014.063385.

Bartle, R.A, 2004. *Designing Virtual Worlds*. Indianapolis, IN: New Riders.

Bartle, R.A., 2010. From MUDs to MMORPG:s The History of Virtual Worlds. In: J. Hunsinger, L. Klastrup, M. Allen, eds. 2010. *International Handbook of Internet Research*. London, UK: Springer. pp.23–39.

Barwick, J., Dearnley, J. and Muir, A., 2008. The Barriers to the Preservation of Digital Games: Questions on Cultural Significance. In: *Proceedings from Media in Motion: The Challenge of Preservation in the Digital Age*. Montreal, Canada, October 29. Montreal, Canada: McGill University and DOCAM. pp.1-13. [online] Available at: https:// dspace.lboro.ac.uk/2134/4988 [Accessed 5 January 2018].

Barwick, J., Dearnley, J. and Muir, A., 2011. Playing Games with Cultural Heritage: A Comparative Case Study of the Current Status of Digital Game Preservation. *Games and Culture*, 6(4), pp.373–390. https://doi.org/10.1177/1555412010391092.

Bates, M.J., 2007. Defining the Information Disciplines in Encyclopedia Development. *Information Research*, 12(4), no pag. [online] Available at: http://www.informationr.net/ir/12-4/colis/colis29.html [Accessed 5 January 2018].

Bates, M.J., 2015. The Information Professions: Knowledge, Memory, Heritage. *Information Research*, 20(1), no pag. [online] Available at: http://InformationR.net/ir/20-1/paper655.html [Accessed 5 January 2018].

Baym, N.K., 2000. *Tune In, Log On: Soaps, Fandom, and Online Community*. London, UK: SAGE.

Baym, N.K., 2007. The New Shape of Online Community: The Example of Swedish Independent Music Fandom. *First Monday*, 12(8), no pag. http://dx.doi.org/10.5210/fm.v12i8.1978.

Bearman, D., 1999. Reality and Chimeras in the Preservation of Electronic Records. *D-Lib Magazine*, 5(4), no pag. http://dx.doi.org/10.1045/april99-bearman.

Becher, T., 1989. *Academic Tribes and Territories: Intellectual Enquiry and the Cultures of Disciplines*. Milton Keynes, UK: Society for Research into Higher Education & Open University Press.

Becker, H., 2014. *What About Mozart? What About Murder? Reasoning from Cases*. Chicago, IL: University of Chicago Press.

Begy, J., 2015. Board Games and the Construction of Cultural Memory. *Games and Culture*, 12(7–8), pp.718–738. https://doi.org/10.1177/1555412015600066.

Bell, D., 1973. *The Coming of Post-Industrial Society: A Venture in Social Forecasting*. New York, NY: Basic Books.

Berg, M., 1996. Practices of Reading and Writing: The Constitutive Role of the Patient Record in Medical Work. *Sociology of Health & Illness*, 18(4), pp.499–524. https://doi.org/10.1111/1467-9566.ep10939100.

Berg, M. and Bowker, G., 1997. The Multiple Bodies of the Medical Record: Toward a Sociology of an Artifact. *The Sociological Quarterly*, 38(3), pp.513–537. https://doi.org/10.1111/j.1533-8525.1997.tb00490.x.

Blackler, F., 1995. Knowledge, Knowledge Work and Organizations: An Overview and Interpretation. *Organization Studies*, 16(6), pp.1021–1046. https://doi.org/10.1177/017084069501600605.

Blanchette, J-F., 2011. A Material History of Bits. *Journal of the American Society for Information Science and Technology*, 62(6), pp.1042–1057. https://doi.org/10.1002/asi.21542.

Bobrow, D.G. and Whalen, J., 2002. Community Knowledge Sharing in Practice: The Eureka Story. *Reflections*, 4(2), pp.47–59.

Boellstorff, T., 2008. *Coming of Age in Second Life: An Anthropologist Explores the Virtually Human*. Princeton, NJ: Princeton University Press.

Boellstorff, T., Nardi, B., Pearce, C. and Taylor, T.L., 2012. *Ethnography and Virtual Worlds: A Handbook of Method*. Princeton, NJ: Princeton University Press.

Bogost, I., 2006. *Unit Operations: An Approach to Videogame Criticism*. Cambridge, MA: MIT Press.

Booms, H., 1987. Society and the Formation of a Documentary Heritage: Issues in the Appraisal of Archival Sources. *Archivaria*, 24, pp.69–107.

Bourdieu, P., 1977. *Outline of a Theory of Practice*. Cambridge, UK: Cambridge University Press.

Bowker, G.C., 2005. *Memory Practices in the Sciences*. Cambridge, MA: MIT Press.

Bowker, G.C. and Star, S.L., 1999. *Sorting Things Out: Classification and its Consequences*. Cambridge, MA: MIT Press.

Briet, S., 2006. *What is Documentation? English Translation of the Classic French Text*. Translated and edited by R.E. Day, L. Martinet and H.G.B. Anghelescu. Lanham, MD: Scarecrow Press.

Brothman, B., 1991. Orders of Value: Probing the Theoretical Terms of Archival Practice. *Archivaria*, 32, pp.78–100.

Brown, J.S. and Duguid, P., 1996. The Social Life of Documents. *First Monday*, 1(1), no pag. http://dx.doi.org/10.5210/fm.v1i1.466.

Brown, J.S. and Duguid, P., 2000. *The Social Life of Information*. Boston, MA: Harvard Business School Press.

Bruckman, A., 2002. *Ethical Guidelines for Research Online*. [online] Available at: https://www.cc.gatech.edu/~asb/ethics [Accessed 5 January 2018].

Brügger, N., 2012. Historical Network Analysis of the Web. *Social Science Computer Review*, 31(3), pp.306–321. https://doi.org/10.1177/0894439312454267.

Buckland, M., 1991a. *Information and Information Systems*. Westport, CT: Praeger.

Buckland, M., 1991b. Information as Thing. *Journal of the American Society for Information Science*, 42(5), pp.351–360. https://doi.org/10.1002/(SICI)1097-4571(199106)42:5<351::AID-ASI5>3.0.CO;2-3.

Buckland, M., 1997. What is a "Document"? *Journal of the American Society for Information Science*, 48(9), pp.804–809. https://doi.org/10.1002/(SICI)1097-4571(199709)48:9<804::AID-ASI5>3.0.CO;2-V.

Buckland, M., 1998. What is a "Digital Document"? *Document Numérique*, 2(2), pp.221–230. [online] Available at: http://people.ischool.berkeley.edu/~buckland/digdoc.html [Accessed 5 January 2018].

Buckland, M., 2014. Documentality Beyond Documents. *The Monist*, 97(2), pp.179–186. https://doi.org/10.5840/monist201497212.

Buckland, M., 2017. *Information and Society*. Cambridge, MA: MIT Press.

Bullard, J., 2013. Playfully Serious Information for Serious Play: The Integration of Community Values in an Information Resource. In: *Proceedings from the 2013 iConference*. Fort Worth, TX, 12–15 February 2013. Grandville, MI: iSchools. pp.389–397.

Burda, D. and Teuteberg, F., 2013. Sustaining Accessibility of Information Through Digital Preservation: A Literature Review. *Journal of Information Science*, 39(4), pp.442–458. https://doi.org/10.1177/0165551513480107.

Börjesson, L., 2017. *Resources for Scholarly Documentation in Professional Service Organizations: A Study of Swedish Development-Led Archaeology Report Writing*. Uppsala, Sweden: Department of ALM, Uppsala University.

Carlsson, H., 2013. *Den nya stadens bibliotek: Om teknik, förnuft och känsla i gestaltningen av kunskaps- och upplevelsestadens folkbibliotek*. Lund, Sweden. Lund University.

Carr, D., Buckingham, D., Burn, A. and Schott, G., 2000. *Computer Games: Text, Narrative and Play*. Cambridge, UK: Polity Press.

Castronova, E., 2005. *Synthetic Worlds: The Business and Culture of Online Games*. Chicago, IL: University of Chicago Press.

Chapman, A., Foka, A. and Westin, J., 2017. Introduction: What is Historical Game Studies? *Rethinking History*, 21(3), pp.358–371. https://doi.org/10.1080/13642529.2016.1256638.

Charmaz, K., 1983. The Grounded Theory Method: An Explication and Interpretation. In: R.G. Burgess, ed. 1983. *Contemporary Field Research*. Prospect Heights, IL: Waveland Press. pp.109–126.

Chen, M.G., 2008. Communication, Coordination, and Camaraderie in World of Warcraft. *Games and Culture*, 4(1), pp.47–73. https://doi.org/10.1177/1555412008325478.

Chen, M.G., 2012. Leet Noobs: The Life and Death of an Expert Player Group in World of Warcraft. New York, NY: Peter Lang.

Clifford, J. and Marcus, G.E., 1986. *Writing Culture: The Poetics and Politics of Ethnography*. Berkeley, CA: University of California Press.

Cook, T., 1997. What is Past is Prologue: A History of Archival Ideas Since 1898, and the Future Paradigm Shift. *Archivaria*, 42, pp.17–63.

Cook, T., 2001. Archival Science and Postmodernism: New Formulations for Old Concepts. *Archival Science*, 1(1), pp.3–24. https://doi.org/10.1007/BF0243563.

Corbin, J.M. and Strauss, A., 1990. Grounded Theory Research: Procedures, Canons, and Evaluative Criteria. *Qualitative Sociology*, 13(3), pp.3–21. https://doi.org/10.1007/BF00988593.

Corradi, G., Gherardi, S. and Verzelloni, L., 2010. Through the Practice Lens: Where is the Bandwagon of Practice-Based Studies Heading? *Management Learning*, 41(3), pp.265–283. https://doi.org/10.1177/1350507609356938.

Coutinho, L., Bisht, S. and Raje, G., 2000. Numerical Narratives and Documentary Practices: Vaccines, Targets and Reports of Immunisation Programme. *Economic and Political Weekly*, 35(8–9) pp.656–666.

Cox, A.M., 2012. An Exploration of the Practice Approach and its Place in Information Science. *Journal of Information Science*, 38(2), pp.176–188. https://doi.org/10.1177/0165551511435881.

Cox, R.J., 2002. The End of Collecting: Towards a New Purpose for Archival Appraisal. *Archival Science*, 2(3–4), pp.287–309. https://doi.org/10.1007/BF024356.

Crawford, G., 2012. *Video Gamers*. Abingdon, UK: Routledge

Crawford, G. and Rutter, J., 2006. Digital Games and Cultural Studies. In: J. Rutter and J. Bryce, eds. 2006. *Understanding Digital Games*. London, UK: SAGE. pp.148–165.

Davies, E., 2008. The Script as Mediating Artifact in Professional Theater Production. *Archival Science*, 8, pp.181–198. https://doi.org/10.1007/s10502-008-9074-x.

Day, R.E., 2000. The "Conduit Metaphor" and the Nature and Politics of Information Studies. *Journal of the American Society for Information Science*, 51(9), pp.805–811. https://doi.org/10.1002/(SICI)1097-4571(2000)51:9<805::AID-ASI30>3.0.CO;2-C.

De Certeau, M., 1984. *The Practice of Everyday Life, Vol. 1: The Practice of Everyday Life*. Berkeley, CA: University of California Press.

Denzin, N.K., 1978. *The Research Act: A Theoretical Introduction to Sociological Methods*. 2nd ed. New York, NY: McGraw-Hill.

Denzin, N.K. and Lincoln, Y.S., 1994. Introduction: The Discipline and Practice of Qualitative Research. In: N.K. Denzin and Y.S. Lincoln, eds. 1994. *Handbook of Qualitative Research*. London, UK: SAGE. pp.1–32.

Dowler, L., 1988. The Role of Use in Defining Archival Practice and Principles: A Research Agenda for the Availability and Use of Records. *The American Archivist*, 51(1–2), pp.74–86. https://doi.org/10.17723/aarc.51.1-2.32305140q0677510.

Entertainment Software Association, 2017. *2017 Essential Facts About the Computer and Video Game Industry*. [online] Available at: http://www.theesa.com/article/2017-essential-facts-computer-video-game-industry [Accessed 5 January 2018].

European Society for Opinion and Marketing Research, 2009. *Passive Data Collection, Observation and Recording*. [online] Available at: https://www.esomar.org/uploads/public/knowledge-and-standards/codes-and-guidelines/ESOMAR_Codes-and-Guidelines_Passive_Data_Collection-Observation-and-Recording.pdf [Accessed 5 January 2018].

Falk, B. and Darling-Hammond, L, 2009. Documentation and Democratic Education. *Theory into Practice*, 49(1), pp.72–81. https://doi.org/10.1080/00405840903436103.

Featherstone, M., 2000. Archiving Cultures. *British Journal of Sociology*, 51(1), pp.161–184. https://doi.org/10.1111/j.1468-4446.2000.00161.x.

Featherstone, M., 2006. Archive. *Theory, Culture & Society*, 23(2–3), pp.591–596. https://doi.org/10.1177/0263276406023002106.

Feldman, M.S. and Orlikowski, W.J., 2011. Theorizing Practice and Practicing Theory. *Organization Science*, 22(5), pp.1240–1253. https://doi.org/10.1287/orsc.1100.0612.

Flynn, S.J.A., 2001. The Records Continuum Model in Context and its Implications for Archival Practice. *Journal of the Society of Archivists*, 1, pp.79–93. https://doi.org/10.1080/00379810120037522.

Foucault, M., 1979. *Discipline and Punish: The Birth of the Prison*. Translated from the French by A. Sheridan. New York, NY: Vintage Books.

Foucault, M., 1982. *The Archaeology of Knowledge and the Discourse on Language*. Translated from the French by A. Sheridan. New York, NY: Pantheon Books.

Frasca, G., 2003. Ludologists Love Stories, too: Notes from a Debate that Never Took Place. In: *Proceedings from the 2003 Digital Games Research Conference - Level Up*. Utrecht, Netherlands, 4–6 November 2003. Tampere, Finland: DiGRA. pp.92–99. [online] Available at: http://www.digra.org/digital-library/publications/ludologists-love-stories-too-notes-from-a-debate-that-never-took-place [Accessed 5 January 2018].

Frohmann, B., 2004a. *Deflating Information: From Science Studies to Documentation*. Toronto, Canada: University of Toronto Press.

Frohmann, B., 2004b. Documentation Redux: Prolegomenon to (Another) Philosophy of Information. *Library Trends*, 52(3), pp.387–407.

Frohmann, B., 2009. Revisiting "What is a Document?". *Journal of Documentation*, 65(2), pp.291–303. https://doi.org/10.1108/00220410910937624.

Galloway, P., 2005. Preservation of Digital Objects. *Annual Review of Information Science and Technology*, 38(1), pp.549–590. https://doi.org/10.1002/aris.1440380112.

Galloway, P., 2011. Retrocomputing, Archival Research, and Digital Heritage Preservation: A Computer Museum and iSchool Collaboration. *Library Trends*, 59(4), pp.623–636. https://doi.org/doi:10.1353/lib.2011.0014.

Garrelts, N. ed., 2005. *Digital Gameplay: Essays on the Nexus of Game and Gamer*. London, UK: McFarland & Company.

Garton, L., Haythornthwaite, C. and Wellman, B., 1999. Studying On-Line Social Networks. In: S. Jones, ed. 1999. *Doing Internet Research: Critical Issues and Methods for Examining the Net*. Thousand Oaks, CA: SAGE. pp.75–106.

Gatson, S.N., 2011. The Methods, Ethics, and Politics of Representation in Online Ethnography. In: N.K. Denzin and Y.S. Lincoln, eds. 2011. *The SAGE Handbook of Qualitative Research*. 4th ed. Thousand Oaks, CA: SAGE. pp.513–527.

Gee, J.P., 2005. Semiotic Social Spaces and Affinity Spaces: From the Age of Mythology to Today's Schools. In: D. Barton and K. Tusting, eds. 2005. *Beyond Communities of Practice: Language, Power, and Social* Context. Cambridge, UK: Cambridge University Press. pp.214–232.

Gee, J.P. and Hayes, E., 2012. Nurturing Affinity Spaces and Game-Based Learning. In: C. Steinkuehler, K. Squire and S. Barab, eds. 2012. *Games, Learning, and Society: Learning and Meaning in the Digital Age*. Cambridge, UK: Cambridge University Press. pp.129–155.

Geertz, C., 1993. *The Interpretation of Cultures: Selected Essays*. 1st Fontana Press ed. London, UK: Fontana Press.

Geiger, R.S. and Ribes, D., 2010. The Work of Sustaining Order in Wikipedia: The Banning of a Vandal. In: *Proceedings from the 2010 ACM Conference on Computer Supported Cooperative Work*. Savannah, GA, February 06–10 2010. New York, NY: ACM. pp.117–126. https://doi.org/10.1145/1718918.1718941.

Geiger, R.S. and Ribes, D., 2011. Trace Ethnography: Following Coordination through Documentary Practices. In: *Proceedings from the 44th Hawaii International Conference on System Sciences*. Kauai, HI, 4–7 February 2011. New York, NY: IEEE. pp.1-10. https://doi.org/10.1109/HICSS.2011.455.

Gherardi, S., 2012. *How to Conduct a Practice-Based Study: Problems and Methods*. Cheltenham, UK: Edward Elgar.

Gherardi, S., 2016. Sociomateriality in Posthuman Practice Theory. In: A. Hui, T. Schatzki and E. Shove, eds. 2016. *The Nexus of Practices: Connections, Constellations, and Practitioners*. London, UK: Routledge. pp.38–51.

Gibson, W., 1984. *Neuromancer*. New York, NY: Ace Books.

Giddens, A., 1979. *Central Problems in Social Theory: Action, Structure and Contradiction in Social Analysis*. London, UK: Macmillan.

Gilliland, A. and McKemmish, S. (2004). Building an Infrastructure for Archival Research. *Archival Science*, 4(3–4), pp.149–197. https://doi.org/10.1007/s10502-006-6742-6.

Glaser, B. and Strauss, A., 1967. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York, NY: Aldine de Gruyter.

Golub, A., 2010. Being in the World (of Warcraft): Raiding, Realism, and Knowledge Production in a Massively Multiplayer Online Game. *Anthropological Quarterly*, 83(1), pp.17–46.

Gooding, P. and Terras, M., 2008. 'Grand Theft Archive': A Quantitative Analysis of the State of Computer Game Preservation. *International Journal of Digital Curation*, 3(2), pp.19–41. https://doi.org/10.2218/ijdc.V3i2.56.

Gorichanaz, T. and Latham, K.F., 2016. Document Phenomenology: A Framework for Holistic Analysis. *Journal of Documentation*, 72(6), pp.1114–1133. https://doi.org/10.1108/JD-01-2016-0007.

Gosling, V.K. and Crawford, G., 2010. Game Scenes: Theorizing Digital Game Audiences. *Games and Culture*, 6(2), pp.135–154. https://doi.org/10.1177/1555412010364979.

Grant, M.J. and Booth, A., 2009. A Typology of Reviews: An Analysis of 14 Review Types and Associated Methodologies. *Health Information and Libraries Journal*, 26(2), pp.91–108. https://doi.org/10.1111/j.1471- 1842.2009.00848.x.

Guba, E.G., 1992. Relativism. *Curriculum Inquiry*, 22(1), pp.17–23.

Guba, E.G. and Lincoln, Y.S., 1994. Competing Paradigms in Qualitative Research. In: N.K. Denzin and Y.S. Lincoln, eds. 1994. *Handbook of Qualitative Research*. London, UK: SAGE. pp.105–177.

Gupta, A. and Ferguson, J. eds., 1997. *Anthropological Locations: Boundaries and Grounds of a Field Science*. Berkeley, CA: University of California Press.

Guttenbrunner, M., Becker, C. and Rauber, A., 2010. Keeping the Game Alive: Evaluating Strategies for the Preservation of Console Video Games. *International Journal of Digital Curation*, 5(1), pp.64–90. https://doi.org/10.2218/ijdc.v5i1.144.

Halbwachs, M., 1992. *On Collective Memory*. Edited, translated, and with introduction by L.A. Coser. Chicago, IL: University of Chicago Press.

Hamilton, W.A., Garretson, O. and Kerne, A., 2014. Streaming on Twitch: Fostering Participatory Communities of Play Within Live Mixed Media. In: *Proceedings from the 2014 ACM CHI Conference on Human Factors in Computing Systems*. Toronto, Canada, 26 April–01 May 2014. New York, NY: ACM. pp.1315–1324. http://dx.doi.org/10.1145/2556288.2557048.

Hampson Lundh, A. and Dolatkhah, M., 2015. Reading as Dialogical Document Work: Possibilities for Library and Information Science. *Journal of Documentation*, 72(1), pp.127–139. https://doi.org/10.1108/JD-01-2015-0019.

Hampson Lundh, A. and Johnson, G.M., 2015. The Use of Digital Talking Books by People with Print Disabilities: A Literature Review. *Library Hi Tech*, 33(1), pp.54–64. https://doi.org/10.1108/LHT-07-2014-0074.

Haraway, D.J., 1991. *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York, NY: Routledge.

Harper, R.H.R., 1998. *Inside the IMF: An Ethnography of Documents, Technology, and Organisational Action*. San Diego, CA: Academic Press.

Harris, M., 1976. History and Significance of the EMIC/ETIC Distinction. *Annual Review of Anthropology*, 5, pp.329–350.

Harrison, R., 2009. Excavating Second Life: Cyber-Archaeologies, Heritage and Virtual Communities. *Journal of Material Culture*, 14(1), pp.75–106. https://doi.org/10.1177/1359183508100009.

Hartel, J., 2010. Managing Documents at Home for Serious Leisure: A Case Study of the Hobby if Gourmet Cooking. *Journal of Documentation*, 66(6), pp.847–874. https://doi.org/10.1108/00220411011087841.

Harviainen, J.T., 2012. *Systemic Perspectives on Information in Physically Performed Role-play.* Tampere, Finland: Tampere University Press.

Harviainen, J.T. and Hamari, J., 2015. Seek, Share, or Withhold: Information Trading in MMORPGs. *Journal of Documentation*, 71(6), pp.1119–1134. https://doi.org/10.1108/JD-09-2014-0135.

Harviainen, J.T. and Savolainen, R., 2014. Information as Capability for Action and Capital in Synthetic Worlds. In: *Proceedings from the 2014 Information Behaviour Conference*. Leeds, UK, 2–5 September 2014. Borås, Sweden: University of Borås. No pag. [online] Available at: http://InformationR.net/ir/19-4/isic/isic12.html [Accessed 5 January 2018].

Harviainen, J.T. and Vesa, M., 2016. Massively Multiplayer Online Games as Information System: Implications for Organizational Learning. In: T. Kaneda, H. Kanegae, Y. Toyoda and P. Rizzi, eds. 2016. *Simulation and Gaming in the Network Society*. Singapore, Singapore: Springer. pp.199–214.

Harviainen, J.T., Gough, R.D. and Sköld, O., 2012. Information Phenomena in Game-Related Social Media. In: G. Widén and K. Holmberg, eds. 2012. *Social Information Research*. Bingley, UK: Emerald. pp.149–171.

Haverkamp, B.E. and Young, R.A., 2007. Paradigms, Purpose, and the Role of the Literature. *The Counseling Psychologist*, 35(2), pp.265–294. https://doi.org/10.1177/ 0011000006292597.

Heath, C. and Luff, P., 1996. Documents and Professional Practice: 'Bad' Organisational Reasons for 'Good' Clinical Records. In: *Proceedings from the 1996 ACM*

Conference on Computer Supported Cooperative Work. Boston, MA, 16–20 November 1996. New York, NY: ACM. pp.354–363. https://doi.org/10.1145/240080.240342.

Hedstrom, M. and Lee, C., 2002. Significant Properties of Digital Objects: Definitions, Applications, Implications. In: *Proceedings from the 2002 DLM-Forum: Access and Preservation of Electronic Information - Best practices and Solutions*. Barcelona, Spain, 6–8 May 2002. Luxembourg, Luxembourg: Office for Official Publications of the European Communities. pp.218–223.

Hedstrom, M., Lee, C., Olson, J. and Lampe, C., 2006. "The Old Version Flickers More": Digital Preservation from the User's Perspective". *The American Archivist*, 69(1), pp.159–187. https://doi.org/10.17723/aarc.69.1.1765364485n41800.

High Voltage SID Collection, n.d. *The High Voltage SID Collection: Info*. [online] Available at: https://www.hvsc.c64.org/#info [Accessed 5 January 2018].

Hight, C., 2008. The Field of Digital Documentary: A Challenge to Documentary Theorists. *Studies in Documentary Film*, 2(1), pp.3–7. https://doi.org/10.1386/sdf.2.1.3_2.

Hillery, G.A., 1955. Definitions of Community: Areas of Agreement. *Rural Sociology*, 20(2), pp.111–123.

Hine, C., 2000. *Virtual Ethnography*. London, UK: SAGE.

Hjørland, B., 2014. Information Science and its Core Concepts: Levels of Disagreement. In: F. Ibekwe-SanJuan and T.M. Dousa, eds. 2014. *Theories of Information, Communication and Knowledge: A Multidisciplinary Approach*. Dordrecht, Netherlands: Springer. pp.205–235.

Hollister, J., 2016. *In- and Out-of-Character: The Digital Literacy Practices and Emergent Information Worlds of Active Role-Players in a New Massively Multiplayer Online Role-Playing Game*. Tallahassee, FL: Florida State University.

Home of the Underdogs, 2004. *Frequently Asked Questions*. [online] Available at: http://www.homeoftheunderdogs.net/faq.php [Accessed 5 January 2018].

Huizinga, J., 1998. *Homo Ludens: A Study of the Play-Element in Culture*. London, UK: Routledge.

Hunter, R., 2011. Erasing "Property Lines": A Collaborative Notion of Authorship and Textual Ownership on a Fan Wiki. *Computers and Composition*, 28(1), pp.40–56. https://doi.org/10.1016/j.compcom.2010.12.004.

Huuskonen, S. and Vakkari, P., 2015. Selective Clients' Trajectories in Case Files: Filtering Out Information in the Recording Process in Child Protection. *The British Journal of Social Work*, 45(3), pp.792–808. https://doi.org/10.1093/bjsw/bct160.

Huvila, I., 2010. Where Does the Information Come from? Information Source Use Patterns in Wikipedia. *Information Research*, 15(3), no pag. [online] Available at: http://InformationR.net/ir/15-3/paper433.html [Accessed 5 January 2018].

Huvila, I., 2011. The Politics of Boundary Objects: Hegemonic Interventions and the Making of a Document. *Journal of the American Society for Information Science and Technology*, 62(12), pp.2528–2539. https://doi.org/10.1002/asi.21639.

Huvila, I., 2015. Another Wood Between the Worlds? Regimes of Worth and the Making of Meanings in the Work of Archivists. *The Information Society*, 31(2), pp.121–138. https://doi.org/10.1080/01972243.2015.998103.

Ingwersen, P. and Järvelin, K., 2005. *The Turn: Integration of Information Seeking and Retrieval in Context*. Dordrecht, Netherlands: Springer.

Internet Archive, n.d. *The Internet Archive Software Collection*. [online] Available at: https://archive.org/details/software [Accessed 5 January 2018].

Jemielniak, D., 2014. *Common Knowledge? An Ethnography of Wikipedia*. Stanford, CA: Stanford University Press.

Jenkins, H., 2006. *Fans, Bloggers, and Gamers: Exploring Participatory Culture*. New York, NY: New York University Press.

Jenkins, H., 2008. *Convergence Culture: Where Old and New Media Collide*. 1st paperback ed. New York, NY: New York University Press.

Jenkins, H., 2013. *Textual Poachers: Television Fans and Participatory Culture*. 20th ed. London, UK: Routledge.

Jick, T.D., 1979. Mixing Qualitative and Quantitative Methods: Triangulation in Action. *Administrative Science Quarterly*, 24(4), pp.602–611. https://doi.org/10.2307/2392366.

Johnson, R.B., Onwuegbuzie, A.J. and Turner, L.A., 2007. Toward a Definition of Mixed Methods Research. *Journal of Mixed Methods Research*, 1(2), pp.112–133. https://doi.org/10.1177/1558689806298224.

Juul, J., 2011. *Half-Real: Video Games Between Real rules and Fictional Worlds*. 1st paperback ed. Cambridge, MA: MIT Press.

Jørgensen, K., 2013. *Gameworld Interfaces*. Cambridge, MA: MIT Press.

Jørgensen, K., 2016. Gameworld Interfaces as Make-Believe. In: P. Turner and J.T. Harviainen, eds. 2016. *Digital Make-Believe*. Cham, Switzerland: Springer. pp.89–99.

Kameo, N. and Whalen, J., 2015. Organizing Documents: Standard Forms, Person Production and Organizational Action. *Qualitative Sociology*, 38(2), pp.205–229. https://doi.org/10.1007/s11133-015-9302-7.

Karlova, N. and Lee, J.H., 2012. Playing with Information: Information Work in Online Gaming Environments. In: *Proceedings from the 2012 iConference*. Toronto, Canada, 07–10 February 2012. New York: NY: ACM. pp.441–443. https://doi.org/10.1145/2132176.2132241.

Kirschenbaum, M.G., 2012. *Mechanisms: New Media and the Forensic Imagination*. 1st paperback ed. Cambridge, MA: MIT Press.

Knorr-Cetina, K., 1999. *Epistemic Cultures: How the Sciences Make Knowledge*. Cambridge, MA: Harvard University Press.

Knorr-Cetina, K., 2001. Objectual Practice. In: T.R. Schatzki, K. Knorr-Cetina and E. von Savigny, eds. 2001. *The Practice Turn in Contemporary Theory*. London, UK: Routledge. pp.175–188.

Komito, L., 1998. The Net as a Foraging Society: Flexible Communities. *The Information Society*, 14(2), pp.97–106. https://doi.org/10.1080/019722498128908.

Kosto, A.J., 2005. Laymen, Clerics, and Documentary Practices in the Early Middle Ages: The Example of Catalonia. *Speculum: A Journal of Medieval Studies*, 80(1), pp.44–74.

Kraus, K. and Donahue, R., 2012. "Do You Want to Save Your Progress?": The Role of Professional and Player Communities in Preserving Virtual Worlds. *Digital Humanities Quarterly*, 6(2), no pag. [online] Available at: http://www.digitalhumanities.org/dhq/vol/6/2/000129/000129.html [Accessed 5 January 2018].

Krippendorff, K., 2004. *Content Analysis: An Introduction to its Methodology*. Thousand Oaks, CA: SAGE.

Latham, K.F., 2012. Museum Object as Document: Using Buckland's Information Concepts to Understand Museum Experiences. *Journal of Documentation*, 68(1), pp.45–71. https://doi.org/10.1108/00220411211200329.

Latham, K.F., 2014. Experiencing documents. *Journal of Documentation*, 70(4), pp.544–561. https://doi.org/10.1108/JD-01-2013-0013.

Latham, K.F., 2015. Lumping, Splitting and the Integration of Museum Studies with LIS. *Journal of Education for Library and Information Science*, 56(2), pp.130–140.

Latour, B., 1987. *Science in Action: How to Follow Scientists and Engineers through Society*. Cambridge, MA: Harvard University Press.

Latour, B., 1999. *Pandora's Hope: Essays on the Reality of Science Studies*. Cambridge, MA: Harvard University Press.

Latour, B., 2005. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford, UK: Oxford University Press.

Latour, B. and Woolgar, S., 1979. *Laboratory Life: The Social Construction of Scientific Facts*. Beverly Hills, CA: SAGE.

Lave, J., 1988. *Cognition in Practice: Mind, Mathematics and Culture in Everyday Life*. Cambridge, UK: Cambridge University Press.

Lave, J. and Wenger, E., 1991. *Situated Learning: Legitimate Peripheral Participation*. Cambridge, UK: Cambridge University Press.

Law, J., 2004. *After Method: Mess in Social Science Research*. London, UK: Routledge.

Law, J. and Lynch, M., 1988. Lists, Field Guides, and the Descriptive Organization of Seeing: Birdwatching as an Exemplary Observational Activity. *Human Studies*, 11(2–3), pp.271–303.

Law, J. and Urry, J., 2004. Enacting the Social. *Economy and Society*, 33(3), pp.390–410. https://doi.org/10.1080/0308514042000225716.

Lee, J.H., Clarke, R.I. and Perti, A., 2015a. Empirical Evaluation of Metadata for Video Games and Interactive Media. *Journal of the Association for Information Science and Technology*, 66(12), pp.2609–2625. https://doi.org/10.1002/asi.23357.

Lee, J.H., Clarke, R.I. and Rossi, S., 2015b. A Qualitative Investigation of Users' Discovery, Access, and Organization of Video Games as Information Objects. *Journal of Information Science*, 42(6), pp.833–850. https://doi.org/10.1177/0165551515618594.

Leininger, M., 1992. Current Issues, Problems, and Trends to Advance Qualitative Paradigmatic Research Methods for the Future. *Qualitative Health Research*, 2(4), pp.392–415. https://doi.org/10.1177/104973239200200403.

Levy, D.M., 2001. *Scrolling Forward: Making Sense of Documents in the Digital Age*. New York, NY: Arcade.

Lévy, P., 1997. *Collective Intelligence: Mankind's Emerging World in Cyberspace*. New York, NY: Plenum Trade.

Lévi-Strauss, C., 1973. *The Savage Mind*. Chicago, IL: University of Chicago Press.

Lindh, K., 2015. *Breathing Life into a Standard: The Configuration of Resuscitation in Practices of Informing*. Lund, Sweden: Lund University.

Lloyd, A., 2007. Learning to Put Out the Red Stuff: Becoming Information Literate through Discursive Practice. *The Library Quarterly*, 77(2), pp.181–198. https://doi.org/10.1086/517844.

Lloyd, A., 2009. Informing Practice: Information Experiences of Ambulance Officers in Training and On-Road Practice. *Journal of Documentation*, 65(3), pp.396–419. https://doi.org/10.1108/00220410910952401.

Lloyd, A. and Talja, S., 2010. *Practising Information Literacy: Bringing Theories of Learning, Practice and Information Literacy Together*. Wagga Wagga, Australia: Centre for Information Studies.

Lowood, H., 2004. Playing History with Games: Steps Towards Historical Archives of Computer Gaming. Presented at the *Electronic Media Group - Annual Meeting of the American Institute for Conservation of Historic and Artistic Works*. Portland, OR, 14 June 2004. pp.1-13. [online] Available at: http://cool.conservation-us.org/coolaic/sg/emg/library/pdf/lowood/Lowood-EMG2004.pdf [Accessed 5 January 2018].

Lowood, H., 2009. Memento Mundi: Are Virtual Worlds History? In: *Proceedings from the 6th International Conference on Preservation of Digital Objects*. San Francisco, CA, 5–6 October 2009. pp.121–128. [online] Available at: https://escholarship.org/uc/item/2gs3p6jx [Accessed 5 January 2018].

Lowood, H., 2011. Perfect Capture: Three Takes on Replay, Machinima and the History of Virtual Worlds. *Journal of Visual Culture*, 10(1), pp.113–124. https://doi.org/10.1177/1470412910391578.

Luff, P., Hindmarsh, J. and Heath, C. eds., 2000. *Workplace Studies: Recovering Work Practice and Informing System Design*. Cambridge, UK: Cambridge University Press.

Lund, A., 2015. *Frihetens rike: Wikipedianer om sin praktik, sitt produktionssätt och kapitalismen*. Stockholm, Sweden: Tankekraft förlag.

Lund, N.W., 2009. Document Theory. *Annual Review of Information Science and Technology*, 43(1), pp.399–432. https://doi.org/10.1002/aris.2009.1440430116.

Lund, N.W., 2010. Document, Text and Medium: Concepts, Theories and Disciplines. *Journal of Documentation*, 66(5), pp.734–749. https://doi.org/10.1108/00220411011066817.

Lund, N.W. and Buckland, M., 2009. Document, documentation, and the Document Academy: introduction. *Archival Science*, 8, pp.161–164. https://doi.org/10.1007/s10502-009-9076-3.

Lund, N.W., Gorichanaz, T. and Latham, K.F., 2016. A Discussion on Document Conceptualization. *Proceedings from the Document Academy*, 3(2), pp.1-9. [online] Available at: http://ideaexchange.uakron.edu/docam/vol3/iss2/1 [Accessed 5 January 2018].

Lynch, M., 1993. *Scientific Practice and Ordinary Action: Ethnomethodology and Social Studies of Science*. Cambridge, UK: Cambridge University Press.

MacDonough, K., Fraimow, R., Erdman, D., Gronsbell, K. and Titkemeyer, E., 2016. On the EVE of Preservation: Conserving a Complex Universe. In: M. Carter, K. Bergstrom and D. Woodford, eds. 2016. *Spaceships are Serious Business: An EVE Online Reader*. Minneapolis, MN: University of Minnesota Press. pp.210–220.

Malaby, T.M., 2007. Beyond Play: A New Approach to Games. *Games and Culture*, 2(2), pp.95–113. https://doi.org/10.1177/1555412007299434.

MAME, 2017. *The Official Site of the MAME Development Team*. [online] Available at: http://www.mamedev.org [Accessed 5 January 2018].

Marcus, G.E., 1995. Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography. *Annual Review of Anthropology*, 24, pp.95–117. https://doi.org/10.1146/annurev.an.24.100195.000523.

Markham, A.N., 2013. Fieldwork in Social Media: What Would Malinowski Do? *Qualitative Communication Research*, 2(4), pp.434–446. https://doi.org/10.1525/qcr.2013.2.4.434.

Markham, A.N. and Baym, N.K., 2009. What Constitutes Quality in Qualitative Internet Research? In: In A.N. Markham and N.K. Baym, eds. 2009. *Internet Inquiry: Conversations About Method*. London, UK: SAGE. pp.173–198.

Markham, A. and Buchanan, E., 2012. *Ethical Decision-Making and Internet Research: Recommendations from the AoIR Ethics Working Committee (Version 2.0)*. [online] Available at: https://aoir.org/ethics [Accessed 5 January 2018].

Martin, C. and Steinkuehler, C., 2010. Collective Information Literacy in Massively Multiplayer Online Games. *E-Learning and Digital Media*, 7(4), pp.355–365. https://doi.org/10.2304/elea.2010.7.4.355.

McDonough, J., 2011. Packaging Videogames for Long-Term Preservation: Integrating FRBR and the OAIS Reference Model. *Journal of the American Society for Information Science and Technology*, 62(1), pp.171–184. https://doi.org/10.1002/asi.21412.

McDonough, J., 2012. 'Knee-Deep in the Data': Practical Problems in Applying the OAIS Reference Model to the Preservation of Computer Games. In: *Proceedings from the 45th Hawaii International Conference on System Sciences*. Maui, HI, 04–07 January 2012. New York, NY: IEEE. pp.1625–1634. https://doi.org/10.1109/HICSS.2012.1.

McDonough, J. and Olendorf, R., 2011. Saving Second Life: Issues in Archiving a Complex, Multi-User Virtual World. *International Journal of Digital Curation*, 6(2), pp.89–108. https://doi.org/10.2218/ijdc.v6i2.192.

McDonough, J., Olendorf, R., Kirschenbaum, M., Kraus, K., Reside, D., Donahue, R. Phelps, R., Egert, C., Lowood, H. and Rojo S., 2010. *Preserving Virtual Worlds Final Report*. [online] Available at: http://hdl.handle.net/2142/17097 [Accessed 5 January 2018].

McKenzie, P.J., 2003. A Model of Information Practices in Accounts of Everyday-Life Information Seeking. *Journal of Documentation*, 59(1), pp.19–40. https://doi.org/10.1108/00220410310457993.

McKenzie, P.J. and Davies, E., 2010. Documentary Tools in Everyday Life: The Wedding Planner. *Journal of Documentation*, 66(6), pp.788–806. https://doi.org/10.1108/00220411011087814.

Miller, F., 1981. Social History and Archival Practice. *The American Archivist*, 44(2), pp.113–124. https://doi.org/10.17723/aarc.44.2.r5x54qq0r71275w4.

Minerva Working Group 6, 2004. *Good Practices Handbook*. [online] Available at: http://www.minervaeurope.org/publications/goodhand.htm [Accessed 5 January 2018].

Mittell, J., 2009. Sites of Participation: Wiki Fandom and the Case of Lostpedia. *Transformative Works and Cultures*, 3, no pag. https://doi.org/10.3983/twc.2009.0118.

Mittell, J., 2013. Wikis and Participatory Fandom. No pag. [online] Available at: https://justtv.wordpress.com/2010/09/18/wikis-and-participatory-fandom [Accessed 5 January 2018]. Published in: A. Delwiche and J. Jacobs Henderson, eds. 2013. *The Participatory Cultures Handbook*. New York, NY: Routledge. pp.35–42.

MobyGames, 2017. *The MobyGames Standards and Practices*. [online] Available at: http://www.mobygames.com/info/standards [Accessed 5 January 2018].

MobyGames, 2018. *Design Goals and Manifesto*. [online] Available at: http://www.mobygames.com/info/faq1#a [Accessed 5 January 2018].

Monnens, D., Armstrong, A., Ruggil, J., McAllister, K., Vowell, Z., Donahue, R. and H. Lowood, ed., 2009. *Before It's Too Late: A Digital Game Preservation White Paper*. Raleigh, NC: Lulu Press. [online] Available at: http://www.lulu.com/shop/henry-lowood-and-devin-monnens-and- andrew-armstrong-and-judd-ruggill/before-its-too-late-a-digital-game-preservation-white-paper/ebook/product-17410942.html [Accessed 5 January 2018].

Mortensen, P., 1999. The Place of Theory in Archival Practice. *Archivaria*, 47, p.1–26.

Murphy, D., 2013. Hacking Public Memory: Understanding the Multiple Arcade Machine Emulator. *Games and Culture*, 8(1), pp.43–53. https://doi.org/10.1177/1555412013478687.

Murray, J.H., 1997. *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. New York, NY: Free Press.

Myers, D., 2010. *Play Redux: The Form of Computer Games*. Ann Arbor, MI: The University of Michigan Press.

Mystery House Taken Over (n.d.). *Mystery House Taken Over: About*. [online] Available at: http://transition.turbulence.org/Works/mystery/about.php [Accessed 5 January 2018].

Mäyrä, F., 2008. *An Introduction to Game Studies: Games in Culture*. London, UK: SAGE.

Nardi, B.A., 2010. *My Life as a Night Elf Priest: An Anthropological Account of World of Warcraft*. Ann Arbor, MI: University of Michigan Press.

Nardi, B.A. and Harris, J., 2006. Strangers and Friends: Collaborative Play in World of Warcraft. In: *Proceedings of the 2006 ACM Conference on Computer Supported Cooperative Work*. Banff, Canada, 04–08 November 2006. New York, NY: ACM. pp.149–158. https://doi.org/10.1145/1180875.1180898.

National Library of Sweden (2015). *Datorspel och interaktiva medier*. [online] Available at: http://www.kb.se/samlingarna/Datorspel-och-interaktiva-medier [Accessed 5 January 2018].

National Museum of Science and Technology, 2016. *Dataspelens världar*. [online] Available at: https://www.tekniskamuseet.se/samlingar/forskning/dataspelens-varldar [Accessed 5 January 2018].

National Museum of Science and Technology, n.d. *National Museum of Science and Technology*. [online] Available at: https://www.tekniskamuseet.se [Accessed 5 January 2018].

National Videogame Arcade, 2018. *The National Videogame Arcade*. [online] Available at: https://www.thenva.com [Accessed 5 January 2018].

National Videogame Foundation, 2018. *The National Videogame Foundation*. [online] Available at: http://www.thenationalvideogamefoundation.org [Accessed 5 January 2018].

Newbury, D., 2002. Documentary Practices and Working-Class Culture: An Interview with Murray Martin (Amber Films and Side Photographic Gallery). *Visual Studies*, 17(2), pp.113–128. https://doi.org/10.1080/1472586022000032198.

Newman, J., 2004. *Videogames*. London, UK: Routledge.

Newman, J., 2008. *Playing with Videogames*. London, UK: Routledge.

Newman, J., 2011. (Not) Playing Games: Player-Produced Walkthroughs as Archival Documents of Digital Gameplay. *The International Journal of Digital Curation*, 6(2), pp.109–127. https://doi.org/10.2218/ijdc.v6i2.206.

Newman, J., 2012a. *Best Before: Videogames, Supersession and Obsolescence*. London, UK: Routledge.

Newman, J., 2012b. Illegal Deposit: Game Preservation and/as Software Piracy. *Convergence: The International Journal of Research into New Media Technologies*, 19(1), pp.45–61. https://doi.org/10.1177/1354856512456790.

Newman, J., 2012c. Ports and Patches: Digital Games as Unstable Objects. *Convergence: The International Journal of Research into New Media Technologies*, 18(2), pp.135–142. https://doi.org/10.1177/1354856511433688.

Newman, J. and Simons, I., 2009. Make Videogames History: Game Preservation and The National Videogame Archive. In: *Proceedings from the 2009 Digital Games Research Conference - Breaking New Ground: Innovation in Games, Play, Practice and Theory*. London, UK, 1–4 September 2009. Tampere, Finland: DiGRA. pp.1-7. [online] Available at: http://www.digra.org/digital-library/publications/make-videogames-history-game-preservation-and-the-national-videogame-archive [Accessed 5 January 2018].

Ngin, P.M., 1994. Recordkeeping Practices of Nurses in Hospitals. *American Archivist*, 57(4), pp.616–630.

Nicolini, D., 2013. *Practice Theory, Work, and Organization: An Introduction*. Oxford, UK: Oxford University Press.

Nicolini, D. and Monteiro, P., 2016. The Practice Approach: For a Praxeology of Organisational and Management Studies. In: A. Langley and H. Tsoukas, eds. 2016. *The SAGE Handbook of Process Organization Studies*. London, UK: SAGE. pp.110–126. Version read: SAGE Knowledge online version, available at http://sk.sagepub.com/reference/the-sage-handbook-of-process-organization-studies [Accessed 5 January 2018], pagination may vary between the online version and the printed book.

Nissenbaum, H.F., 2010. *Privacy in Context: Technology, Policy, and the Integrity of Social Life*. Stanford, CA: Stanford Law Books.

Nolin, J. and Åström, F., 2010. Turning Weakness into Strength: Strategies for Future LIS. *Journal of Documentation*, 66(1), pp.7–27. https://doi.org/10.1108/00220411011016344.

Nora, P., 1989. Between Memory and History: Les Lieux de Mémoire. *Representations*, 26, pp.7–24. https://doi.org/10.2307/2928520.

Olson, H.A., 2002. *Power to Name: Locating the Subject Representation in Libraries*. Boston, MA: Kluwer.

Orlikowski, W.J., 2002. Knowing in Practice: Enacting a Collective Capability in Distributed Organizing. *Organization Science*, 13(3), pp.249–273. https://doi.org/10.1287/orsc.13.3.249.2776.

Orlikowski, W.J., 2007. Sociomaterial Practices: Exploring Technology at Work. *Organization Studies*, 28(9), pp.1435–1448. https://doi.org/10.1177/0170840607081138.

Orr, J.E., 1996. Talking About Machines: An Ethnography of a Modern Job. Ithaca, NY: ILR Press.

Ortner, S.B., 1984. Theory in Anthropology since the Sixties. *Comparative Studies in Society and History*, 26(1), pp.126–166. https://doi.org/10.1017/S0010417500010811.

Pearce, C., 2005. Theory Wars: An Argument Against Arguments in the So-Called Ludology/Narratology Debate. In: *Proceedings from the 2005 Digital Games Research Conference - Changing Views: Worlds in Play*. Vancouver, Canada, 16–20 June 2005. Tampere, Finland: DiGRA. pp.1-6. [online] Available at: http://homes.lmc.gatech.edu/~cpearce3/PearcePubs/PearceDiGRA05.pdf [Accessed 5 January 2018].

Pearce, C., 2011. *Communities of Play: Emergent Cultures in Multiplayer Games and Virtual Worlds*. First paperback ed. Cambridge, MA: MIT Press.

Pilerot, O., 2011. *On Documentary Practices*. pp.1-10. [Online] Available at: https://www.researchgate.net/profile/Ola_Pilerot/publication/268199397_On_documentary_practices/links/55b76b9108ae9289a08be51d.pdf [Accessed 5 January 2018].

Pilerot, O., 2014a. *Design Researchers' Information Sharing: The Enactment of a Discipline*. Borås, Sweden: University of Borås.

Pilerot, O., 2014b. Making Design Researchers' Information Sharing Visible through Material Objects. *Journal of the Association for Information Science and Technology*, 65(10), pp.2006–2016. https://doi.org/10.1002/asi.23108.

Pilerot, O., Hammerfelt, B. and Moring, C., 2017. The Many Faces of Practice Theory in Library and Information Studies. *Information Research*, 22(1). [online] Available at: http://www.informationr.net/ir/22-1/colis/colis1602.html [Accessed 5 January 2018].

Pinchbeck, D., Anderson, D., Delve, J., Alemu, G., Ciuffreda, A. and Lange, A., 2009. Emulation as a Strategy for the Preservation of Games: The KEEP Project. In: *Proceedings from the 2009 Digital Games Research Conference - Breaking New*

Ground: Innovation in Games, Play, Practice and Theory. London, UK, 1–4 September 2009. Tampere, Finland: DiGRA. pp.1-5. [online] Available at: http://www.digra.org/digital-library/publications/emulation-as-a-strategy-for-the-preservation-of-games-the-keep-project [Accessed 5 January 2018].

Porter, C.E., 2004. A Typology of Virtual Communities: A Multi-Disciplinary Foundation for Future Research. *Journal of Computer-Mediated Communication*, 10(1), no pag. https://doi.org/10.1111/j.1083-6101.2004.tb00228.x.

Postill, J., 2010. Introduction: Theorising Media and Practice. In: J. Postill and B. Bräuchler, eds. 2010. *Theorising Media and Practice*. New York, NY: Berghahn Books. pp.1–32.

Prax, P., 2016. *Co-Creative Game Design as Participatory Alternative Media*. Uppsala, Sweden: Acta Universitatis Upsaliensis.

Pötzsch, H. and Šisler, V., 2016. Playing Cultural Memory: Framing History in Call of Duty: Black Ops and Czechoslovakia 38–89: Assassination. *Games and Culture*. https://doi.org/10.1177/1555412016638603.

Rainie, H. and Wellman, B., 2012. *Networked: The New Social Operating System*. Cambridge, MA: MIT Press.

Reagle, J.M., 2010. *Good Faith Collaboration: The Culture of Wikipedia*. Cambridge, MA: MIT Press.

Reckwitz, A., 2002a. The Status of the "Material" in Theories of Culture: From "Social Structure" to "Artefacts". *Journal for the Theory of Social Behaviour*, 32(2), pp.195–217. https://doi.org/10.1111/1468-5914.00183.

Reckwitz, A., 2002b. Toward a Theory of Social Practices: A Development in Culturalist Theorizing. *European Journal of Social Theory*, 5(2), pp.243–263. https://doi.org/10.1177/13684310222225432.

Reddit, 2016. *Audience and Demographic*. [online] Available at: https://www.reddithelp.com/en/categories/advertising/advertising-101/audience-and-demographic [Accessed 5 January 2018].

Reddit, 2017. *Reddit, Inc. Privacy Policy*. [online] Available at: https://www.reddit.com/help/privacypolicy [Accessed 5 January 2018].

Rehn, A., 2001. *Electronic Potlatch: A Study of New Technologies and Primitive Economic Behavior*. Stockholm, Sverige: KTH.

Rheingold, H., 2000. *The Virtual Community: Homesteading on the Electronic Frontier*. First MIT Press ed. Cambridge, MA: MIT Press.

Ridener, J., 2009. *From Polders to Postmodernism: A Concise History of Archival Theory*. Duluth, MN: Litwin Books.

Riles, A. ed., 2006a. *Documents: Artifacts of Modern Knowledge*. Ann Arbor, MI: University of Michigan Press.

Riles, A., 2006b. Introduction: In Response. In: A. Riles, ed. 2006. *Artifacts of Modern Knowledge*. Ann Arbor, MI: University of Michigan Press. pp.1–38.

Rogers, M., 2012. Contextualizing Theories and Practices of Bricolage Research. *The Qualitative Report*, 17(48), pp.1–17. [Online] Available at: http://nsuworks.nova.edu/tqr/vol17/iss48/3 [Accessed 5 January 2018].

Rothenberg, J., 1999. *Avoiding Technological Quicksand: Finding a Viable Technical Foundation for Digital Preservation*. Washington, DC: CLIR. [online] Available at: https://www.clir.org/pubs/reports/rothenberg [Accessed 5 January 2018].

Rouse, J., 1996. *Engaging Science: How to Understand its Practices Philosophically*. Ithaca, NY: Cornell University Press.

Rouse, J., 2001. Two Concepts of Practices. In: T.R. Schatzki, K. Knorr-Cetina and E. von Savigny, eds. 2001. *The Practice Turn in Contemporary Theory*. London, UK: Routledge. pp.189–198.

Salen, K. and Zimmerman, E., 2004. *Rules of Play: Game Design Fundamentals*. Cambridge, MA: MIT Press.

Sanders, C., 2015. Examining Public Health Nurses' Documentary Practices: The Impact of Criminalizing HIV Non-Disclosure on Inscription Styles. *Critical Public Health*, 25(4), pp.398–409. https://doi.org/10.1080/09581596.2015.1019834.

Savolainen, R., 2007. Information Behavior and Information Practice: Reviewing the "Umbrella Concepts" of Information-Seeking Studies. *The Library Quarterly*, 77(2), pp.109–132. https://doi.org/10.1086/517840.

Savolainen, R., 2008. *Everyday Information Practices: A Social Phenomenological Perspective*. Lanham, MD: Scarecrow Press.

Schatzki, T.R., 1996. *Social Practices: A Wittgensteinian Approach to Human Activity and the Social*. Cambridge, UK: Cambridge University Press.

Schatzki, T.R., 2001. Introduction: Practice Theory. In: T.R. Schatzki, K. Knorr-Cetina and E. von Savigny, eds. 2001. *The Practice Turn in Contemporary Theory*. London, UK: Routledge. pp.1–14.

Schatzki, T.R., 2002. *The Site of the Social: A Philosophical Account of the Constitution of Social Life and Change*. University Park, PA: Pennsylvania State University Press.

Schatzki, T., 2006. The Time of Activity. *Continental Philosophy Review*, 39(2), pp.155–182. https://doi.org/10.1007/s11007-006-9026-1.

Schatzki, T., 2010. Materiality and Social Life. *Nature and Culture*, 5(2), pp.123–149. http://dx.doi.org/10.3167/nc.2010.050202.

Schatzki, T., 2011. Where the Action is (On Large Social Phenomena such as Sociotechnical Regimes). pp.1-31. [online] Available at: http://www.sprg.ac.uk/publications-amp-presentations/discussion-papers/schatzki-practice-theory-macro-phenomena-sociotechnical-regimes [Accessed 5 January 2018].

Schatzki, T.R., 2012. A Primer on Practices. In: J. Higgs, ed. 2012. *Practice-Based Education: Perspectives and Strategies*. Rotterdam, Netherlands; SensePublishers. pp.13–26.

Schatzki, T.R., 2016. Sayings, Texts, and Discursive Formations. In: A. Hui, T. Schatzki and E. Shove, eds. 2016. *The Nexus of Practices: Connections, Constellations, and Practitioners*. London, UK: Routledge. pp.126–140.

Schuurman, N., 2008. Database Ethnographies Using Social Science Methodologies to Enhance Data Analysis and Interpretation. *Geography Compass*, 2(5), pp.1529–1548. http://dx.doi.org/10.1111/j.1749-8198.2008.00150.x.

Schwartz, J.M. and Cook, T., 2002. Archives, Records, and Power: The Making of Modern Memory. *Archival Science*, 2(1–2), pp.1–19. https://doi.org/10.1007/BF02435628.

ScummVM, 2017. *ScummVM*. [online] Available at: http://scummvm.org [Accessed 5 January 2018].

Shankar, K., 2009. Ambiguity and Legitimate Peripheral Participation in the Creation of Scientific Documents. *Journal of Documentation*, 65(1), pp.151–165. https://doi.org/10.1108/00220410910926167.

Shaw, A., 2010. What is Video Game Culture? Cultural Studies and Game Studies. *Games and Culture*, 5(4), pp.403–424. https://doi.org/10.1177/1555412009360414.

Shipman, F.M. and Marshall, C.C., 2014. Creating and Sharing Records of Multi-player Online Game Play: Practices and Attitudes. In: *AAAI Conference on Weblogs and Social Media*. Ann Arbor, MI, 1–4 June. Paolo Alto, CA: AAAI. pp.456–465. [online] Available at: https://www.aaai.org/ocs/index.php/ICWSM/ICWSM14/paper/view/8111 [Accessed 5 January 2018].

Shove, E., Pantzar, M. and Watson, M., 2012. *The Dynamics of Social Practice: Everyday Life and how it Changes*. London, UK: SAGE.

Skare, R. and Lund, N.W., 2014. Facebook: A Document Without Borders? *Proceedings from the Document Academy*, 1(1), pp.1–9. [online] Available at: http://ideaexchange.uakron.edu/docam/vol1/iss1/7 [Accessed 5 January 2018].

Skeggs, B. and Yuill, S., 2016. The Methodology of a Multi-Model Project Examining how Facebook Infrastructures Social Relations. *Information, Communication & Society*, 10, pp.1356–1372. https://doi.org/10.1080/1369118X.2015.1091026.

Sköld, O., 2011. On Social Media and Document Theory. In: I. Huvila, K. Holmberg and M. Kronqvist-Berg, eds. 2011. *Proceedings from the 2011 International Conference on Information Science and Social Media*. Åbo, Finland, 24–26 August 2011. Åbo, Finland: Åbo Akademi University. pp.73–82. [online] Available at: https://issuu.com/informationsvetenskap/docs/issome2011 [Accessed 5 January 2018].

Sköld, O., 2013. Tracing Traces: A Document-Centred Approach to the Preservation of Virtual World Communities. Information Research, 18(3), no pag. [online] Available at: http://www.informationr.net/ir/18-3/colis/paperC09.html [Accessed 5 January 2018].

Sköld, O., 2015. Documenting Virtual World Cultures: Memory-Making and Documentary Practices in the City of Heroes Community. *Journal of Documentation*, 71(2), pp.294–316. https://doi.org/10.1108/JD-11-2013-0146.

Sköld, O., 2017. Getting-to-Know: Inquiries, Sources, Methods, and the Production of Knowledge on a Videogame Wiki. *Journal of Documentation*, 73(6), pp.1299–1321. https://doi.org/10.1108/JD-11-2016-0145.

Sköld, O., 2018. Understanding the "Expanded Notion" of Videogames as Archival Objects: A Review of Priorities, Methods, and Conceptions. *Journal of the Association for Information Science and Technology*, 69(1), pp.134–145. https://doi.org/10.1002/asi.23875.

Sköld, O., Adams, S., Harviainen, J.T. and Huvila, I., 2015. Studying Games from the Viewpoint of Information. In: P. Lankoski and S. Björk, eds. 2015. *Game Research Methods: An Overview*. Pittsburg, PA: ETC Press. pp.57-73.

Smith, D.E., 1974. The Social Construction of Documentary Reality. *Sociological Inquiry*, 44(4), pp.257–268. https://doi.org/10.1111/j.1475-682X.1974.tb01159.x.

Smith, D.E., 1999. *Writing the Social: Critique, Theory, and Investigations*. Toronto, Canada: University of Toronto Press.

Snickars, P., 2010. Archival Transitions: Some Digital Propositions. In: K. Bolton and J. Olsson, eds. 2010. *Media, Popular Culture, and the American Century*. Stockholm: KB. pp.301–329. [online] Available at: http://pellesnickars.se/2010/11/archival-transitions [Accessed 5 January 2018].

Stanford Libraries, n.d. *Stephen M. Cabrinety Collection in the History of Microcomputing*. [online] Available at: https://searchworks.stanford.edu/view/4084859 [Accessed 5 January 2018].

Stebbins, R.A., 2001. *Exploratory Research in the Social Sciences*. Thousand Oaks, CA: SAGE.

Steinkuehler, C., 2007. Massively Multiplayer Online Gaming as a Constellation of Literacy Practices. *E-Learning and Digital Media*, 4(3), pp.297–318. https://doi.org/10.2304/elea.2007.4.3.297.

Steinkuehler, C. and Duncan, S., 2008. Scientific Habits of Mind in Virtual Worlds. *Journal of Science Education and Technology*, 17(6), pp.530–543. https://doi.org/10.1007/s10956-008-9120-8.

Stockholms spelmuseum, n.d. *Stockholms spelmuseum*. [online] Available at: https://stockholmsspelmuseum.se [Accessed 5 January 2018].

Strong National Museum of Play, 2018a. *Brian Sutton-Smith Library and Archives of Play*. [online] Available at: http://www.museumofplay.org/about/library-archives-play [Accessed 5 January 2018].

Strong National Museum of Play, 2018b. *International Center for the History of Electronic Games*. [online] Available at: http://www.museumofplay.org/about/icheg [Accessed 5 January 2018].

Stuckey, H., Swalwell, M., Ndalianis, A. and de Vries, D., 2013a. Remembrance of Games Past: The Popular Memory Archive. In: *Proceedings of The 9th Australasian Conference on Interactive Entertainment: Matters of Life and Death*. Melbourne, Australia, 30 September–01 October 2013. New York, NY: ACM. pp.1-7. https://doi.org/10.1145/2513002.2513570.

Stuckey, H., Swalwell, M. and Ndalianis, A., 2013b. The Popular Memory Archive: Collecting and Exhibiting Player Culture from the 1980s. In: A. Tatnall, T. Blyt and R. Johnson, eds. 2013. *Making the History of Computing Relevant. IFIP Advances in Information and Communication Technology*. Berlin, Germany: Springer. pp.215–225. https://doi.org/10.1007/978-3-642-41650-7_20.

Sundin, O., 2011. Janitors of Knowledge: Constructing Knowledge in the Everyday Life of Wikipedia Editors. *Journal of Documentation*, 67(5), pp.840–862. https://doi.org/10.1108/00220411111164709.

Sundin, O. and Johannisson, J., 2005. Pragmatism, Neo-Pragmatism and Sociocultural Theory: Communicative Participation as a Perspective in LIS. *Journal of Documentation*, 61(1), pp.23–43. https://doi.org/10.1108/00220410510577998.

Sutton-Smith, B., 1997. *The Ambiguity of Play*. Cambridge, MA: Harvard University Press.

Swalwell, M., 2007. The Remembering and the Forgetting of Early Digital Games: From Novelty to Detritus and Back Again. *Journal of Visual Culture*, 6(2), pp.255–273. https://doi.org/10.1177/1470412907078568.

Swalwell, M., 2009. Towards the Preservation of Local Computer Game Software: Challenges, Strategies, Reflections. *Convergence: The International Journal of Research into New Media Technologies*, 15(3), pp.263–279. https://doi.org/10.1177/1354856509105107.

Swalwell, M., 2014. Moving on from the Original Experience: Games History, Preservation and Presentation. In: *Proceedings of the 2013 DiGRA International Conference: DeFragging Game Studies*. Atlanta, GA, 26–29 August 2013. Tampere, Finland: DiGRA. pp.1-13. [online] Available at: http://www.digra.org/digital-library/publications/moving-on-from-the-original-experience-games-history-preservation-and-presentation [Accessed 5 January 2018].

Swedish Games Industry, 2017. *Swedish Game Developer Index 2017–2018*. [online] Stockholm, Sweden: Swedish Games Industry. Available at: http://www.dataspelsbranschen.se/media/158227/gamedeveloperindex%202017.pdf [Accessed 5 January 2018].

Swedish Research Council, 2017. *God forskningssed*. Stockholm, Sweden: Vetenskapsrådet. [online] Available at: https://publikationer.vr.se/produkt/god-forskningssed [Accessed 5 January 2018].

Swidler, A., 2001. What Anchors Cultural Practices. In: T.R. Schatzki, K. Knorr–Cetina and E. von Savigny, eds. 2001. *The Practice Turn in Contemporary Theory*. London, UK: Routledge. pp.74–92.

Takhteyev, Y., 2013. Retrocomputing as Preservation and Remix. *Library Hi Tech*, 31(2), pp.355–370. https://doi.org/10.1108/07378831311329103.

Talja, S., 2005. The Domain Analytic Approach to Scholar's Information Practices. In: K.E. Fisher, S. Erdelez and L. McKechnie, eds. 2005. *Theories of Information Behavior*. Medford, NJ: Information Today. pp.123–127.

Talja, S., 2010. Jean Lave's Practice Theory. In: G.J. Leckie, L.M. Given and J. Buschman, eds. 2010. *Critical Theory for Library and Information Science: Exploring the Social from Across the Disciplines*. Santa Barbara, CA: Libraries Unlimited. pp.205–220.

Talja, S. and Hansen, P., 2006. Information Sharing. In: A. Spink and C. Cole, eds. 2006. *New Directions in Human Information Behavior*. Dordrecht, Netherlands: Springer. pp.113–134.

Talja, S. and Nyce, J.M., 2015. The Problem with Problematic Situations: Differences between Practices, Tasks, and Situations as Units of Analysis. *Library & Information Science Research*, 37(1), pp.61–67. https://doi.org/10.1016/j.lisr.2014.06.005.

Talja, S., Tuominen, K. and Savolainen, R., 2005. "Isms" in Information Science: Constructivism, Collectivism and Constructionism. *Journal of Documentation*, 61(1), pp.79–101. https://doi.org/10.1108/00220410510578023.

Taylor, T.L., 2006. *Play Between Worlds: Exploring Online Game Culture*. Cambridge, MA: MIT Press.

Terrone, E., 2014. Traces, Documents, and The Puzzle of "Permanent Acts". *The Monist*, 97(2), pp.161–178. https://doi.org/10.5840/monist201497211.

Thibodeau, K., 2002. Overview of Technological Approaches to Digital Preservation and Challenges in Coming Years. In: *Proceedings from the State of Digital Preservation: An International Perspective*. Washington, DC USA, 24–25 April 2002. Washington, DC: CLIR. No pag. [online] Available at https://www.clir.org/pubs/reports/pub107/thibodeau [Accessed 5 January 2018].

Toton, S., 2008. Cataloging Knowledge: Gender, Generative Fandom, and the Battlestar Wiki. *Flow*, 7(14), no pag. [online] Available at: https://www.flowjournal.org/2008/01/cataloging-knowledge-gender-generative-fandom-and-the-battlestar-wiki [Accessed 5 January 2018].

Tourney, M.M., 2003. Caging Virtual Antelopes: Suzanne Briet's Definition of Documents in the Context of the Digital Age. *Archival Science*, 3, pp.291–311. https://doi.org/10.1007/s10502-004-4038-2.

Trace, C.B., 2002. What is Recorded is Never Simply 'What Happened': Record Keeping in Modern Organizational Culture. *Archival Science*, 2(1–2), pp.137–159. https://doi.org/10.1007/BF02435634.

Trace, C.B., 2007. Information Creation and the Notion of Membership. *Journal of Documentation*, 63(1), pp.142–164. https://doi.org/10.1108/00220410710723920.

Trace, C.B., 2011. Documenting Work and Working Documents: Perspectives from Workplace Studies, CSCW, and Genre Studies. In: *Proceedings from the 44th Hawaii International Conference on System Sciences*. Kauai, HI, 4–7 February 2011. New York, NY: IEEE. pp.1-10. https://doi.org/10.1109/HICSS.2011.170.

Turner, D., 2010. Orally-Based Information. *Journal of Documentation*, 66(3), pp.370–383. https://doi.org/10.1108/00220411011038458.

Turner, D., 2012. Oral Documents in Concept and in Situ, Part II: Managerial Decrees. *Journal of Documentation*, 68(6), pp.864–881. https://doi.org/10.1108/00220411211277082.

Twitch, 2017. *Twitch*. [online] Available at: https://www.twitch.tv/p/about [Accessed 5 January 2018].

Unseen64, 2017. *Unseen64: Beta, Cancelled & Unseen Videogames*. [online] Available at: https://www.unseen64.net [Accessed 5 January 2018].

UT Videogame Archive, 2017. *The UT Videogame Archive*. [online] Available at: http://www.cah.utexas.edu/projects/videogamearchive/index.php [Accessed 5 January 2018].

Van der Hoeven, J. and van Wijngaarden, H., 2005. Modular Emulation as a Viable Preservation Strategy. In: A. Rauber, S. Christodoulakis, A.M. Tjoa, eds. 2005. *Proceedings from the 9th European Conference on Research and Advanced Technology for Digital Libraries*. Vienna, Austria, 18–23 September 2005. Berlin, Germany: Springer. pp.485–486. https://doi.org/10.1007/11551362_47.

Van Dijck, J., 2012. Facebook as a Tool for Producing Sociality and Connectivity. *Television & New Media*, 13(2), pp.160–176. https://doi.org/10.1177/1527476411415291.

Van Maanen, J., 1995. *Representation in Ethnography*. Thousand Oaks, CA: SAGE.

Vaughan, D., 1996. *The Challenger Launch Decision: Risky Technology, Culture, and Deviance at NASA*. Chicago, IL: University of Chicago Press.

Vesa, M., 2013. *There be Dragons! An Ethnographic Inquiry into the Strategic Practices and Process of World of Warcraft Gaming Groups*. Helsinki, Finland: Hanken School of Economics.

Vom Brocke, J., Simons, A., Niehaves, B., Reimer, K., Plattfaut, R. and Cleven, A., 2009. Reconstructing the Giant: On the Importance of Rigour in Documenting the Literature Search Process. In: *ECIS 2009 Proceedings*. Verona, Italy, 8–10 June 2009. Atlanta, GA: AIS. pp.1-14. [online] Available at: http://aisel.aisnet.org/ecis2009/161 [Accessed 5 January 2018].

Walsh, J.P. and Ungson, G.R., 1991. Organizational Memory. *The Academy of Management Review*, 16(1), pp.57–91. https://doi.org/10.5465/AMR.1991.4278992.

Warde, A., 2005. Consumption and Theories of Practice. *Journal of Consumer Culture*, 5(2), pp.131–153. https://doi.org/10.1177/1469540505053090.

Wardrip-Fruin, N., 2009. *Expressive Processing: Digital Fictions, Computer Games, and Software Studies*. Cambridge, MA: MIT Press.

Warmelink, H., 2014. *Online Gaming and Playful Organization*. New York, NY: Routledge.

Waters, D. and Garret, J., 1996. *Preserving Digital Information: Report of the Task Force on Archiving of Digital Information*. Washington, DC: CLIR. [online] Available at: https://www.clir.org/pubs/reports/pub63 [Accessed 5 January 2018].

Webber, N., 2016. Public History, Game Communities and Historical Knowledge. In: *Proceedings of the 2016 Playing with History Workshop*. Dundee, UK, 1–6 August 2016. Tampere, Finland: DiGRA and FDG. pp.1-7. [online] Available at: http://www.digra.org/digital-library/publications/public-history-game-communities-and-historical-knowledge [Accessed 5 January 2018].

Weber, M., 1968. Bureaucracy. In: S.N. Eisenstadt, ed. 1968. *On Charisma and Institution Building: Selected Papers*. Chicago, IL: University of Chicago Press. pp.66–77.

Webster, J. and Watson, R.T., 2002. Analyzing the Past to Prepare for the Future: Writing a Literature Review. *MIS Quarterly*, 26(2), pp.xiii–xxiii.

Wenger, E., 1998. *Communities of Practice: Learning, Meaning, and Identity*. Cambridge, UK: Cambridge University Press.

Wikia, 2018. *The Fan-Trusted Source in Entertainment*. [online] Available at: http://www.wikia.com/about. [Accessed 5 January 2018].

Wikia, n.d. *Community Creation Policy*. [online] Available at: http://www.wikia.com/Community_Creation_Policy [Accessed 5 January 2018].

Wikipedia, 2017. *Wikipedia: No Original Research*. [online] Available at: https://en.wikipedia.org/wiki/Wikipedia:No_original_research [Accessed 5 January 2018].

Williams, D., Ducheneaut, N., Xiong, L., Zhang, Y., Yee, N. and Nickell, E., 2006. From Tree House to Barracks: The Social Life of Guilds in World of Warcraft. *Games and Culture*, 1(4), pp.338–361. https://doi.org/10.1177/1555412006292616.

Winget, M.A., 2011a. Collecting the Artifacts of Participation: Videogame Players, Fan-Boys, and Individual Models of Collection. In: M.A. Winget and W. Aspray, eds. 2011. *Digital Media: Technological and Social Challenges of the Interactive World*. Lanham, MD: Scarecrow Press. pp.27–72.

Winget, M.A., 2011b. Videogame Preservation and Massively Multiplayer Online Role-Playing Games: A Review of the Literature. *Journal of the American Society for Information Science and Technology*, 62(10), pp.1869–1883. https://doi.org/10.1002/asi.21530.

Winget, M.A. and Murray, C., 2008. Collecting and Preserving Videogames and their Related Materials: A Review of Current Practice, Game-Related Archives and Research Projects. In: *Proceedings of the American Society for Information Science and Technology*, 45(1). Columbus, Ohio, 24–29 October 2008. Silver Spring, MD: ASIS&T. pp.1-9. https://doi.org/10.1002/meet.2008.1450450250.

Winget, M.A. and Sampson, W.W., 2011. Game Development Documentation and Institutional Collection Development Policy. In: *Proceedings of the 11th Annual International ACM/IEEE Joint Conference on Digital Libraries*. Ottawa, Canada, 13–17 June 2011. New York, NY: ACM. pp.29–38. https://doi.org/10.1145/1998076.1998083.

Wirman, H., 2007. "I Am Not a Fan, I Just Play a Lot" If Power Gamers Aren't Fans, Who Are? In: *Proceedings from the 2007 Digital Games Research Conference - Situated Play*. Tokyo, Japan, 24–28 September 2007. Tampere, Finland: DiGRA. pp.377–385 [online] Available at: http://www.digra.org/digital-library/publications/i-am-not-a-fan-i-just-play-a-lot-if-power-gamers-arent-fans-who-are [Accessed 5 January 2018].

Wright, A., 2014. *Cataloging the World: Paul Otlet and the Birth of the Information Age*. Oxford, UK: Oxford University Press.

Yakel, E., 2003. Archival Representation. *Archival Science*, 3(1), pp.1–25. https://doi.org/10.1007/BF02438926.

Yeo, G., 2011. Rising to the Level of a Record? Some Thoughts on Records and Documents. *Records Management Journal*, 21(1), pp.8–27. https://doi.org/10.1108/09565691111125071.

Østerlund, C.S., 2008. Documents in Place: Demarcating Places for Collaboration in Healthcare Settings. *Computer Supported Cooperative Work*, 17(2–3), pp.195–225. https://doi.org/10.1007/s10606-007-9064-1.

Skrifter utgivna av Institutionen för ABM vid Uppsala universitet.

1. Inga-Lill Aronsson & Birgitta Meurling (red.). (2005). *Det bekönade museet. Genusperspektiv i museologi och museiverksamhet.*

2. Ulrika Kjellman (2006). *Från kungaporträtt till läsketikett. En domänanalytisk studie över Kungl. Bibliotekets bildsamling med särskild inriktning mot katalogiserings- och indexeringsfrågor.*

3. Åse Hedemark (2009). *Det föreställda folkbiblioteket. En diskursanalytisk studie av biblioteksdebatter i svenska medier 1970–2006.*

4. Per Nyström (2011). *Att göra historia. En kritisk studie av historieämnet som kunskapsorganiserande system.*

5. Björn Hammarfelt (2012). *Following the Footnotes: A Bibliometric Analysis of Citation Patterns in Literary Studies.*

6. Lisa Börjesson (2017). *Resources for scholarly documentation in professional service organizations. A study of Swedish development-led archaeology report writing.*

7. Olle Sköld (2018). *Documenting Videogame Communities. A Study of Community Production of Information in Social-Media Environments and its Implications for Videogame Preservation.*