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### Tracing traces: a document-centred approach to the preservation of virtual world communities

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#### Abstract

**Introduction.** The aim of this paper is to form a framework capable of theorizing how virtual communities are entangled with their new media environments, thereby contributing to the understanding of present-day virtual communities and how to preserve them.

**Method.** An extensive bibliography on virtual worlds, virtual world preservation, document- and practice theory, and virtual communities forms the conceptual basis of the paper.

**Analysis.** The proposed framework was formed by the way of qualitative and synthetic conceptual analysis of the collected literature. Results. Virtual world communities can be fruitfully conceptualized as distinct domains with specialized documentary practices. In each domain of practice, the virtual world's related new media ecology functions as a central hub where the configuration of shared routinized sayings, doings, and knowings specific to that virtual world are negotiated.

**Conclusion.** By theorizing the activities of virtual communities in new media environments as documentary practices, and blog posts, comments, and tweets as

documents, the framework accentuates new media as infrastructures that do not solely carry informative traces of the activities of virtual communities, but in effect are an active and formative part of them. As such, they merit high preservational priority.

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## Introduction

The question of digital preservation is currently on centre stage for archives, libraries, and other memory institutions. 'The digital' is, however, not to be construed as merely a new field of operations for the memory sector. Rather, the continuous emergence of new types of accessible high value digital cultural heritage objects pose juridical, technical, and ethical difficulties for the memory institutions and their established modus operandi (e.g., [Galloway 2005](#); [Snickars 2010](#); [Brügger 2013](#); [Finnemann 2012](#)). This paper takes as its starting point that new types of valuable digital cultural heritage objects also bring about significant conceptual challenges. Digital preservation is seen as an activity intimately connected to the way the object of interest is conceptualized and how preservational goals and strategies are developed on the basis of this conceptualization ([Cook 2001](#); [Schwartz and Cook 2002](#); [Kirschenbaum 2008: 20](#)). Hence, new types of cultural heritage objects necessitate conceptual work in order to be preserved successfully. In the present paper, this viewpoint is operationalized in a theoretical discussion of virtual worlds from the perspective of preservation.

Virtual worlds are a new type of digital object that frequently has been described as valuable digital cultural heritage, albeit complex and problematic to capture due to its distributed and hard-to-pin-down nature ([Uricchio 2007](#); [McDonough et al. 2010](#); [McDonough 2011](#)). Virtual worlds are dependent on hardware, software, and often network connections. They consist of graphics and sounds, but are also constituted by communities with specific cultures, social structures, and sets of activities ([Lowood 2011a, 2011b](#); [Winget 2011](#)).<sup>[1]</sup> The currently predominant archival conceptualization of virtual worlds argues that graphics, sounds, and the data files needed to run the virtual world is its 'significant properties', i.e., the aspect of the object that holds preservational priority (e.g., [McDonough et al. 2010](#); [McDonough 2011](#); [McDonough and Olendorf 2011](#)). Yet, it has been suggested that it is crucial to develop complimentary approaches to preserve the more ephemeral, but equally valuable, communities of virtual worlds ([Lowood 2011a](#); [Newman 2011](#); [Winget, 2011](#)).

The aim of this paper is to theorize how the activities of virtual communities simultaneously shape and are shaped by their new media environments, thereby contributing to the understanding of present-day virtual communities and how to preserve them. This will be done by bringing together the perspectives of practice theory (e.g., [Schatzki 1996](#); [Reckwitz 2002](#)) and document theory (e.g., [Buckland 1997](#); [Frohmann 2009](#); [Lund 2010](#)) to form a framework capable of showing how the communities of virtual worlds are entangled with the virtual worlds' associated new media ecologies. On the basis of the proposed framework, blogs, discussion forums, and other types of new media are explored as potential sources of documentation of virtual world communities. Furthermore, virtual world communities are analyzed as domains of documentary practice comprised of new media-related practices (posting, sharing, tagging) that are seen to simultaneously record and constitute the sociocultural dynamics of the community. On a more general level, this paper also discusses the preservational capacity of online social networks (a topic touched upon by [Rehn 2001](#); [Kirschenbaum 2008](#); [Hine 2009](#)) and suggests how the insights provided by the proposed framework can benefit the preservation of varieties of online digital cultural heritage objects and online social networks other than virtual worlds.

## Virtual worlds and their preservation

Virtual worlds, herein defined as interactable computer-facilitated representations of space, are a conceptually multifaceted notion with a varied nomenclature (see [Rheingold 1992](#); [Manovich 2001](#); [Castronova 2005](#); [Kaplan and Haenlein 2009](#)).<sup>[2]</sup> Equally diverse is the present day use of virtual worlds. Since their inception in the late 1970s and early 1980s ([Bartle 2010](#)), virtual worlds have become a significant phenomenon. At the time of writing, the Massively Multiplayer Online Role-Playing Game (MMORPG) World of Warcraft has approximately over ten million subscribers ([Blizzard Entertainment 2012](#)), and League of Legends, currently held to be the most played virtual world, has hundreds of thousands of concurrent players daily, even by low estimates ([Meer 2013](#)). Additionally, virtual worlds and 'gaming culture' have begun to impact on other forms of media like TV-series and movies. Virtual worlds are also being employed and studied in areas such as education ([Holmberg and Huvila 2008](#); [Salmon 2009](#); [Warburton 2009](#); [Sköld 2012](#)), cultural heritage curation ([Koller et al. 2009](#); [Kari and Huvila 2011](#)), and research in areas such as computer science and software engineering, social sciences, and the humanities. To conclude, virtual worlds are arguably an important part in current culture and society. As such, they are considered valuable from a cultural heritage viewpoint.

Preservation of virtual worlds for cultural heritage purposes has been researched and attempted using a number of approaches. Archiving Virtual Worlds (AVW) and Preserving Virtual Worlds (PVW) are examples of projects aimed at preserving virtual worlds. AVW is a video archive connected to the Internet Archive. It contains gameplay footage from both single-player and multi-player virtual worlds. The research conducted under the umbrella of the PVW project principally sought to investigate how the methods of emulation and migration can be used to maintain the functionality of virtual worlds in changing hardware and software environments, and how to archive virtual worlds in long-term digital repositories ([McDonough et al. 2010](#); [McDonough 2011](#)). Scholars from the PVW project have also touched upon how intellectual property jurisdiction and virtual world-specific contractual circumstances can make preservational efforts difficult ([McDonough et al. 2010](#); [McDonough and Olendorf 2011](#)). In addition to preserving the data files and audio-graphical components of virtual worlds, calls have been made to collect and capture material that can serve to preserve virtual world communities. McDonough and Olendorf (2011: 97) stress the importance of preserving "context information" that details the use and history of virtual worlds. Such information includes screenshots, pivotal associated websites and new media sites, and text descriptions of important events in and properties of the virtual world that are otherwise difficult to document. Lowood (2011a) views the need to capture traces of the virtual world's community as central to the enterprise of virtual world preservation. Played-created material, like blogs and other types of new media, screenshots, or videos of gameplay, are from this standpoint considered to be essential information sources of primary importance, even in comparison with the data files of the virtual world itself ([Lowood 2011a](#), [2011b](#)).

## New media and virtual world communities

Literature seems to suggest that opportunities to advance the conceptual tools and practice of virtual world community preservation exist where the sociocultural life of a virtual world intersect with its associated new media ecology. In his net-based ethnography of a warez community, Rehn (2001) comments on how well the notion of homo garrulus — 'the talkative man', introduced and discussed by Gustafsson (1994: 243) in his exegesis of reason and rationality in the social sciences — describes one of the most prevalent and habitual activities of the community in question: to perpetually write, post, and comment on a wide and seemingly disparate range of topics, in essence to self-document its activities. Similarly, Hine (2009) observes that the circulation of texts and comments via various new media ecologies simultaneously is an essential mode of communication in online communities, and an auto-documentary function generating a plethora of traces of online social interaction. Thus, in the mundane

dealings of a virtual world, people put lots of time and effort into its associated new media ecology, detailing gameplay strategies, sharing thoughts about things small and big, and answering questions of fellow players; all for no other distinguishable purpose but to add one's voice to the cacophony of opinion, advice, minutiae, mockery, and trolling that constitute the everyday activities of a virtual world-related new media site. The basic mechanic of this fervent activity is the incessant posting and commenting of texts, text snippets, and images, and the linking, tagging, liking, and disliking of content. An inquiry into these everyday self-documenting practices could yield important insights into the sociocultural workings of the virtual world community. Furthermore, by shedding light on how new media functions in the sociocultural life of virtual world communities, it would also be possible to explore the modes of production and context of creation of virtual world-related new media, described by Lowood (2011a) as an essential information source in virtual world preservation. Both these interrelated venues of study would further preservational work and research focused on virtual world communities. In the following sections, a framework is presented that can be used to conceptualize and analyze the entanglement of virtual world communities with their associated new media ecologies.

## Sociocultural practices and domains

Previous studies of the communal dimension of virtual worlds have employed a variety of approaches. To name a few, virtual world communities have been studied as aggregations of personal relationships (Rheingold 1992); from the viewpoint of identity and identity play (Turkle 1995); gender, race, and class (Kendall 2002); “cultural logic” (Boellstorff 2008: 64), and the interaction between virtual world design and the behaviour of a virtual communities (Pearce 2009). The present paper argues that the study of virtual world communities can be structured along the lines of, not social relationships, identity, culture, or interaction, but of people's shared doings, sayings, and understandings; in other words, by the sociocultural practices of the people engaging with a virtual world. The fundamental ontological and epistemological position of practice theory is that the contents of the world, and what is knowable about it (and in which way), are embedded in dynamic and contextually dependent, socially shared activity systems. Practice theory is a highly diverse theoretical perspective constituted by multiple currents of thought; scholars as diverse as Foucault, Vygotsky, Latour, Bourdieu, Wenger, and Schatzki have made contributions to the field (for a more detailed genealogy, see Schatzki 1996: 1-18; Reckwitz 2002; Postill 2010). The applications of practice theory in LIS, often in the reconceptualized form of 'information practice' (e.g., Talja and McKenzie 2007; Savolainen 2008), are diverse. The objects of study in LIS research informed by practice theory range from the information-related activities of various professional groups (Lloyd 2005; Sundin and Johannisson 2005; McKenzie 2006) to information-seeking in everyday life (McKenzie 2003), and knowledge construction in Wikipedia (Sundin 2011).

## General outline of practice theory

The strand of practice theory drawn upon by the present paper posits practices as the basis of sociality and therefore theoretical attention. The smallest building block in the practice theoretical analysis is the everyday activities of people (Reckwitz 2002; Talja 2010). These routine activities can be of both bodily and mental character and consist of, for example, cooking, reading, or posting things on a website. In the practice theoretical view, each such activity does not solely consist of the physical act itself—e.g., to stir the pot with a ladle or to press the keyboard and move the mouse—but also of “forms of mental activities, ‘things’ and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge” (Reckwitz 2002: 249). Along these lines, the activity of cooking consists of the use of cooking utensils, and a certain perception and discourse, besides the physical act of preparing a meal. This pattern of bodily and mental activity, use of objects, knowledge, and emotional response is what constitutes the fundamentals of the concept of practice (Reckwitz 2002). A practice can thus be described as a “nexus of doings and sayings” (Schatzki 1996: 89): a practice is the specific,

everyday way in which things are talked about, topics are understood, tasks and their ends are perceived, emotionally connoted, and carried out (cf. “teleoaffective structures”, [Schatzki 2002: 80](#)). As follows, the notion of practice holds the theoretical resolution needed to study language and language use (discourse), knowledge, culture (understood in its most fundamental way, as people doing things communally), and materiality by viewing them as interconnected by, and analyzable in, the everyday dealings—the practices—of people ([Reckwitz 2002](#); [Warde 2005](#)).

## Domains, individuals, and the flux of practices

Practice theory spans both the collective and the individual levels of analysis ([Bentley 1987](#); [Schatzki 1996](#); [Warde 2005](#)). At the collective level, practices are viewed as unevenly distributed in social space. Schatzki differentiates between practices of general use and applicability (explaining, describing, questioning) that are dispersed throughout sociocultural life, and those that belong to a certain “domain” ([Schatzki 1996: 91, 98](#)). Examples of domains are farming, research in a specific field, or a virtual world community. Domains are networks of different scale that structure the ways of saying, knowing, and doing in accordance with its current configuration of practices ([Postill 2010](#); see also [Hjørland and Albrechtsen 1995](#); [Hjørland 2002, 2009](#)). The notion of domain can be used to express and analyze the local character of sociocultural life in virtual world communities by postulating that virtual world communities are separate domains with varying sets of practices.[\[3\]](#)

Besides being distributed across the spectrum of sociality, several scholars have described spatio-temporal specificity and dynamics as a defining characteristic of practices and domains of practices. Talja ([2010](#)) foregrounds the inseparability between practices and the specific context in which they are carried out. Warde ([2005](#)) claim that any analysis of practices must take into account their historical and the institutional situatedness. Postill ([2010](#)) and Warde ([2005](#)) comment on the flux of practices: the dominant practices of a domain are constantly being contested (e.g., due to generational differences between practitioners), practices are reconfigured because of changes in their setting (e.g., the implementation of a new printing system in an office), and although being differentiated, practices exert influence on each other in various other ways (see [Schatzki 1996: 12](#)).

Another important element of practice theory is how individuals enter into practices. Not anyone who performs an activity associated with a practice is to be viewed as a practitioner. To adopt a practice the individual must appropriate the routinized bodily, mental, and emotional patterns by the way of training and familiarization. Nevertheless, this does not shift the analytical focus of practice theory to the individual per se. The conventions of doing, saying, and knowing in a particular context are understood as connected to the practice, not the dispositions of the individual ([Reckwitz 2002](#)).

## Virtual world communities from the perspective of practice theory

Practice theory, when applied in the analysis of virtual world communities and their entanglement with new media, puts the shared everyday activities taking place on virtual world-related discussion forums, blogs, or subreddits[\[4\]](#), into focus. From the viewpoint of practice theory, communal activities in virtual world-related new media ecologies are not explained with reference to norms or other collective rules of behaviour, individual motivations, or discourses. Practice theory instead serves to sensitize the analysis to how posting, linking, commenting, sharing, down-voting, up-voting, liking, disliking, and other mundane dealings of virtual world communities in new media ecologies connect to patterns of bodily and mental activity, epistemology, and the material conditions offered by various settings. In this vein of thought, communities of virtual worlds emerge as domains of practice. A domain of practice here is an interconnected and demarcated, yet dynamic, set of practices in part determined by the varying material conditions of the new media ecology employed by the community. To be able to properly study these

particular domains of practice from the viewpoint of recorded information and preservational strategy, perspectives provided by document theory will supplement the practice theoretical analysis.

## Documents and documentation

Practice theory provides the resources needed to analyze the everyday engagement of virtual world communities with new media. Virtual world communities differ from some domains of practice in the way that they are characterized by the prevalence of 'mediated' practices connected to reading, writing, posting, and commenting via various new media sites.<sup>[5]</sup> In order to tie the proposed conceptualization of virtual worlds and new media closer to the archival/preservational sphere, and to make it better suited to elucidate the mediated nature of virtual world new media practices, additional conceptual tools will be sought for in the interdisciplinary body of research focusing on documents and documentation. As with the practice theoretical current of thought introduced above, document theory is a highly heterogeneous theoretical perspective. Documents and documentation have been studied in many disciplines besides LIS (sociology, organization studies, science and technology studies, ethnography/anthropology, et cetera) using diverse methods and theoretical resources (e.g., Garfinkel, Foucault, and Latour; for an overview, see [Lund 2009](#); [Hartel 2010](#); [Trace 2011](#)). In LIS, document theory advocates a shift in the focal point of research from the study of an abstract notion of information to the study of the material manifestations of information, i.e., documents ([Buckland 1991, 1997](#); [Hansson et al. 2003](#); [Frohmann 2004a, 2004b](#); [Lund 2009, 2010](#)).<sup>[6]</sup> The principal advantage of putting the informative objects themselves at the centre of analytical attention instead of, to paraphrase Bates ([1999](#)), their invisible substrate of 'informativeness', is that the important role of materially manifested information—documents—in sociocultural life comes into focus. Most of document theory's constituent inquiries in LIS as well as other disciplines analyze documents primarily in terms of their constitutive capacity, as agents of social and epistemic continuity and change; the study of documents as communicative devices is generally given less attention, as is the case here.

### Definition of documents

The definition of the concept of document is a topic that has been discussed extensively by scholars associated with document theory (e.g., [Buckland 1997, 1998](#); [Frohmann 2004a, 2009](#); [Lund 2009, 2010](#)). Strong arguments as to why the concept should be defined using a heuristic approach, adapting it to the specifics of the studied context, has nevertheless been put forward by Francke ([2005](#)) and Frohmann ([2009](#)). For the purposes of this paper, Levy's ([2001, 2003](#)) definition provides a good point of departure for discussing how the concept of document is understood in the proposed framework. Levy ([2001: 23](#)) defines documents as "talking things [...] bits of the material world [...] that we've imbued with the ability to speak". Hence, a document can be understood as a material object connected to an activity aimed at making it talk in some ways, to someone. Levy ([2001](#)) narrows the definition further by pointing out that documents are primarily about speaking. In this view, blog posts, tweets, meme pictures, and videos are documents, while leeks and clouds are not. In addition to providing a way of conceptualizing the material dimension of new media, document theory also carries the theoretical tools needed to open up the study of the role of new media-documents in sociocultural life. In document theory, documents are viewed as products of its context of creation and, furthermore, as active agents in this context ([Hansson et al. 2003](#); [Francke 2008](#); [Lund 2009, 2010](#)). Earlier empirical studies employing a document-perspective show that documents can be viewed as reciprocally connected to the shared doings of people on multiple levels, such as the level of experience of individuals and communal configurations of activities ([Brown and Duguid 1996](#); [Heartfield 1996](#); [Hartel 2010](#); [McKenzie and Davies 2010](#); [Huвила 2011](#)). The sociocultural nature of documents can be explored further by bringing document theory into dialogue with practice theory to create a situated account of documentary practices.

## Documentary practices and genres

When people engaged in a virtual world tweet about their in-world endeavours or up-vote a post on Reddit detailing the contents of an upcoming patch, it is a documentary practice. Documentary practices are, in other words, mediated and routinized ways to do or say things in new media environments shared by the virtual world community. This means that tweets and Reddit comments (with their vote counts), blog- and forum posts, emerge as documents that should be understood in two ways. First, as mentioned, such new-media documents constitute mediated practices in the domain of the virtual world community. It should here be noted that documents are not mere carriers of practices, nor unsocialized materialisations of inscriptions and actions. Following Berg (1996: 501), citing Latour (1994), documents are viewed as “a force in itself, mediating the relations that act and work through it”. Documentary practices are at the core of the document’s sociocultural life; they are what connect documents to the sayings and doings of the virtual world community and what grant documents influence in this context (Berg 1996; Frohmann 2004b). Second, documents are objects of recorded information, traces of the shared everyday activities of the virtual world community. It is the inherently mediated nature of virtual world practices in combination with the simultaneously mediating and recording function of the new media-documents that qualify them as ‘documentary’ and ‘documents’ respectively.

As previously mentioned, the study of practices must include their material settings, the objects involved in the studied doings and sayings. It is therefore important that the analysis of documents and documentary practices in virtual world-related new media properly recognize the differing material conditions of blogs, forums, wikis, Twitter, Reddit, and other new media sites. The notion of document genre provides the present framework with the ability to account for such difference. Levy (2001: 27f) describes a document genre as a group of documents disposed towards a certain kind of expression. The documents in a genre are furthermore characterized by a specific way of functioning in sociocultural life. If it is assumed that each new media site has a set of affordances (Gibson 1979) that allow, encourage and discourage certain practices, then a new media site can plausibly be said to correspond to a specific document genre. The notion of document genre has two analytic advantages. It enables the detailed description of documents and documentary practices to include documents from multiple types of new media. Also, it can account for the specificity afforded by new medias’ varying material conditions.

## Document theory and virtual world communities

Previous inquires of practices and documents—drawing on varied definitions of these concepts—have yielded insights into organizational life (Heath and Luff 1996; Harper 1998; Marlow and Nyce 2005) and knowledge construction in social- (Riles 2006) and natural science (Latour and Woolgar 1979; Woolgar 1990; Frohmann 2004b), to name a few areas. When looking at virtual worlds and new media from the viewpoint of the proposed framework, it appears as though, for instance blog and forum posts and their related comments are documents which materially carry a wealth of information on the sociocultural activities of the virtual world community they are related to. Documents produced by a virtual world community mediate the multitude of everyday practices, and structure sociocultural life, in the domain of practice specific to that community. In this way, documents are nodes where the perceptions, opinions, viewpoints, knowledge, et cetera, of the community are asserted and subverted, stabilized and destabilized on a routinized basis. What is seen to be the ‘correct’ and ‘incorrect’ way of performing certain tasks in the virtual world, and how interaction between virtual world users takes place, are examples of activities shaped by practices, mediated by and documented in the new media ecology. By employing the proposed framework in the study of virtual worlds, analytical attention is turned towards the active and constitutive role of new media-documents in virtual world communities, and the richness of sociocultural information contained in these documents.

# Virtual worlds as domains of documentary practice

World of Warcraft, Second Life, and Starcraft are examples of pivotal virtual worlds. As important drivers of the development of the medium and its consequent establishment as a significant phenomenon in contemporary society and culture, they are digital cultural heritage objects that hold great preservational value. Earlier studies and projects in the area of virtual world preservation indicate that further research is needed on how to conceptualize virtual worlds from an archival standpoint, and how to carry out their preservation ([Winget 2011](#)). It is observed that additional inquiry is especially warranted concerning the method and underlying thought of how to preserve the communities of virtual worlds, arguably one of their most defining and important properties ([Lowood 2011a, 2011b](#); [McDonough and Olendorf 2011](#)). The present paper aimed to address this gap by exploring how practice theory and document theory can inform a framework providing a complementary way of understanding how to preserve virtual world communities and other online social networks. The proposed framework conceptualizes virtual worlds as distinct domains with specialized practices. In each domain of practice, the virtual world's related new media ecology functions as a central hub where the configuration of shared routinized sayings, doings, and knowings specific to that virtual world are negotiated. Furthermore, new media-texts such as blog posts and tweets are analyzed as documents in two interconnected ways. They are seen as mediators of everyday practices in the virtual world domain and active constituents of the mundane sociocultural life of the virtual world community. New media-documents are also conceptualized as traces of sociocultural activity and, hence, carriers of recorded information about the everyday practices of the virtual world. The practices of a virtual world community are termed 'documentary practices' because they are inherently mediated by new media and thus have an auto-documentary function. In summation, the following seven facets characterize virtual world community documentary practices (cf. the description of the properties of documentary practices made by [Frohmann 2004b](#)):

- i. **Routine**—documentary practices are shared everyday dealings of virtual world communities in related new media ecologies
- ii. **Situatedness**—documentary practices are indissolubly bound to the place and time in which they are carried out (historical and institutional context)
- iii. **Domain**—the documentary practices of a virtual world community is part of a demarcated conglomeration of practices specific to that virtual world
- iv. **Continuity and change**—documentary practices are submitted to concurrent forces of reproduction and subversion; the currently dominant practices in a domain are always potentially in flux
- v. **Materiality and mediation**—documentary practices are mediated by and materialized in new media-documents such as blog posts, forum posts, and tweets
- vi. **Genre**—the specific material setting of each new media site affords different practices and therefore give rise to a specific document genre, i.e., a group of documents disposed towards a certain kind of expression
- vii. **Habitualization**—to be able to adopt a practice, potential practitioners need to familiarize themselves with it

## Conceptual contributions: the preservational capacity of online social networks and the notion of record

The present paper contributes to the conceptual repertoire of archives and other memory institutions by continuing work into the notion that online social networks, like virtual world communities, have a preservational capacity in the sense that they document human activity ([Rehn 2001](#); [Kirschenbaum 2008](#); [Hine 2009](#)). Online social networks can be understood as domains of documentary practice, where the practices of reading, writing, linking, sharing, tagging, posting, up-voting, down-voting, commenting, and



so on, in new media environments are seen as indicative and constitutive of sociocultural life in the domain in question. The auto-documenting function of online social networks in new media ecologies—that is, the asynchronous practices of document production, interaction, and consumption—can be tentatively postulated as a property of contemporary Internet use and culture. In a paper on the relationship between the memory institutions and the Web, Snickars (2010) identify three archival modes of online media. The three modes are P2P networks (e.g., Piratebay), online archives that have eschewed the traditional archival separation between metadata and material (e.g., The Internet Archive), and “digitally upgraded media” like Internet-mediated television, radio, and music archives (e.g., Spotify) (Snickars 2010: 310). The analysis of the present paper suggests that Snickar’s (2010) three archival modes of online media can be complemented by adding a fourth: the archival properties of new media and the documentary practices of online social networks.

The preservational capacity of online social networks, as it emerges in this paper, furthermore reframes the archivist and the archive. By putting the habitual practices of people and the view of everyday new media-texts as documents at the centre of archival thinking, a perspective emerges in which the preservational capacity of online networks and communities become the principal generative force of the archive, partly performing the documentary duties of the memory institutions, although in a less structured manner. This line of thought resonates with recent archival literature on participatory archiving and distributed custody, where the agency of communities and individuals are viewed as a potential resource in the formation and curation of archives (Huvila 2008; Cunningham 2011; Cook 2012). Cook claims that, with the Internet, persons, communities, governmental organizations, lobbying groups, and so on, are “building [...] online archive[s]”. This, in turn, means that “[a]rchivists [...] have the exciting prospect of being able to document human and societal experience with a richness and relevance never before attainable” (Cook 2012: 19). In such examples of community and participatory archiving, the archivists still need to take part in the selection/appraisal of the archive and other curatorial duties. However, in this view—and in the view of the present paper—, the authoritative function of the archivist, and the archive as a site where traditional power relations in society are enacted and reinforced (Cook 2001; Schwartz and Cook 2002), are slightly de-centred without being de-emphasized or undervalued.

Additionally, the proposed framework expands the archival conceptual sphere by accentuating an affinity between the concepts of document, as defined in this paper, and record. As shown above, new media-texts can be thought of as documents. By calling a blog post a document, an evidential value is ascribed to it (Buckland 1997; Briet 2006; Day 2006). In other words, it is assumed that the blog post-as-document can be informative of something, whatever it is, whether it is true or false, relevant or irrelevant. This view resonates with the idea that the archival collection can provide evidence—that archival material, records, are “things that stand for something else” (Yeo 2007: 334), that is, representations of past events, processes, or contexts—, the perhaps most important *raison d’être* of the archive and an important tenet of archival thought (Thomassen 2001; Yeo 2007, 2011). It seems plausible to argue that archives and archival thought has much to gain if the traditional, juridical and administrative, conception what a record is, how it is used, why it is important, and so on, is discarded in favor of a broader view that also encompasses online texts such as those of interest in this paper. These texts are perhaps less formal in appearance and function compared to the common record, but equally rich informationally and moreover of value from a cultural heritage perspective.

## Implications for research and practice in digital preservation

The framework put forward in this paper also presents conceptual tools and modes of analysis that benefit research and practice in the area of virtual world preservation. If new media platforms are understood as document nexi with a central role in community sociocultural life rather than solely passive repositories of information, it seems reasonable to argue that virtual world-related new media merit high

preservational priority. Efforts aiming to preserve virtual worlds should, along with the audio-graphical components and data files needed to run the virtual world, archive pivotal parts of the virtual world communities' new media environments. Informed by the views proposed by the present paper, studies of such new media-documents can show how the documents reciprocally shaped and were shaped by the sociocultural dynamics of the virtual worlds in question and the affordances of the documents' new media platforms, thus opening a proverbial window into the workings of the virtual world communities.

On a practical level, the discussion of this paper suggests that there is a link between web archiving and virtual world preservation in the sense that traces of the sociocultural activities of the latter is accessible via new media sites. Notwithstanding that web archiving is a complex task in itself, requiring curatorial expertise as well as the ability to make informed technical decisions (Finnemann 2012), empirical studies aiming to complement the conceptual footwork made by the present paper are needed before any specific methodological suggestions can be made for the preservation of the sociocultural activities of virtual world communities. These studies would have to focus on providing robust qualitative insights in two interconnected lines of study. First, inquiries would have to be made aiming to provide empirically-based insights into what is documented by a virtual world community in its related new media ecology. In the vernacular of the framework presented in this paper, the focus of analysis in these studies would be how the content of the new media-documents relates to the situatedness (e.g., the time, place, and institutional context) of the studied community's documentary practices (cf. Berg 1996; see Sköld 2011 and Harviainen et al. 2012 for initial attempts in this direction). The second type of empirical study suggested here would shift the focal point of analysis from the new media documents themselves to their sociocultural context of creation, the domain of practice. Such studies could advantageously be formulated as ethnographic investigations of the documentary practices of posting, replying, linking, down- and up-voting, et cetera, mediated by blog- and forum posts, tweets, and other platforms in a virtual world new media ecology. This kind of study could yield important insights into many aspects of documentary domains, for example how different document genres affect the range of practices they mediate, the practices' patterns of stabilization and subversion, the way in which practitioners become familiarized and adopt the documentary practices, and what separates domains of documentary practice pertaining to different virtual worlds.

The document-practice framework presented in this paper holds the theoretical resources needed to frame new media ecologies as a pivotal points of reference not only in the context of virtual world preservation, but also in digital cultural heritage management and curation relating to other spheres of society. Examples abound, including the structure of online communication between medical professionals and care seekers, and librarians and library users. Besides online social networks of different kinds, the proposed framework could also be used to inform the preservation of digital cultural heritage objects that share the distributed features of virtual worlds, for instance machinima and cultural heritage objects on sites such as Youtube. Outside the area of digital cultural heritage curation, the proposed framework can be employed as a qualitative tool to analyze and map the sociocultural practices of online social networks for the purposes of marketing, community management, or web service design.

## Conclusions

The principal argument put forward in this paper is that document theory and practice theory can inform a framework that contributes to the understanding of how virtual communities are entangled with new media. By theorizing the activities of virtual communities in new media environments as documentary practices, and blog posts, comments, and tweets—i.e., the artifacts of recorded information that are the object and result of these practices—as documents, the framework accentuates new media as infrastructures that do not solely carry informative traces of the activities of virtual communities, but in effect are an active and formative part of them. This paper hence represents a step in the direction of

deepening the understanding of how virtual communities, specifically those related to virtual worlds, shape and are shaped by their (documentary) practices relating to new media use.

[1] A virtual world community is defined as the dynamic set of people currently engaged with the virtual world on different levels of commitment and activity.

[2] Even though convincing arguments for the conceptual differentiation between virtual space and game space have been presented ([Spence 2008](#); [Carr et al. 2010](#)), the present study employs a definition of virtual worlds that includes single-player, offline video-games and Massively Multiplayer Online Role-Playing Games as well as non-game virtual spaces.

[3] There are many concepts that are slightly different, but fundamentally similar, to the notion of domain employed here. Budd and Raber talk about 'speech communities', which is defined as "a socially-defined population that, collectively, employs a set of codes and structures (social and linguistic)" ([1996: 220](#)). Other examples are 'epistemic cultures' ([Knorr-Cetina 1999](#)) and 'networks of practice' ([Brown and Duguid 2000](#)).

[4] Reddit ([www.reddit.com](http://www.reddit.com)) is a social news website centred on user-submitted content and commentary. The website employs a voting system that allows users to affect the visibility of content and comments by either up-voting or down-voting them. Reddit is topically structured into 'subreddits', places of discussion pertaining to a certain area of interest.

[5] The spectrum of practices relating to a virtual world is broader in effect, and includes, among others, practices mediated via the virtual world itself and practices of voice chat (e.g., Skype). These practices are, however, not the point of interest here.

[6] The intellectual lineage of the present-day document theory is often traced back to the European documentalist movement of the early-mid 20th century, most notably the writings of Paul Otlet and Suzanne Briet ([Buckland 1997](#); [Tourney 2005](#); [Lund 2009](#)).

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