Archive and Market Dynamics: (History of) Library, (Digital) Humanities, and "Cultural Memory Institutions"

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Abstract. This work introduces the idea of *memory practices* in consumption processes and in market system dynamics through the role of archives and *digital practice of archiving.* From a *historical institutionalism* perspective, listed in *digital humanities* in terms of *media archaeology*, the historical evolution of the library allows to introduce the notion of archive as: (i) category of objects, standards, classification systems and cataloguing mechanisms (from *Science and Technology Studies*); (ii) and cultural artefact (*à la* Foucault). From *mnemonic devices* (digital archive) *mnemonic practices* emerge (digital archiving practices) whose collective memories help "to generate" and "take shape from" markets as *mnemonic communities (cultural memory institutions)*. The work suggests a research agenda on *market system dynamics* based on different ways of conceiving the mnemonic dimension of social phenomena.

keywords: memory practices, digital archive, digital practices of archiving, digital humanities, market dynamics

Introduction and Conceptual Background

> «Because their memory is short-lived, humans accumulate an infinity of memory aids. Confronted with the teeming depositories that result, panic sets in. They fear being trampled by information, submerged beneath heaps of words and data. So, to ensure their freedom, they erect formidable fortresses faraway stock houses, libraries that can't be read except by machine minds» ("Cold Storage", *metaLab(at)Harvard* project)

The excerpt introduces the documentary "Cold Storage" (2015), recalling Alain Resnais' film on the Biliothèque Nationale de France, "Toute la mémoire du monde" (1956): the investigation into the Harvard library system reflects on how «our collective ark filled with petabyte upon petabyte of memories sets navigate the sea of history: humankind's noblest endeavor (oblivion is the destination)» (*LbB*: p. 141). The hypothesis on which this research is based is that the understanding of the functioning of *memory practices* passes through the analysis of the production processes and use of archives and of the *digital practices of archiving*: an integral part of the most common consumption processes, digital archives are a cultural artefact that feeds the institutional dynamics of markets whose processes of change revolve around the phenomenon of memory.

Between temporality and historical dimension of organisational and management processes (Bucheli, Wadhwani 2014; Langley, Tsoukas 2016; Suddaby, Foster 2017; Reinecke *et al*. 2020), the theoretical background of the work emerges (Appendix A): (i) introducing the concept of *memory practices* from

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Science and Technology Studies-STS (Bowker 2005; Bowker 1998; Bowker, Star 1999); (ii) and comparing the concepts of *materiality and memory* with that of *institutions* (Greenwood *et al*. 2018) and with the *practice-based* approaches in social sciences (Schatzki 1996, 2019; Nicolini 2013). Lawrence (in de Vaujany *et al*. 2019) stresses that «integrating materiality into institutional research opens up a wide array of new questions and issues: understanding the role of materiality in the establishment and maintenance of institutions; how institutions are constituted materially and how materials are constituted in and through institutions; how and why actors work with specific materials in the course of institutional work; the material bases of institutional logics» (p. ix). Memory and materiality have the following in common: (i) «the idea that memories allow people to remember the past socially, as a collective rather than individual experience, as they form *mnemonic communities* [*à la* Halbwachs; Zerubavel 2003]»; (ii) «and the notion that collective memories are anchored to *mnemonic devices* – discrete material artifacts that convey meanings and trigger sensory and embodied responses that frame what is remembered and that is forgotten individually and collectively [Connerton 1989]» (Eisenman, Frenkel 2021).

Developed within the literature on *Market System Dynamics* (MSD) and *Constructivist Market Studies* (CMS) (Nøigaard, Bajde 2021; Giesler, Fischer 2017; Harrison, Kjellberg 2016; Humphreys 2010), the proposed topic: (i) develops the market analysis as «an organizational field encompassing a set of institutions and actors, governed by institutional logics, supported by institutional work, and characterized by institutional boundaries» (Dolbec, Fischer 2015: p. 1449), (ii) connoting markets as complex social systems, co-created, and focused on changing (Giesler, Fisher 2017); (iii) and considering how materiality plays a decisive role in the institutional dynamics of market creation/change processes (Araujo *et al*. 2010; Kravets *et al*. 2018).

The following sections reconstruct the connection between digital objects, *software culture* and archiving practices: (i) the evidence on the history of library, between materiality and institutional structures, (ii) return the research method choices, in a perspective of *historical institutionalism* , (iii) introducing the role of digital archives in *memory practices* and in terms of *digital practice of archiving*, (iv) outlining a research program around the role of memory in markets institutional dynamics.

Evidence from (History of) Library and (New) Librarianship

What is a library? Lankes suggests that «a library is a mandated and facilitated space supported by the community, stewarded by librarians, and dedicated to knowledge creation» (2016: p. 95). Libraries, books and digital artefacts have a common basis in “humanities knowledge”. Kiettler (2009) suggests an interesting synthesis to attempt a link between the ontology of the digital world, memory and the history of “technical media”: «libraries are storage media for storage media called books» (p. 30).

The material dimension of the library revolves around some common elements in its history (figure 1, appendix A): book; bookshelf; card catalog; carrel; copy station; librarian; library card; reference desk. Although the book has been an established storage technology for five centuries, today it looks like "a networked creature, its content contained in bytes and rendered in pixels, its wonted materiality seems to fade into abstraction" (*LbB*: p. 38): from one hand, "the book may be shared line by line, its readers' progress through the text tracked and analysed, its contents scraped and remixed, its finitude and finality pried open"; from the other "books have tried out a series of evolutionary adaptations for beckoning, holding, and controlling their readers, from critical apparati that script their use to spine labels and title pages to clasps and chains to checkout cards and bibliographic database records" (p. 39). The shelves of a library are "plausible organizational schemes and […] becomes a master metaphor for the library itself: for the library as a (fragile) place of cohesion; for the publication series that, for all its diversity, enacts a plan; for an infrastructure that supports even the most fluid readerly desires" (p. 41). The catalogues of a library "have migrated into digital records bearing a train of increasingly complex metadata; and these, in turn, are being multiplied by crowdsourced and user-generated tagging. Catalogs interconnect. The card game is played on a multidimensional table" (p. 43). From one hand "the carrel's role as a microcosm of retreat and enclosure within the macrocosm of library is evolving toward interactive redesigns […]: the carrel as curation station whose marching digital and physical constellations are broadcast to library patrons; the modular carrel that can be isolated or assembled as classroom; the carrel as multimedia production studio" (p. 45). From the other, "the copy room has become a relic. Scanners, copiers, and recorders are in the pockets of every reader" (p. 47). In the proposal by Lankes: if a library constitutes "a participatory platform that allows a community to share passions, expertise, and resources" (2016: p. 115); librarians have the role of "principled professionals working with their communities in transformative social engagement" (p. 73). The concept of community is linked to that of a participatory culture: "where librarians once acted as gatekeepers guarding limited resources, they now become lock-pickers and safecrackers. What they guard instead is our very participation in information culture: our opportunity, our privacy, and our freedom" (*LbB*: p. 49). Membership and accessibility mechanisms are consistent: "the library card is about to get smart. 'Smart' means biometric forms of identification; the ability to carry a reader's entire history of searches, loans, and scans; use for payment of special services; interoperability across institutions; a social fingerprint capable of tapping into the bearer's broader networks of interest" (p. 51); and "today, the temple's walls have vaporized into bits and bytes available on digital desktops and mobile services. The library is everywhere and the reference oracle is a search box with algorithmically sorted results (democratized, user-driven, user-centered)" (p. 53).

Material and Institutional Structures of Library. The material features of the library are intertwined, "the configurations are many; as they emerge in history, they tend to endure, finding new application in a given sociocultural situation. An

institution often expresses more than one of them. And they are never found solely in libraries" (*LbB*: pp. 32-33):

> «We might start with the *Mausoleum* – a place where the dead reside and where we go to commune with them; a *Cloister*, for reflection, mediation, and contemplation in shared solitude with labors of research and renewal; the *Database* – a container for information that is classified, accessible, controllable, infinitely expansible; the sort of *Warehouse* that we are later going to dub the "Accumulibrary" where the willy-nilly proliferation of documents and stuff is rendered navigable thanks to computational supports and mechanical eyes; a *Material Epistemology*, where collocations and consanguinities among different kinds of knowledge are proposed, experimented with, and affirmed; and a series of library type untethered to collection, from *Mobile Vectors* to *Civic Spaces*, where public ties are forged and affirmed, to freestanding *Reading Rooms* as spontaneous, popular, and (often) insurrectionary responses to closed and controlled versions of all the above».

On one side, "the memory palaces of the 21st century will have much more permeable walls than their 19th and 20th century predecessors" (*DH*: p. 49); and on the other "*neocloisters* are closest of siblings to its living *mausolea*. If the latter privilege deep storage and retrieval, the former prioritize the leveraging of that deep storage in support of the production of in-depth knowledge" (*LbB*: p. 63). And also, "in the digital library, books are not only data points in a catalog; they are also *databases* unto themselves, nested within databases, with links to outside databases in which they are data points as well" (p. 75); while the *accumulibrary* works with the logic of the "knowledge walk, […] a curated pathway amidst the shelving for the purpose of retrieving and consulting objects and works, exploring ideas, familiarizing oneself with a given era or field, or engaging in cultural-historical treasure hunts" (p. 85). Consistently: "if *mobile* libraries shift the focus away from the library as a fixed physical hub toward ubiquitous, even personalized delivery systems, and *mobilizing* libraries multiply the library's roles as a knowledge activation of information storage, the *momentary* library makes a virtue of impermanence" (p. 115). The institutional evolution of the library allows the introduction of archives as digital artefacts in a very broad phenomenon: "We do not live in a society that uses digital archiving, we live in an information society that *is* a digital archive" (Brouwer 2003: p. 6)

Method

The evidence on the history of the library reflects the choices of research method: investigating consumption processes and *market dynamics* through the institutional dimension of *memory practices* (Bowker 2005: table 1). Belk and Sobh (2019) recommend an analytical approach based on: "(i) an original phenomena-driven inquiry, (ii) combining grounded theory and abductive reasoning, and (iii) generating and comparatively analyzing alternative theoretical explanation".

History of library (as research context). This work takes a *historical institutionalism* perspective and a grounded theory approach for the data analysis. According to Suddaby *et al*. (2014), «over time individuals create social structures out of shared assumptions about the nature of social reality: (a) institutions are clearly to be understood as historical process, i.e. the outcomes of past events and interpretations of those events; (b) this process is underpinned by the interactions of individuals; (c) over time, interpretations of these actions, and the social significance attached to them, change» (p. 111). The reconstruction of the history of the library is based on three research programs: the work of Schnapp and Battles (2014: *LbB*) and the documentary "Cold Storage", by the "metaLABprojects" of Harvard; the working group on *Digital Humanities*, of Burdick *et al*. (2012: *DH*); the line of study developed by Lankes in his works (2011, 2012, 2016: *NL*).

Digital Humanities (as interpretive context) and materiality. The discipline of *Digital Humanities*, intended as «new modes of scholarship and institutional units for collaborative, transdisciplinary, and computationally engaged research, teaching, and publication» (*DH*: p. 64), has allowed the development of *data analysis* around the material dimension of the practices of production and use of digital archives: the abstraction process represented in figure 1 (Appendix A) emerged from concepts and categories typical of the grounded theory (Goulding 2002). Figure 1 shows evidences on the library and digital archives (boxes A and B) and the digital archiving practices from the analysis of *DHs* (box C).

Media Archaeology and Archive as Artifacts (as research design). The fifteen digital archiving practices in figure 1 constitute a list of *memory practices* in digital consumption and *market change* processes. The research hypothesis is developed starting from the logic of the STS considering the archive among the categories of objects, standards, classification systems and cataloguing mechanisms (Bowker 2005): «classification is a spatial, temporal, or spatio-temporal segmentation of the world [and] a classification system is a set of boxes (metaphorical or literal) into which things can be put to them do some kind of work – burocratic or knowledge production» (Bowker, Star 1999: p. 11). In the framework of *DHs*, the idea of materiality of *media archaeology* (Ernst 2013, 2021; Parikka 2012), «focused on a range of objects and apparatuses, often proto-cinematic ones but, increasingly, other forms of technical media such as recording and sound reproduction. In addition to social contexts and, for instance, design, media-archaeological theories are interested in going 'under the hood' to investigate the material diagrammatics and technologies of how culture is being mediatically stored and transmitted» (Parikka 2012: p. 65).

Findings: (Digital) Archives, Archiving and Digital Humanities

What is a digital archive? The "archive dynamics" proposed by the *media archaeology* are based on the relationship between "software culture" and "digital heritage" (Parikka 2012). The centrality of the notion of archive for historical research around digital media starts essentially: (i) from Foucault's idea (1972) to

broaden the concept of "physical place" for the storage of cultural data to "the discourses that govern modes of thinking, acting and expression" (Parikka 2012: p. 113), (ii) and from Derrida's investigation (1996) starting from the Greek etymology of the word "which means both commencement and commandment", where "[the *arkheion*] was originally situated in a privileged *space* over which the *archons* or magistrates traditionally governed". Therefore, the archive was a place of conservation, protection, classification and access in which, concretely and up to modern times, a key node for the transmission and storage of culture data was manifested, thus acting as *medium* deeply linked to bureaucratic control procedures (as well as data registration and manipulation). Although this classic form of archive is apparently "territorial, spatialized and walled – where the wall of the institution was also the border of its symbolic functions" (Parikka 2012, p. 114); focusing attention on the "memory practices" changing processes rather than on the archive itself, leaves room for understanding the methods of accessing and storing data, moving from delimited by walls and centrally controlled to widespread and software-based spaces.

The *new media objects* generate archiving practices: «created by digital technologies that 'live' in digital environments are comparatively different – in terms of material composition, authorship, meaning-making, circulation, reading, viewing, navigation, embodiment, interactivity, and expressivity – from artifacts created by the world of print» (*DH*: p. 29). Manovich provides a cataloguing of digital "cultural actions" (2013: p. 23): (1) creating cultural artifacts and interactive services which contain representations, ideas, beliefs, and aesthetic value; (2) accessing, appending, sharing, and remixing such artifacts (or their parts) online; (3) creating and sharing information and knowledge online; (4) communicating with other people; (5) engaging in interactive cultural experiences; (6) participating in the online information ecology by expressing preferences and adding metadata; (7) developing software tools and services that support all these activities. In the experience of "user/makers", digital objects and software-based cultural actions use more or less complex forms of databases: «instead of the narrative, the structural collections of data we call databases form new kinds of information realities enabled by computers» (Manovich 2013). The database, therefore, constitutes «a cultural form, a new symbolic form of the modern age, a new way to structure our experience of ourselves and of the world […] and, in the ontology of a computer the world is reduced to two kinds of software objects which are complementary to each other: data structures and algorithms» (p. 119). Narrations and databases seem to compete for the same "territory" in cultural production processes. Manovich (2009, 2013) suggests that the database has a "generative/ constitutive" nature of *new media objects* and that databases and narratives may have a common and unexpected "cultural status" in the "computer culture":

> «creating a work in new media can be understood as the construction of an interface to a database. Database becomes the center of the creative process in the computer age. Historically, the artist made a unique work within a particular medium […] (the level of

> interface did not exist). With new media, the content of the work and the interface become separate. It is therefore possible to create different interfaces to the same material (and these interfaces may present different version of the same work. […] *The new media object consists of one or more interfaces to a database of multimedia material*. This formulation [redefines] our concept of narratives. The "user" of a narrative is traversing a database, following links between its records as established by the database's creator. An interactive narrative [or hyper-narrative] can then be understood as the sum of multiple trajectories through a database» (p. 193).

Emerging digital practices of archiving. Production of digital objects, software-based cultural actions and archives/databases are parts of the same phenomenon: archiving practices constitute the last link in this ideal chain between digital objects and "software culture" actions connected to databases; while, memory and digital archives, through the methodologies of *media archaeology*, return a broader way of thinking about the procedural nature of the technical media themselves (Ernst 2013, 2021). Parikka (2012) reminds that: «the archive is being rethought in its role as a public institution connected to other institution of transmission of cultural heritage like museum, but also renegotiated through everyday practices of network culture. […] Participatory cultures force us both to rethink the practices of production of cultural content as dynamic, shared and defying the traditional author function, and also offer new ways of organizing data» (p. 133). Appadurai (2003) develops this topic around the relationship between digital archives and memory: digital archiving practices, "restore the deep link of the archive to the popular memory and its practices"; and digital archive "by allowing the formation of new prosthetic socialities, denaturalises the relationship of memory and archive, making the (interactive) archive the basis of collective memory as the substrate which guarantees the ethical value of the archive" (in Gane, Beer 2008: p. 81).

Figure 1 (Appendix A) re-proposes forms of *digital practices of archiving* that emerge from each of the cultural actions catalogued by Manovich (2013, 2020), forms of «*humanistic practices* – the decisions about what constitutes a text and its variants – to positing that *enhanced critical curation* of those texts makes possible *augmented editions* and *fluid textualities* that rely on the affordances of digital environments» (*DH*: p. 30). The equivalent of consumption processes (i.e. Belk 2013; Hoffman, Novak 2018; Parren, Kozinets 2018; Puntoni *et al*. 2021) cannot be retraced to the sole analysis of digital texts (Humphreys, Wang 2018). By combining the notions of "practice diffusion" (i.e. Akaka *et al*. 2022) and "consumer timework" (i.e. Robinson *et al*. 2022), *humanistic practices* provide a rather rich framework for framing digital production in *market change* processes: «This fluidity allows digital humanists to play with *scale*, both in terms of how they approach data and how they model their results. Toggling between *distant and close*, *macro and micro*, and *surface and depth* becomes the norm. Here, we focus on the importance of *visualization* to the *DHs* before moving to other, though often related, genres and methods such as locative investigation, *thick mapping*, *animated archives*, *database documentaries*, *platform studies*, and emergent practice like *cultural analytics*, *data-mining*, and *humanities gaming*. All of these

are then situated within a technological matrix that almost demands the *repurposing* and *remixing* of cultural content» (*DH*: p. 30). Finally *DHs* consider «the utopian prospect that the massive spread of shared knowledge across networks could give rise to a state of *ubiquitous scholarship/culture* of ever-more interconnected, publicly engaged, participant citizens» (*DH*: p. 30). From this point of view, «the archive returns to its more general status of being a deliberate site for the production of anticipated memories by intentional communities» (Appadurai 2003: p. 17)

Discussion and Conclusion: Cultural Memory Institutions and MSD

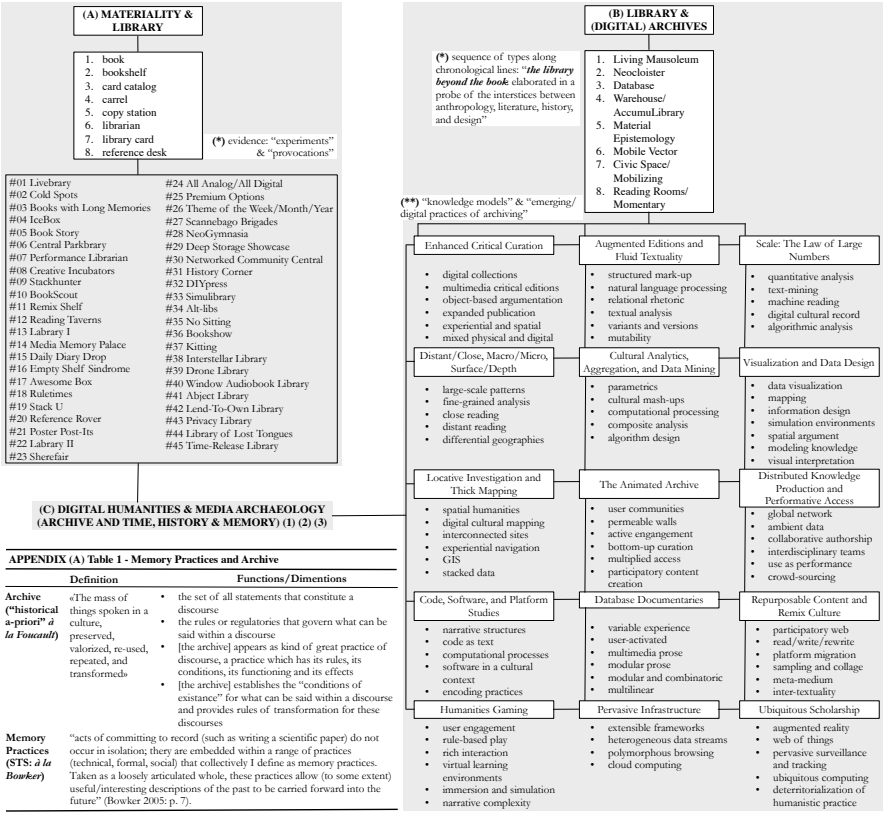
Cultural Institutions and Mnemonic Fields. The concept of mnemonic fields (box 1, Appendix) allows to explain the *market dynamics* around: «acts of remembering by participating actors [humans and non-humans] that bring together a new [social ordering] and a new spatiotemporal nexus connecting the past-present-future of the community, redrawing its boundaries, and reshaping the collective identity of the field» (Coraiola *et al*. 2018, p. 50). Memory constitutes a particular dimension of the institutional dynamics of markets in terms of *materiality & institutional work* (Lawrence, Suddaby 2006) and of history & institutional logics (Mutch 2018): from *mnemonic devices* (the digital archive as an artefact) *mnemonic practices* emerge (digital archiving practices) whose collective memories "take shape around" and contribute "to generate/give shape" to markets as *mnemonic communities* (Foroughi *et al*. 2020).

Memory and Market Dynamics: A Research Agenda. By introducing the concept of *memory practices*, it is possible to outline two dimensions (*memory perspectives* of the markets and markets as *mnemonic fields*) around which a research agenda can be imagined (table 2): (1) "archaeology of things" (archaeology of memory, the forgotten past, involuntary memories, "re-membering things", how societies remember, materializing memory: Olsen 2010; Hodder 2012); (2) "technology & memory" (ANT/STS; OOO/Assemblage Theory: DeLanda 2006; Harman 2002, 2005, 2009, 2011; Bryant 2011; Meillassoux 2006; Morton 2013); (3) "historical institutionalism"; (4) "consuming history" ("how a society consumes its history", "history and contemporary popular culture", "how the past manifests itself in society": de Groot 2009).

Concluding remarks. When each actor/actant in a market produces archives and practices digital archiving by generating *new media objects*, it also feeds the innovative dynamics suggested by Hoffman *et al*. (2022): new technology (i) supports new forms of interaction among consumers and firms, (ii) provides new types of data that enable new analytic methods, (iii) creates marketing innovation, (iv) requires new strategic marketing frameworks. By shifting attention to the archive as an object of analysis of digital production, memory emerges as a phenomenon to be managed in the processes of changing markets.

References available upon request

APPENDIX (A) Figure 1 - History of Library, Digital Humanities and Digital Practice of Archiving



APPENDIX (A) Table 1 - Memory Practices and Archive

	Definition	Functions/Dimentions
Archive ("historical a-priori" *à la Foucault*)	«The mass of things spoken in a culture, preserved, valorized, re-used, repeated, and transformed»	• the set of all statements that constitute a discourse • the rules or regulatories that govern what can be said within a discourse • [the archive] appears as kind of great practice of discourse, a practice which has its rules, its conditions, its functioning and its effects • [the archive] establishes the "conditions of existance" for what can be said within a discourse and provides rules of transformation for these discourses
Memory Practices (STS: *à la Bowker*)	"acts of committing to record (such as writing a scientific paper) do not occur in isolation; they are embedded within a range of practices (technical, formal, social) that collectively I define as memory practices. Taken as a loosely articulated whole, these practices allow (to some extent) useful/interesting descriptions of the past to be carried forward into the future" (Bowker 2005: p. 7).	

APPENDIX (A) Table 2 - Memory in Marketing Studies and Consumer Research: A Research Agenda

APPENDIX (A) Box 1 - Mnemonic Fields: definition (***) «Imagined communities that are bounded by **collective practices of remembering**»:
- the mnemonic fields are founded in **a collective act of remembering** that binds actors together in a common fate
- one created, mnemonic fields provide individual actors with **the contents and framework of remembering**
- they defines **the practices and categories actors use to remember the past**, make sense of the present, and image the future

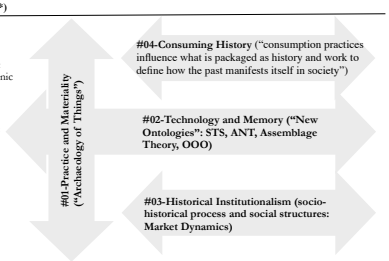
MNEMONIC FIELDS (***)

(1) Genealogical
- the **genealogical** (or non-narrative) dimension accounts for the ***material practices*** and ***artifacts*** transmitted from the past to the present

(2) Narrative
- the **narrative** (or symbolic) dimension comprises the ***narrative practices*** attached to forms of cultural and communicative memory

(3) Moral
- the **moral** (or normative) dimension of the field encompasses the remembrance and forgetting of the good and the bad, as well as the ***moral appropriateness of the practices and frameworks*** of remembering

MEMORY PERSPECTIVE	Conception of memory	Background	Key concern(s) (***)
(A) Interpretive	• A polyphonic collection of parallel and sequential narratives about shared past that vary depending on the focal actor and over time	• Studies of collective memory, organizational hermeneutics, storytelling, sense making, identity, culture	• Negotiations over shared pasts; social frameworks of memory, mnemonic community, mnemonic work
(B) Critical	• A site for political struggles concerning the nature of shared pasts	• Studies of collective memory, theories of power, critical theory, critical management/ marketing studies	• Politics of memory, counter-memories, interrogation of the past, mnemonic struggles
(C) Performative	• A generative, constitutive, enacted process that produces various types of cultural and material consequences constantly manifesting in the present through performance	• Studies of collective memory, theories of performativity, actor-network theory (ANT), social studies of science	• Material-discursive practices, remembering/ forgetting as performance, enactment, commemoration



(*) Schnapp, Battles (2014). *The Library Beyond the Book*. MIT Press; **(**)** Burdick *et al.* (2012). *Digital_Humanities*. MIT Press; **(***)** Coraiola *et al.* 2018; Foroughi *et al.* 2020; Foster *et al.* 2020
(1) archive & ANT/STS: Bowker, Star 1999; Bowker 2005; **(2) archive & media archaeology:** Parikka 2012, 2015; Ernst 2013; Kittler 1997, 1999; Huhtamo 2013; Huhtamo, Parikka 2011; McNeely, Wolverton 2008; Chun, Keenan 2006; Chun 2011, 2016; Berry 2012; Brown 2020; Blom et al. 2017; Fox Harrell 2013; Manovich 2001, 2013, 2020; Gitelman 2014; **(3) "new librarianship":** Lankes R.D.: (2011), *The Atlas of New Librarianship*, MITPress; (2016a). *Expect More. Demanding Better Libraries For Today's Complex World*, MITPress; (2016b). *The New Librarianship Field Guide*, MITPress.