Toward a Media History of the (Digital?) Wunderkammer:
A Case Study of Samuel Quiccheberg's 1565 Proposal for an Ideal
Wunderkammer

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ABSTRACT

A Media History of the (Digital?) Wunderkammer: A Case Study of Samuel Quiccheberg's 1565 Proposal for an Ideal Wunderkammer

Catherine van Reenen

The Wunderkammer—a collection of wonders peculiar to the late Renaissance in Europe—has recently become a popular metaphor for new digital media for its ability to challenge modern categories of knowledge. Given that very little has been written on the Wunderkammer—and virtually nothing from the perspective of media history—its newfound popularity in contemporary scholarship on digital media warrants a closer look at its history. This thesis examines the classification techniques and representational strategies of the late Renaissance Wunderkammer through a case study of a proposal for an ideal collection written by Samuel Quiccheberg in 1565. The case study serves as a point of entry into an analysis of the conditions that made the Wunderkammer an effective method of producing knowledge for sixteenth-century collectors, as well as provides an opportunity to identify historical discontinuities between phenomena now considered 'media'. I conclude by outlining a number of ways in which future media histories of the Wunderkammer might proceed.

ACKNOWLEDGEMENTS

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INTRODUCTION

This thesis develops a media history of the Wunderkammer, a form of collection during the late Renaissance in Europe that juxtaposed artificial and natural objects to represent the universe in microcosmic form. In doing so, the Wunderkammer grouped together seemingly unrelated objects, such as ancient religious relics with telescopes, scraps of metal with gold-plated nautilus shells, or handmade children's toys with portraits by well-known artists. This method of display resulted in what appears today as motley assortment of items resulting from a naïve violation of the epistemological boundaries of modernity. Recently, the Wunderkammer's strange method of classification (or lack thereof) has become of interest to scholars interested in the potential of digital media to challenge established knowledge-making practices. Some new media researchers have even described the Web as a 'digital Wunderkammer' for its ability to allow user-generated categories to drive the production and organization of heterogeneous content in a way that subverts traditional knowledge systems. I conceptualize these depictions of the Wunderkammer in contemporary scholarship on digital media as 'remediations'—a term coined by Bolter and Grusin to describe how media reappropriate the techniques and meanings of other media. In examining the historiography of the Wunderkammer, I argue that its digital remediation tends to draw on a stereotype of it that reinforces an impoverished understanding of Renaissance epistemology and an ahistorical concept of media. In order to demonstrate this argument, I take up a case study of a 1565 text written by Samuel Quiccheberg (a collections advisor for then-Duke of Bavaria, Albrecht V) on how to assemble a Wunderkammer. The goal of this case study is, first, to understand how the Wunderkammer became a useful method of generating and representing knowledge during the late Renaissance in Europe; and second, to identify historical discontinuities with respect to the concept of 'media' from the late Renaissance to the present.

This thesis proceeds as follows: First, I introduce the Wunderkammer in more detail and explore the various ways in which it has re-emerged in contemporary scholarly discussions of digital media. I also explore some of the historical scholarship on the Wunderkammer in order to better understand its relevance to contemporary digital media and explain how my media-historical approach contributes to this literature. Chapter one introduces Quiccheberg's *Inscriptiones vel tituli theatri amplissimi* and situates it within existing scholarship on the text. Chapter two explores

Quiccheberg's proposal for a Wunderkammer—or what he also called a 'universal theater'—in relation to certain cultural and philosophical transformations in sixteenth-century Europe, namely, a shift in the relationship between knowledge and experience, and the explosion of encyclopaedic activities. I argue that Quiccheberg's Wunderkammer was a pragmatic response to the problem of deciphering the secret network of relations between the seemingly infinite things of the universe. Following from this conception of knowledge specific to the late Renaissance, chapter three analyzes the classification system Quiccheberg developed for his proposed collection. I demonstrate that not only was Quiccheberg's Wunderkammer far from a disorderly agglomeration of random objects, it was in fact ordered meticulously through a complex set of reflexive categories. I conclude by reflecting on how the historical conditions that constituted Quiccheberg's ideal Wunderkammer differ from those of contemporary digital media and discuss how the Wunderkammer might provide a productive point of entry into future media histories.

The (Digital?) Wunderkammer

The late Renaissance in Europe saw the proliferation of privately-owned collections of natural, artistic, and ethnographic items which were arranged and displayed in cupboards, cabinets, closets, and sometimes entire rooms and palaces. These *Kunst- und Wunderkammern*[1] or art and wonder chambers, as they were called in Germany[2] contained an array of diverse objects, such as seeds, maps, skeletons, coins, tapestries, minerals, scripture, and sculptures, which were arranged to represent nature's plenitude in microcosmic form. While the contents and organization of individual Wunderkammern varied widely according to their owner's preferences, means, and geographical location, a distinguishing trait of these early modern collections was their inclusion of both *artificialia* and *naturalia.* Rather than separating natural items from human-made artifacts, owners of Wunderkammern brought them together within a single collection. The idiosyncratic

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[1] I use the term 'Wunderkammer' for the sake of brevity throughout this thesis, but it is interchangeable with 'Kunstkammer' or 'Kunst- und Wunderkammer' since these types of collections were closely associated and often fused together in a single space making them practically indistinguishable. The use of the abbreviated 'Wunderkammer' in this project is meant to maintain consistency for the reader but also because1) this is the term that has resurfaced most prominently in contemporary discussions of digital media and 2) the specific case study I undertake here concerns a German author's proposal for a collection of wonders of art and wonders of nature.

[2] Similar collections went by the term 'studioli' in Italy or 'curiosity cabinets' in England.

arrangement of Wunderkammern deliberately highlighted such juxtapositions—not only between nature and art, but also between ancient and modern, divine and human, European and non-European.[3] (The Wunderkammer was one technique for managing the seemingly infinite expansion of foreign materials wrought by imperial expansion during the early modern period.)[4] Through this distinct style of arrangement, collectors strived to elicit a sense of wonder in viewers. Wonder, during the early modern period, referred simultaneously to a cognitive passion integral to learning and a discrete ontological category that held the secrets of God's works.[5] By generating and displaying 'wonder', the Wunderkammer served as a technique of inquiry into the divinely-created universe specific to the Renaissance period.

Nearly as ubiquitous as they were short-lived, collections of arts and wonders flourished throughout Europe—primarily in Germany, Italy, Austria, France, England—starting in the mid-sixteenth century only to fall out of favour about a hundred years later. The decline of the Wunderkammer as a method of inquiry into the nature of the universe roughly coincides with the professionalization of the sciences throughout the seventeenth century. Gradually, wonders were shorn of their epistemic value—and became increasingly associated with the uncivilized vulgar masses—as natural historians and philosophers devised more rigid organizational strategies for collections, now increasingly specialized, institutional, and public rather than encyclopaedic, individual, and private.[6] By the eighteenth century, these wonder-full collections were, for the most part, dismantled, analyzed, and categorized according to modern scientific taxonomies—that is, relatively stable systems of classifying objects and organisms on the basis of shared characteristics. By the nineteenth century, some of the contents of Wunderkammern found their way into newly established museums, libraries, universities, art galleries, and archives, while other

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[3] Eilean Hooper-Greenhill, *Museums and the Shaping of Knowledge* (New York: Routledge, 1992), 82; Lorraine Daston and Katharine Park, *Wonders and the Order of Nature, 1150-1750* (New York & Cambridge: Zone Books, 1998), 255; Isabel Yaya, "Wonders of America: The Curiosity Cabinet as a Site of Representation and Knowledge," *Journal of the History of Collections* 20.2 (2008): 174.

[4] Maria Zytaruk "Cabinets of Curiosities and the Organization of Knowledge," *University of Toronto Quarterly* 80.1 (2011),33; Yaya, "Wonders of America," 185.

[5] Daston and Park, Wonders, 14.

[6] Steven Mullaney, "Strange Things, Gross Terms, Curious Customs: The Rehearsal of Cultures in the Late Renaissance," *Representations* 3 (Summer, 1983): 40-41; Paula Findlen, *Possessing Nature: Museums, Collecting, and Scientific Culture in Early Modern Italy* (London; Berkley and Los Angeles: University of California Press, 1994), 5; Lorraine Daston and Katherine Park, *Wonders and the Order of Nature, 1150-1750* (New York: Zone Books, 1998), 343; Eilean Hooper-Greenhill, *Museums and the Shaping of Knowledge* (London and New York: Routledge, 1992), 78.

objects were lost or destroyed. Looking back at the Renaissance Wunderkammer with modern eyes, it may appear as a product of category confusion—material evidence of an era on the verge of modernity, but not yet aware of the epistemological boundaries between, for example, art, religion, science, technology, and craft.

The Wunderkammer's proclivity for strange and surprising juxtapositions has recently become of interest to scholars working in various fields across the humanities and social sciences. Barbara Maria Stafford argues that Wunderkammern and digital media participate in a similar mode of knowledge production: each enables multiple user-directed methods of data collection and classification and displays heterogeneous information which appears to lack any hierarchical order, relying instead upon non-rational and often idiosyncratic principles of analogy, juxtaposition, and contiguity. In Stafford's view, both digital media and the Wunderkammer invite users to make their own connections and impose their own methods of organization on information through visual interaction.

> Looking back from the perspective of the computer era, the artifacts in a Wunderkammer seem less physical phenomena and more material links permitting the beholder to retrieve complicated personal and cultural associations. Looking forward from the Enlightenment world of apparently miscellaneous pleasures, we discern that scraps of wood, stone, or metal, religious relics, ancient shards, exotic fetishes, animal remains, miniature portraits, small engravings, pages torn from a sketchbook, are the distant ancestors of today's sophisticated software.[7]

Horst Bredekamp likewise argues that the Kunstkammer—with its visual logic of association and lack of clearly defined boundaries between art, technology, and nature—is a crucial reference point for understanding 'cyberspace'.[8] Ostensibly, assembling a chamber of wonders is similar to curating a digital space: in each case, collectors or users decide for themselves what content is important to display and how to display it. They are also responsible for directing their experiences within each space, defining their own pathways through the potentially vast and diverse multimedia elements inside, and drawing connections between them. Different people may make different 'discoveries' depending on their interests and idiosyncrasies, and these discoveries can then be added to the collection. The specific objects or information one encounters online or inside

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[7] Barbara Maria Stafford, *Good Looking: Essays on the Virtue of Images* (Cambridge: MIT Press, 1998), 74-75.
[8] Horst Bredekamp, *The Lure of Antiquity and the Cult of the Machine: The Kunstkammer and the Evolution of Art, Nature, and Technology,* trans. Allison Brown (Princeton: Markus Wiener, 1995), 113.

a Wunderkammer may differ but the manner in which one encounters them is, ostensibly, similar. In this regard, the affinity between digital media and the Wunderkammer is based largely on formal similarities as opposed to content; they seem to share a similar mode of mediation in that they represent the world according to user-generated methods of classification.

Echoing Stafford and Bredekamp's arguments, some new media scholars refer to search engines, image hosting websites, or social networking sites as 'digital Wunderkammern'.[9] In these works, particular types of digital media are presented as new versions of the late Renaissance Wunderkammer. Robert Gehl, for example, describes YouTube as a Wunderkammer-like archive insofar as each flattens its content along a horizontal plane and lacks a centralized "curator of display."[10] In this sense, YouTube and the Wunderkammer both position their users as "extremely powerful curators in the process of categorization and classification."[11] However, Gehl warns that as YouTube's curatorial practices are increasingly relinquished to entrepreneurs, media corporations, and other mediators, "they are refining 'Internet video' into another capitalist institution, just as professionalized curators refined *Wunderkammers* into the modern museum in the 18th century."[12]

Similarly, Melissa Terras describes image-hosting platform Flickr as a digital Wunderkammer, but she is less wary than Gehl about the potential for institutional mediators to co-opt the user-generated content of the Web. In fact, this potential for co-optation—or what Terras frames as cooperation—is precisely what she describes as the digital Wunderkammer's main benefit. Terras challenges what she describes as the dominant view of the internet held by official cultural heritage institutions as a vast nonsense-making machine—that is, a digital Wunderkammer.[13] She argues that by linking a 'digital Wunderkammer' like Flickr to official cultural heritage institutions, the "field of meaningless rubbish"[14] created online by amateurs

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[9] Hubert Burda, *The Digital Wunderkammer: 10 Chapters on the Iconic Turn* (Munich: Wilhelm Fink Verlag, 2011), 179; Robert Gehl, "YouTube as Archive: Who Will Curate This Digital Wunderkammer?" *International Journal of Cultural Studies* 12, no. 1 (2009): 45; Melissa Terras "The Digital Wunderkammer: Flickr as a Platform for Amateur Cultural and Heritage Content," *Literary and Linguistic Computing* 59.4 (2011): 686.

[10] Robert Gehl, "YouTube as Archive: Who Will Curate This Digital Wunderkammer?" *International Journal of Cultural Studies* 12.1 (2009): 43.

[11] Ibid., 47.

[12] Ibid., 49.

[13] Terras, "The Digital Wunderkammer: Flickr as a Platform for Amateur Cultural and Heritage Content," *Literary and Linguistic Computing* 59.4 (Spring 2011): 687-8.

[14] Ibid., 688.

becomes relevant and useful to professional curators in their attempts to democratize museum collections. Despite their different views on the future of digital content curation, Gehl and Terras articulate a similar view in that, for them, the heuristic appeal of the Wunderkammer as an analogue for digital media lay precisely in that which made their 16th and 17th-century versions ineffective methods of knowledge production for 18th-century intellectuals as they sought to professionalize the sciences—namely, the Wunderkammer's lack of firmly established categories and the absence of a unified classificatory system across individual collections.

Other theorists describe the revival of the Wunderkammer as a structuring device in various art installations and museums and draw on it as a source of inspiration for new media art and digital collection practices.[15] Michelle Henning points out a renewed interest in curiosity and wonder in contemporary display aesthetics, which she links to the institutional adoption of new digital media. In her view, Wunderkammern and digital media both involve "a turn toward networked and decentered knowledge, and a privileging of arbitrary associations and resonances."[16] For example, in *Devices of Wonder*: *From the World in a Box to Images on Screen* (a multi-media exhibition and accompanying book by the same name)*,* Barbara Maria Stafford, Frances Terpak, and Isotta Poggi attempt to re-imagine the curiosity cabinet's "epistemic organization by juxtaposition and superimposition of heterogeneous elements" through interactive digital exhibition practices.[17] Similarly, Susan Delagrange's web-project entitled *"Wunderkammer,* Cornell, and the Visual Canon of Arrangement" (2006) draws on the sixteenth-century Wunderkammer in order to illustrate the inseparability of visual arrangement from invention in processes of knowledge production.[18]

The ability of digital media to re-introduce the Wunderkammer's idiosyncratic pathways of discovery, together with its relational and visual logics, is sometimes presented as an "antidote

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[15] Michelle Henning, *Museums, Media and Cultural Theory*, Series: Issues in Cultural and Media Studies (Maidenhead & New York: Open University Press, 2006), 153; Anna Munster, *Materializing New Media: Embodiment in Information Aesthetics*, (Hanover: University Press of New England, 2011),12; Stafford and Terpak, *Devices of Wonder,* 3.

[16] Michelle Henning, *Museums, Media and Cultural Theory* (Maidenhead, England; New York: Open University Press, 2006), 154.

[17] Barbara Maria Stafford, Frances Terpak, and Isotta Poggi, *Devices of Wonder: From the World in a Box to Images on a Screen* (Los Angeles: Getty Research Institute, 2001), 3; See https://www.getty.edu/art/exhibitions/devices/flash/ for a digital version of the installation.

[18] Susan Delagrange, "Wunderkammer, Cornell, and the Visual Canon of Arrangement," *Kairos: A Journal of Rhetoric, Technology, and Pedagogy* 13.2 (2009): http://kairos.technorhetoric.net/14.1/inventio/delagrange/

to the hyperrational claims of taxonomic systems and systematic organization in general."[19] In this view, the Wunderkammer's apparent category confusion serves as inspiration for alternative methods of knowledge production: blurring the boundaries between categories that are typically (or properly) separate—such as nature and culture, human-made or natural, or art and science— illustrates the contingent nature of our own methods for ordering and producing knowledge and suggests how things might be otherwise.[20]

As these examples illustrate, the late Renaissance Wunderkammer's methods of classification and representation are especially intriguing to scholars interested in the potential of digital media to challenge or improve contemporary methods of knowledge production. The re-emergence of the Wunderkammer in these contemporary scholarly discourses can thus be understood as a process of remediation. Remediation, as Jay David Bolter and Richard Grusin explain, refers to the representation (whether obvious or subtle) of any medium in another medium.[21] The re-emergence of the Wunderkammer in relation to digital media suggests that the "techniques, forms, and social significance"[22] of the Wunderkammer are being reappropriated in an attempt to improve digital media. The literatures discussed above might thus be understood as examples of the digital remediation of the Wunderkammer.

Although remediation, in Bolter and Grusin's view, is a defining feature of digital media, it has been a condition of mediation since at least the Renaissance. In fact, the authors point to the Wunderkammer as a good example of Renaissance 'hypermediacy'—that is, a strategy of remediation that not only acknowledges but celebrates the mediated nature of representation itself.[23] Hypermediacy is a counterbalance to the other strategy of remediation, which Bolter and Grusin name 'immediacy'. While hypermediacy actively calls attention to the act of mediation, immediacy operates by making the medium withdraw from view in order to make the mediated

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[19] Mark A. Meadow in Preface to Samuel Quiccheberg's *Inscriptiones,* viii.
[20] See Maggie MacLure, The Bone in the Throat: Some Uncertain Thoughts on Baroque Method," *International Journal of Qualitative Studies in Education* 19.6 (2006): 729-745; MacLure, "The Wonder of Data," *Cultural Studies ←→Critical Methodologies* 13.4 (2013): 228-232; "Richard Philips, "Curious about Others: Relational and Empathetic Curiosity for Diverse Societies," *New Formations* (2015): 123-142; and Dorthe Staunæs & Jette Kofoed, "Producing Curious Affects: Visual Methodology as an Affecting and Conflictual Wunderkammer," *International Journal of Qualitative Studies in Education* 28, no. 10 (November 26, 2015): 1229–48.
[21] Ibid., 45
[22] Jay David Bolter and Richard Grusin, *Remediation: Understanding New Media* (Cambridge: MIT Press, 2000)*, 65.
[23] Ibid., 36.

content appear as if it is *really* present. Digital hypermedia, such as computers, web browsers, and social media applications, offer a space in which "representation is conceived of not as a window on to the world, but rather as 'windowed' itself—with windows that open on to other representations of other media."[24] As such, they seem to remediate the heterogeneous space of the Wunderkammer with its multiple surfaces, chests, frames, drawers, and containers.

For Bolter and Grusin, a key implication of the concept of remediation is that new media are never fully 'new'. "What is new about new media comes from the particular ways in which they refashion older media and the ways in which older media refashion themselves to answer the challenges of new media."[25] In other words, remediation is not a linear process: old media influence new media—or become their contents, as McLuhan famously argued—but new media retroactively shape old media, too. How, then, does the digital remediation of the Wunderkammer retroactively influence its history?   A closer look at existing scholarly literature on the Wunderkammer will help to elucidate the historical effects of its digital remediation.

A Brief Historiography of the Wunderkammer

The earliest known historical analysis of the Wunderkammer is Julius von Schlosser's 1908 *Die Kunst- und Wunderkammern der Spätrenaissance* which, in John Hanson's reading, traced the origins of the Wunderkammer back to ancient and medieval church treasuries and, in doing so, provided one of the first museologies.[26] In his analysis of Rudolf II's royal collection, Thomas DaCosta Kaufmann argues that von Schlosser "regarded [the Wunderkammer] as a kind of circus sideshow lacking any organizational principle or orderly display. Unicorn horns and magic stones are said to have been heaped up alongside great paintings by Durer and Brueghel throughout the rooms of the imperial castle in Prague."[27] Similarly, Eilean Hooper-Greenhill observes that historians initially approached the Wunderkammer "as a disordered jumble of unconnected

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[24] Ibid.*,* 34.
[25] Ibid., 15.
[26] John Hanson, "Two Scenes from the Prehistory of the Byzantine Blockbuster," in *Wonderful Things: Byzantium Through Its Art,* eds. Antony Eastmond and Liz James (Surrey and Burlington: Ashgate Publishing, 2013), 34.
[27] Thomas DaCosta Kaufmann, "Remarks on the Collections of Rudolf II: The *Kunstkammer* as a Form of *Representatio*," in *The Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth- Century Europe,* eds. Oliver Impey and Arthur MacGregor (Oxford: Clarendon Press, 1985), 526.

objects, many of which were fraudulent in character" and thus understood it as "the product of a saturnine disordered mind, where superstition and magic combine with 'pre-scientific stirrings.'"[28]

Despite its perceived lack of order or coherence, the Wunderkammer has typically been regarded as an example of the Renaissance era's spirit of inquiry for its (noble but ultimately failed) attempt to advance human kind through the pursuit of knowledge. As such, historians after von Schlosser approached the Wunderkammer as a predecessor of the modern museum, emerging around the 19th century, and understood it to represent an intermediary phrase in the formation of modern scientific disciplines.[29] The majority of scholarship on the Wunderkammer thus examines the establishment and development of particular scholarly collections or those established as part of royal courts, as in Oliver Impey and Arthur MacGregor's 1985 edited volume of cabinet histories, the publication of which led to the founding of the *Journal of the History of Collections*. Through the meticulous examination of catalogues, inventories, engraved illustrations of Wunderkammern, and correspondences between collectors, merchants, and scholars, and other primary sources, historians have been able to identify the contents of specific collections, which often changed as they were inherited or purchased by other collectors. Sometimes these descriptive histories trace the social lives of objects from their inclusion in Wunderkammern to their transfer to more specialized natural history collections and eventual incorporation into nineteenth-century museums.[30] Indeed, many of the same objects displayed in Wunderkammern—astronomical instruments, texts, sculptures, fossils, utensils, shells, skeletons, and other items—were preserved and carried over into museum collections and provided empirical evidence for scholars working in anthropology, history, geology, and biology, among other disciplines.[31]

However, many other items were not transferred to modern museum collections, especially those that did not fit into the epistemological frameworks of modern disciplines. In the shuffle of

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[28] Hooper-Greenhill, *Museums and the Shaping of Knowledge,* 79.

[29] Eilean Hooper-Greenhill, *Museums and the Shaping of Knowledge*, 79; Oliver Impey and Arthur Macgregor, *The Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth- Century Europe* (Oxford: Clarendon Press, 1985) 1; Joy Kenseth, *The Age of the Marvelous* (Hanover & New Hampshire: Hood Museum of Art & Dartmouth College, 1991) 247; Pomian, *Collectors and Curiosities,* 63-4.

[30] For excellent examples of this meticulous work see Barbara Jeane Balsiger, "The Kunst- und Wunderkammern: A Catalogue Raisonne of Collecting in Germany, France and England, 1565-1750," Ph.D. dissertation, University of Pittsburgh, 1970 and Paul Grinke, *From Wunderkammer to Museum* (London: Bernard Quaritch, 2006).

[31] Findlen, *Possessing Nature,* 232; Steven Mullaney, "Strange Things, Gross Terms, Curious Customs: The Rehearsal of Cultures in the Late Renaissance," *Representations,* no.3 (July 1983): 41.

things, the Wunderkammer began increasingly to figure as a 'beta version' of the museum, insofar as it shared the same basic function of classifying and representing the world, but attempted to do so on the basis of what were thought to be erroneous assumptions about the nature of the universe and thus failed to develop a proper classification system or taxonomy.[32] According to Paul Grinke, "Taxonomy is surely the key to the progression from the private cabinet to the public museum: the idea of the collection as an Ark, a toy box of treasures and playthings, gradually gives way to a systematic codification of objects for academic research and public enlightenment."[33] The inclusion of incorrectly identified items (e.g. dinosaur bones, which were thought to belong to giants, and narwhal tusks which were labeled as unicorn horns) and especially mythical and supernatural elements (e.g. relics, monsters, and images depicting Christian miracles) has contributed to the characterization of the Wunderkammer as a quaint and misguided attempt to classify and represent the natural world.[34] Retrospectively, then, the museum appears as the winning model for its more 'rational' (i.e. secular) and 'public' (i.e. institutionally governed) techniques of knowledge production.

Although it is true that many of the objects today found in museums were once displayed in Wunderkammern, the account of the Wunderkammer as a predecessor of the modern museum is based on the implicit assumption of the linear development of technologies. As a result, this view reaffirms established points of rupture and closure in hegemonic narratives of Western modernity, such as the transition from an oral to a literate society with the invention of the printing press and the association of the increased availability of printed texts with individualism, democracy, and science.[35] More recently, some scholars have begun to re-examine the Wunderkammer as a site of cultural activity distinct from the museum and to analyze its techniques of classification and display within the context of Renaissance epistemology.[36] Steven Mullaney, for example, contends that "a wonder-cabinet is not a museum, not even a vague or half-formed gesture toward one" since, despite sharing many of the same objects in their displays, their criteria

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[32] Impey and MacGregor, *The Origins of Museums,* 1.
[33] Grinke, *Wunderkammer to Museum,* 10.
[34] Hooper-Greenhill, *Museums and the Shaping of Knowledge,* 79.
[35] Lisa Gitelman, *Always Already New: Media, History, and the Data of Culture* (Cambridge & London: MIT Press, 2006), 3-4.
[36] Stephanie Jane Bowry, "Re-Thinking the Curiosity Cabinet: A Study of Visual Representation in Early and Post-Modernity," (Ph.D. dissertation, University of Leicester, 2015), 15-16.

for selection and strategies of organization and display differ significantly. Similarly, Hooper-Greenhill's analysis takes into account the representational strategies, epistemological principles, and intellectual frameworks of the Renaissance, and thus illustrates that "the 'cabinets of curiosity' are far more than the miscellaneous products of disordered minds, but also that these 'direct ancestors' of modern museums were constituted from within a quite different frame of reference."[37]

Failing to take seriously the concepts and practices that were constitutive of (and constituted by) the Wunderkammer's historical specificity risks remaking the past as a reflection of the present. As such, some historians are critical of the ways in which the Wunderkammer has re-emerged in contemporary discourses. Bruce Robertson observes that contemporary depictions of the Wunderkammer tend to over-emphasize its apparent disorder. He explains, "Contemporary curiosity cabinets are generally presented to overwhelm the modern viewer with an irrational dazzle of objects—trivial, overmanipulated, found, obscure, and anything but explicable."[38] The Wunderkammer's display of heterogeneous content in a manner lacking a consistent overarching order is precisely why it has been used as an analogue for digital media. In other words, in its digital remediations, the Wunderkammer's inexplicability is essential to its heuristic function. Echoing Robertson's critique, David L. Martin argues that contemporary depictions of the Wunderkammer may result in simplistic and ahistorical explanations of Renaissance epistemology because "[t]he implicit logic here is that the 'curiosity' of the Renaissance can be 'known' to us today, merely through the assemblage of physical objects in an arrangement lacking in modern taxonomic hierarchies."[39] According to this logic, Renaissance knowledge is defined in terms of an absence of modern categories, rather than as an alternative epistemological framework.

With these critiques in mind, it is worth dwelling on whether digital remediations of the Wunderkammer retroactively authorize an impoverished understanding of Renaissance epistemology. Although the Wunderkammer may appear to modern eyes to violate epistemological boundaries, it is important to remember that these are *our* boundaries and may not

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[37] Hooper-Greenhill, *Museums and the Shaping of Knowledge,* 104.

[38] Bruce Roberston, "Preface," in *The First Treatise on Museums: Samuel Quiccheberg's* Inscriptiones, *1565,* eds. Mark Meadow and Bruce Robertson (Los Angeles: Getty Research Institute, 2013), viii.

[39] David L. Martin, *Curious Visions of Modernity: Enchantment, Magic, and the Sacred* (Cambridge and London: MIT Press, 2011), 12.

have applied to the concepts or practices of sixteenth-century collectors. In describing the Wunderkammer as an analogue for digital media on the basis of its apparent lack of rigid hierarchies and resulting display of heterogeneous information, contemporary authors may—however unwittingly—be promulgating an inaccurate understanding of the Wunderkammer. The celebration of the apparent dis-order of the Wunderkammer may reinforce its characterization as an arbitrary assemblage of unrelated objects, despite the fact that this characterization is based on a poor understanding of the specific classification techniques used by Renaissance collectors to represent the world. Thus, by focusing on the historical conditions in which the Wunderkammer became a useful method of representing the universe, this thesis aims to develop a media history of the Wunderkammer.

A Media-Historical Approach to the Wunderkammer: Studying Media Before Media (Studies)

At the time of this writing, the only media theorist to have critically addressed the emergence of the 'digital Wunderkammer' is Wolfgang Ernst. In his introductory lecture for the 2015 academic conference of Ultima Contemporary Music Festival in Oslo, Ernst takes up the apparent return of the Wunderkammer in digital media and asks, "Is this simply a superficial nostalgia for a non-classificatory, rather similarity-based 'order of things' as practiced in Renaissance and [Baroque] times (Foucault), or does this recursion indicate a deep-structural affinity between the Wunderkammer and the dynamics of the Internet?"[40] Ernst wastes no time in answering his own (rather loaded) question: he dismisses the comparison on the grounds that there is no structural affinity between the Wunderkammer and the Internet and, therefore, asserts that its re-emergence today is a symptom of nostalgia. [41] Ernst's assertion makes more sense in the context of his broader position on premodern media—namely, that there are none. As Anne Marie Rasmussen and Markus Stock explain, for Ernst and other proponents of an "information-technological approach" to the study of media, "the term *media* cannot be applied to the conditions of premodern

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[40] Wolfgang Ernst, "'On Nature' and the Un-Natural: Re-visiting the *Wunderkammer* with Media-Archaeological Eyes & Ears," (lecture, Academic Conference of Ultima Contemporary Music Festival: *On Nature*, Oslo, Norway, September 10, 2015).
[41] Ibid., 2.

materialities of communication at all because these remain fundamentally bound to direct human involvement."[42] For Ernst, the Wunderkammer's dependence on human processing power makes it premodern and thus incomparable to modern media technologies capable of storing, processing, and transmitting information directly. In this view, all discussions of premodern media are characterized by what Ernst calls 'Mediennostalgie' for their anachronistic application of an analytic concept that, in his view, has no relevance for the study of phenomena that precede the advent of modern electronic media.[43] Ernst's claim that the re-emergence of the Wunderkammer in digital media can be chalked up to scholars' nostalgia for a non-classificatory, non-systematized era must be understood in terms of this strict conceptual division between premodern and modern methods of storing, processing, and transmitting information.

As Ernst makes clear, the remediation of the Wunderkammer poses a methodological dilemma for the media historian: Can the term 'media' be retroactively applied to phenomena from an historical period that precedes the invention of the concept as an analytic tool, and if so, how can this be done in a way that avoids remaking the past in the image of the present? As Ernst, Robertson, and Martin point out, new media projects that take their inspiration from the Wunderkammer tend to rely on a reductionist view of Renaissance epistemology and thus produce ahistorical results. A major implication of these authors' critiques is that in curatorial, theoretical, and artistic attempts to recreate the 'wonder' (in the sixteenth-century sense of a cognitive passion essential to inquiry) of the Wunderkammern for contemporary researchers, as well as gallery and museum visitors, the apparent continuities between the late Renaissance and the present are overemphasized to the neglect of significant cultural and historical distinctions. The stereotype of the Wunderkammer as a hodgepodge of miscellany items, although potentially useful as a heuristic device for research on (and with) new digital media, is nevertheless the product of an ahistorical understanding of Renaissance epistemology. Indeed, the term 'media' was used differently by sixteenth and seventeenth century intellectuals from how it is used in academic discourse today. As Wendy Hui Kyong Chun observes,

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[42] Ann Marie Rasmussen and Markus Stock, "Introduction: Medieval Media", *Seminar: A Journal of Germanic Studies* 52.2 (May 2016): 100.
[43] Ernst, "'Medien' im Mittelalter? – Kulturtechnische Retrospektive," Mediavistik im 21. Jahrhundert: Stand und Perspektiven der internationalen und interdisziplinaren Mittelalterforschung, eds. Hans-Werner Goetz and Jorg Janut, 347-357 (Munich: Fink, 2003), 351.

In terms of media, histories that reach from the Renaissance to the present day elide the fact that: one, although the word medium does stretch across this time period, its meaning differs significantly throughout; two, the plural-singular term 'media' marks a significant discontinuity. According to the *Oxford English Dictionary* (OED), media stems from the Latin *medium* meaning middle, center, midst, intermediate course, intermediary (hence medium/average height and spiritual medium). In the fifteenth century, medium emerged as an intervening substance in English, stemming from the post-classical Latin phrase *per medium* (through the medium of) in use in British sources since the thirteenth century. The term 'media' (as opposed to mediums or medium) is linked to mass media: in the eighteenth century, paper was a medium of circulation, as was money; in the nineteenth century, electricity was a medium; in the late nineteenth and twentieth centuries, media emerged as the term to describe inexpensive newspapers and magazines and, in an affront to English and Latin, became a singular noun.[44]

At the time when the Wunderkammer emerged in the sixteenth century, it would not have been understood as a medium in our current sense of a meaning-carrying vessel used to communicate specific units of information to multiple people simultaneously. Indeed, this understanding of media obscures other discontinuities through its entanglement with the terms 'communication' and 'information'. As Peters explains, our word 'communication' comes from the Latin 'communicare' which means "to impart, share, or make common."[45] In its Latin sense, "to 'communicate' is an act of receiving, not of sending; more precisely, it is to send by receiving."[46] This sense of 'communication' as imparting hints at the Latin etymology of 'information' which derives from 'informer' and, according to Bernard Geoghegan, "denoted the imparting of form onto matter."[47] 'Communication', as we use it today, generally refers to the reciprocal exchange of ideas between human senders and receivers. As such, 'information' usually refers to stable units of data that can be transferred through multiple channels to various locations without degradation or interference. During the medieval and early modern periods, however, European authors most commonly employed the terms 'media', 'communication', and 'information' in their Latin-derived senses—and often in Latin. Even if we take a broad view of media—as 'middle' or 'intervening substance'—sixteenth and seventeenth century collectors had different expectations about their

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[44] Wendy Hui Kyong Chun, "Introduction: Did Somebody Say New Media?", in *New Media, Old Media: A History and Theory Reader* eds. Wendy Hui Kyong Chun and Thomas Keenan (New York & London: Routledge, 2006), 2.
[45] Peters, *Speaking into the Air: A History of the Idea of Communication* (Chicago: University of Chicago Press, 1999), 23.
[46] Ibid., 24.
[47] Bernard Geoghegan, "Information," in *Digital Keywords: A Vocabulary of Information Society and Culture,* ed. Benjamin Peters (Princeton: Princeton University Press, 2016), 174.

effects, operations, and uses. Furthermore, "we are talking about a mediality that is not yet accompanied by a coherent discourse on its own conditions."[48] In other words, while there were—of course—such things as premodern media in the sense of intervening substances that could "amplify, convey, or channel a force or power" and thereby "create the illusion of immediacy,"[49] there was no established scholarly discourse dedicated exclusively to the study of these phenomena. The late Renaissance Wunderkammer was never understood as a 'medium' or as belonging to an analytic category of phenomena called 'media' that coincides precisely with our current use of the term. The Wunderkammer emerged, flourished, and disintegrated "before the realization of communication as a discourse, before the materialization of devices capable of automatic storage, processing, and transmission, and before the formation of information theory as a means of understanding and optimizing these developments."[50] If these are the criteria by which one defines media then analyzing Wunderkammern as media does indeed smack of anachronism.

Ernst's assertion that the digital remediation of the Wunderkammer is merely a symptom of nostalgia strikes me as more of an accusation than an explanation. With this label, Ernst not only dismisses the 'digital Wunderkammer' but also characterizes the study of medieval and early modern media as sentimental—and therefore ahistorical and illegitimate—on the basis of what is ultimately a conceptual disagreement over what is meant by the term 'media'.[51] While I agree that drawing hasty and unqualified analogies between 'old' and 'new' media from any historical period leads to an impoverished understanding of each—especially as doing so tends produce an image of the past that looks rather conspicuously like the present—I find Ernst's embargo on the study of media before the advent of modern electronic forms of storing, processing, and transmitting information to be far too limiting. Although many of the digital remediations of the Wunderkammer are indeed based in a rather ahistorical understanding of its role in late Renaissance culture, this is not an inevitable result but one that suggests that the historiography of the Wunderkammer needs to be reexamined and reconstructed (which is to say 'remediated').

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[48] Rasmussen and Stock, "Introduction: Medieval Media," 102.
[49] Ibid., 98.
[50] Erik Born, "Media Archaeology, Cultural Techniques, and the Middle Ages: An Approach to the Study of Media before the Media," *Seminar: A Journal of Germanic Studies* 52.2 (2016): 109
[51] Rasmussen and Stock, "Introduction: Medieval Media," 100.

Prohibiting the study of media before the advent of modern electronic forms is an inappropriate treatment for the 'symptom' of nostalgia, not only because the ahistorical view of the Wunderkammer as an irrational method of classifying the world derives from disciplines other than media studies, but also because if the Wunderkammer's re-emergence is a symptom of nostalgia then this symptom is precisely the phenomenon in need of explanation. Nostalgia is an effect—not a cause—of a lack of historical specificity.

Medieval historian Erik Born suggests a more productive approach to the study of media before the advent of 'the media' or 'media studies', which—unlike Ernst's—does not render the premodern period one of 'amediality' and thereby reinforce existing divisions between the medieval and modern periods, as well as the disciplinary boundaries between the people who study them.[52] If the aim is to avoid retrojecting our own analytic categories into distinct historical periods in order to respect their "medial alterity"[53] then I think a more constructive approach might, as Born suggests, "take up the apparent similarity between forms of medieval mediality and those of the present, precisely in order to clarify distinctions between historical periods and make historical differences visible."[54] By 'mediality', Born refers to the conditions through which a particular thing comes to function as a mediator in the broad sense of coming between to represent something else. An approach that focuses on mediality rather than particular media seems especially productive in terms of discerning *how* our modern concepts of media—as well as communication and information—differ qualitatively from those of other eras, rather than just taking their differences for granted or assuming that these differences are so radical as to be utterly inaccessible to modern forms of analysis. The study of past methods for the creation and circulation of representations can serve as a helpful reminder that our current assumptions about the uses of specific media, as well as the way we talk conceptualize 'media' as an analytic category, are all but neutral or given.

Following Mullaney and Hooper-Greenhill's critiques of the stereotype of the Wunderkammer as a misguided proto-museum, I develop a media history of the Wunderkammer in order to clarify the conditions that made it epistemologically productive during the late

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[52] Born, "Media Archaeology, Cultural Techniques, and the Middle Ages," 110; Rasmussen and Stock, "Introduction: Medieval Media," 97.
[53] Rasmussen and Stock, "Introduction: Medieval Media," 101.
[54] Born, "Media Archaeology, Cultural Techniques, and the Middle Ages," 113-114.

Renaissance in Europe. How was knowledge conceived of by participants in the sixteenth-century culture of collecting? Why was a collection of *artificialia* and *naturalia* necessary to achieve this type of knowledge? What cultural assumptions gave rise to the Wunderkammer's seemingly strange techniques of classification and representation? These questions are undoubtedly shaped by present concerns about media, not least of which includes the recent resurgence of interest in the Wunderkammer and its apparent similarities to digital media. As Walter Benjamin recognized, "The present determines where, in the object from the past, that object's forehistory and after-history diverge so as to circumscribe its nucleus."[55] Benjamin's point about historical objects reminds us that the emergence (and reemergence) of any medium is always based in a specific moment. Indeed, as Gitelman insists, in media history "[s]pecificity is key."[56] Thus, rather than write broadly about chambers of arts and wonders as if they were "immutable objects with given, self-defining properties"[57]—a strategy that has undoubtedly contributed to some of the historiographical problems discussed here—I take up a specific case study as an entry point into the media history of the Wunderkammer.

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[55] Walter Benjamin, *The Arcades Project,* trans. Howard Eiland and Kevin McLaughlin (Cambridge & London: Belknap Press, 1999), 476.
[56] Lisa Gitelman, *Always Already New: Media, History and the Data of Culture* (Cambridge, Mass: MIT Press, 2006), 8.
[57] James Lastra, *Sound Technology and the American Cinema: Perception, Representation, Modernity* (New York: Columbia University Press, 2000), 13.

CHAPTER ONE

Inscriptiones vel tituli theatri amplissimi… by Samuel Quiccheberg

In 1575—four years before his death—Albrecht V, Duke of Bavaria, wrote a letter to the Queen of Spain requesting exotic objects to add to his collection of art and wonders.[58] Such requests were common among members of the noble class, many of whom were also in the process of developing their own Kunst- and Wunderkammern and thus welcomed the exchange of gifts between royal courts as a way of expanding their collections. The Duke had been gathering items for his collection at Munich since at least 1563, when construction on the building to house these 'exotic objects', among other things, had begun.[59] An inventory of the Munich Kunstkammer prepared by lawyer Johann Baptist Fickler in 1598 reports that it held over 6,000 items, many of which were likely received as gifts or donations.[60] By that time, the entire collection—including the Kunstkammer, antiquarium, Schatzkammer (treasure chamber), and library—had been passed down to Albrecht's son, Wilhelm V (who had requested the inventory), and spanned a four-winged multi-storied building surrounding a courtyard. The Kunstkammer occupied the entire top floor of the building in which there were 3,400 distinct locations with items displayed throughout on tables, walls, panels, cabinets, and shelves.[61] The north wing of the building was the longest and as the starting point for tours of the Kunstkammer, it held some of the most impressive and valuable items of the entire collection, including a large coin collection and portraits of various rulers throughout history, ranging from antiquity to Albrecht's lifetime. The north wing also provided a vantage point from which the ruler's palace could be seen through a window.[62]

In addition to coins and portraits, the collection contained natural specimens, such as fossils, shells, and animal bones, as well as 'magico-medical' items like bezoars and unicorn horns, and a small selection of scientific instruments including mechanical clocks and drawing

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[58] Lorenz Seelig, "The Munich *Kunstkammer,* 1565-1807," in *The Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe*, eds. Oliver Impey and Arthur MacGrecor (Oxford: Clarendon Press, 1985), 85.
[59] Ibid., 77.
[60] Ibid., 85.
[61] Ibid., 78.
[62] Ibid., 80.

instruments.[63] Some of the more 'exotic objects' displayed in the Munich *Kunstkammer* included ethnographic artifacts taken from colonial expeditions to the New World, such as: "Sinhalese ivory fans or Malayan palm-leaf fans; a feather mosaic panel by the Purhépecha from Michoacán showing the picture of a woman; a gourd which served as a container; a chess-board with mother-of-pearl inlays from Gujarat; a Turkish leather bottle" and a "figure made of fruits and seeds representing a deity, said to be from Mexico."[64] These items in particular demonstrate Duke Albrecht's preference for "natural specimens which retained their original form but which were assembled into artificial formations."[65] They also reflect the encyclopaedic ambitions of his collection: it was to be a miniature representation of the entire world—a microcosm. And since the 'entire world' had recently revealed itself to be much larger than previously thought—thanks in part to the invention of new instruments for deep-sea navigation—items from the Americas were of particular interest to collectors who could afford them.[66] In contrast to older types of courtly collections, the Munich Kunstkammer developed a style of arrangement that did not confine particular types of objects or materials to specific places within the collection, but dispersed them throughout in a way that allowed, for example, maps to mingle with sculptures, relics with telescopes, and ancient bows with sixteenth-century swords.

Although he did not live to see the completion of the Munich Kunstkammer, Flemish physician Samuel Quiccheberg was largely responsible for convincing Albrecht V to develop this collection of art and wonders, as well as for devising plans for how it should be assembled and used. These plans can be found in a 64-page text by Quiccheberg published in 1565, two years before his death. Quiccheberg's text, fully translated into English in 2013 by Bruce Robertson and Mark A. Meadow, is a how-to manual for setting up and developing a Kunst- and Wunderkammer. The full title of Quiccheberg's proposal, which doubles as an abstract, is as follows:

> *Inscriptiones or titles of the most ample Theater that houses exemplary objects and exceptional images of the entire world, so that one could rightly call it a: repository of artificial and marvelous things, and of every rare treasure, precious object, construction,*

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[63] Ibid., 82.
[64] Elke Bujok, "Ethnographica in early modern *Kunstkammern* and their perception," *Journal of the History of Collections* 20.1 (2009): 24.
[65] Seelig, "The Munich *Kunstkammer*," 81-2.
[66] Gerard l'E. Turner, "The Cabinet of Experimental Philosophy", in *Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe* (Oxford: Clarendon Press, 1985), 215; Yaya, "Wonders of America," 175.

and picture. It is recommended that these things be brought together here in the theater so that by their frequent viewing and handling one might quickly, easily, and confidently be able to acquire a unique knowledge and admirable understanding of things.[67]

Most striking, of course, is the conspicuous lack of the terms 'Kunstkammer' or 'Wunderkammer' in the title of Quiccheberg's work (hereafter referred to in abbreviated form as simply *Inscriptiones*). What he was proposing was a relatively new phenomenon and, as such, one of Quiccheberg's rhetorical tasks was to adapt the existing vernacular of collecting to the novel collection he envisioned.[68] His most frequently used label for the proposed collection was 'theater'—the etymology, usage, and cultural significance of which will be explored in detail in chapter two—a term commonly used by sixteenth-century authors to refer to "a writing devoted to the organization of human knowledge."[69] While Quiccheberg does not employ the term 'Kunst- and Wunderkammer' until the end of his treatise, his titular description of the proposed collection as 'a repository of artificial and marvelous things' hints at this sixteenth-century neologism. Although the exact coinage of 'Kunst- and Wunderkammer' is unknown, Quiccheberg's *Inscriptiones* contains one of its earliest known usages.[70]

Despite its German authorship, *Inscriptiones* was written in Latin, indicating that Quiccheberg imagined his audience to be comprised of educated readers. It was written and published while Quiccheberg was serving as an artistic advisor for Albrecht V, and includes praise-filled references to the Bavarian Duke throughout, suggesting that the text served as a tenure application or grant proposal in addition to being a primer for potential collectors. Quiccheberg's text provides copious practical instructions for how one might assemble an 'ample theater' or Kunst- and Wunderkammer. The text is divided into six sections: the first provides an overview

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[67] This is Bruce Robertson and Mark A. Meadow's translation of the title of Quiccheberg's text. It is alternatively translated by Koji Kuwakino as: "The inscriptions or titles of a vast theatre, containing the individual subjects and excellent images of the things of the universe, such that one may with reason also call this a repository of artificial and extraordinary things, of every rare treasure and precious furnishing, of buildings and pictures, that are examined and collected together here in this theatre, in order that through the repeated inspection and study of them, one may obtain in rapid, easy and certain fashion singular knowledge and a marvellous practical experience of all things."

[68] Meadow, "Introduction," in *The First Treatise on Museums: Samuel Quiccheberg's Inscriptiones, 1565,* eds. Mark Meadow and Bruce Robertson (Los Angeles: Getty Research Institute, 2013), 1.

[69] Giovanni Mazzaferro, "Review: The First Treatise on Museums: Samuel Quiccheberg's *Inscriptiones* 1565," Letteratura Artistica: Cross-cultural Studies in Art History Sources, published November 2, 2015, accessed March 3, 2017, http://letteraturaartistica.blogspot.ca/2015/11/quiccheberg.html.

[70] Eva Schulz, "Notes on the History of Collecting and of Museums in the Light of Selected Literature of the Sixteenth to the Eighteenth Century," *Journal of the History of Collections* 2.2 (1990): 208.

of the classification system Quiccheberg designs for the proposed Kunst- and Wunderkammer, in which he surveys the collectability of the universe, offering examples of the kinds of items one might display in the theater; the second describes how the proposed collection fits into the existing court apparatus; the third provides some brief recommendations and additional advice for the would-be collector; the fourth, called "Digressions and Clarifications," elaborates on various inscriptions of the theater; the fifth, "Exemplars," includes Quiccheberg's praise for established collections and their owners, as well as acknowledgements for those who have helped him to complete *Inscriptiones*; the sixth and final section contains biblical excerpts and dedicatory poems in praise of Quiccheberg's proposed collection.

As one of the only extant writings on Kunst- and Wunderkammern from the late sixteenth century, and as the earliest known work on how to assemble, classify, and display a collection of *artificialia* and *naturalia*, Quiccheberg's text provides a valuable example of how wonder chambers were understood during the late Renaissance period. Motivated in part by the author's familiarity with many of the most well-known European collections of the period, Quiccheberg's *Inscriptiones* develops a detailed classification system for the proposed collection and provides lengthy elaborations on the function and utility of a Wunderkammer. Unlike the catalogues and inventories that are typically used to inquire into the history of collections, Quiccheberg's *Inscriptiones* is a proposal for an *ideal* Wunderkammer and, as such, does not describe an existing collection.[71] Indeed, Paula Findlen deems Quiccheberg's Wunderkammer a "paper fantasy" since, based on historical evidence, it was never actually materialized in brick and mortar.[72] As David L. Martin explains, "Quiccheberg's *Inscriptiones* never acted as the blueprint for an actual cabinet; rather, it was more likely to have acted as a commentary on the cabinets: a written interpretation of the act of interpreting through material collection."[73] In other words, Quiccheberg's *Inscriptiones* never served as an actual installation plan for a single collection—not even the Munich Kunstkammer of his boss, Albrecht V. In fact, there is no extant evidence with which to

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[71] It is also worth pointing out that catalogues and inventories were composed according to different classificatory criteria and were used for different purposes than the actual collections to which they referred.

[72] Paula Findlen, "Building the House of Knowledge: The Structures of Thought in Late Renaissance Europe," in *Structure of Knowledge: Classifications of Science and Learning since the Renaissance*, ed. Tore Frangsmyr (Berkeley: University of California, 2001), 19.

[73] David L. Martin, *Curious Visions of Modernity,* 43.

gauge the influence of Quiccheberg's *Inscriptiones*; it seems likely that the text was neither widely disseminated, nor well known by word of mouth during its authors' lifetime.[74]

Although Quiccheberg's *Inscriptiones* was largely ignored by or unknown to his sixteenth-century contemporaries, it began to garner prestige once it was discovered by twentieth-century museologists. Its historiography follows much the same pattern as that of the Wunderkammer in general. Quiccheberg's ideal Wunderkammer is usually interpreted as an adolescent version of the more mature museum.[75] Lorenz Seelig regards Quiccheberg's *Inscriptiones* as "the first purely museological tract."[76] Robertson and Meadow reinforce this lineage in titling their English translation of Quiccheberg's work *The First Treatise on Museums* (curiously, they use this title despite critiquing the museological reading of Quiccheberg's text in their preface and introduction). Similarly, Kiersten F. Latham and John E. Simmons claim that Quiccheberg's guidelines for the organization of a Wunderkammer "classified objects into groups that correlate with modern museum divisions: material glorifying the founder and handcrafts from antiquity (historic objects), natural specimens (natural history materials), technical and cultural objects (applied arts and crafts), and paintings and sacred objects (fine art)."[77] However, the similarity between museum contents and that of the Wunderkammer obscures hefty distinctions with regard to the rationale that underpins Quiccheberg's ideal collection, as well as the way in which he envisioned it to be used. As Stephen Mullaney puts it, "The museum as an institution rises from the ruins of such collections…it organizes the wonder-cabinet by breaking it down."[78] Whereas today there are separately-housed modern museums of, for example, natural history, fine art, and technology, Quiccheberg envisioned these collections within a single space—one not necessarily open to the public—and for a different purpose. Furthermore, even though Quiccheberg's use of the term 'museum' to refer to specialized subcollections contained in the theater seems to suggest an historical continuity, his specific categories and his understanding of the purpose of

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[74] Meadow, "Introduction," 36; Schulz, "Notes," 208.
[75] Chunglin Kwa, *Styles of Knowing: A New History of Science from Ancient Times to the Present*, trans. David McKay (Pittsburgh: University of Pittsburgh, 2011), 167.
[76] Seelig, "The Munich *Kunstkammer*," 86.
[77] Kiersten F. Latham and John E. Simmons, *Foundations of Museum Studies: Evolving Systems of Knowledge* (Santa Barbara: Libraries Unlimited, 2014), 29.
[78] Mullaney, *Strange Things,* 41.

classification expose significant discontinuities—explored in chapter three—which have been largely elided in museological treatments of *Inscriptiones*.

Only recently have the specificities of the collection that Quiccheberg proposed begun to be reinterpreted in ways that challenge the museological tradition. Koji Kuwakino, in the first analysis of *Inscriptiones* in its entirety, argues that Quiccheberg's 'museum-theater' was one that operated through particular epistemic practices of the sixteenth century, such as the art of memory and encyclopaedism, and in this regard has very little in common with what modern scholars would now call 'museums'.[79] Stephanie Jane Bowry makes a similar argument, insisting that 'museum' is a misnomer for the type of collection that Quiccheberg envisioned: his "cabinet was the material expression of human knowledge in all its variety, a collection of ways of seeing as much as objects to see."[80] Meadow also argues that Quiccheberg's reputation as a museum expert is misleading in that it deemphasizes his text's practical and technical nature, as well as the fact that his proposed collection was innovative precisely because of the interactive demands it placed on users.[81]

Just as Quiccheberg's ideal Kunst- and Wunderkammer was far from a museum, *Inscriptiones* is not a "theoretical disquisition on an established cultural institution."[82] Quiccheberg says as much when he mentions his plans to eventually write a more scholarly work on the philosophy of collecting (unfortunately, he died before he could achieve this goal).[83] Although *Inscriptiones* is no more a theoretical discourse on media than it is a museological tract, I argue that it offers an important source for thinking about the conditions of mediality in the Renaissance period and, furthermore, that its practical bent makes it especially useful for trying to understand the methods of classification and strategies of display that have made the Wunderkammer appear so puzzling to modernist historians and so wonderful to new media scholars and practitioners.

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[79] Koji Kuwakino, "The Great Theatre of Creative Thought: The *Inscriptiones vel tituli theatri amplissimi …* (1565) by Samuel von Quiccheberg," *Journal of the History of Collections* 25.3 (2013): 316-18. Kuwakino makes a similar point about Quiccheberg's *Inscriptiones* as Eilean Hooper-Greenhill makes about the Kunst- and Wunderkammer in general: namely, that these collections were in fact systematically organized even if they do not look like 'systems' to modern eyes and, furthermore, that this inability to recognize pre-modern systematicity reflects a long-standing post-Enlightenment bias against Renaissance ideas and practices.
[80] Bowry, "Rethinking the Curiosity Cabinet," 86.
[81] Robertson, "Preface," ix.
[82] Meadow, "Introduction," 2.
[83] Samuel Quiccheberg, *The First Treatise on Museums: Samuel Quiccheberg's Inscriptiones, 1565,* eds. Mark A. Meadow and Bruce Robertson (Los Angeles: Getty Research Institute, 2013), 75-77.

I read *Inscriptiones* as a critique of the Wunderkammer's historiography in an effort to challenge its traditional characterization as a misguided method of classifying and representing knowledge, and to reflect on its relationship to contemporary digital media. I insert Quiccheberg as an interlocutor in the historical and contemporary literatures on the Wunderkammer in order to clarify his specific understanding of it and, in doing so, to point out historical discontinuities within this emergent media history. I take a deliberately generous approach to Quiccheberg—in part because the collections he was proposing have been habitually maligned and marginalized post mortem and are thus in need of a charitable and attentive remediator, but also because he occupied a privileged insider position in the European culture of collecting during the latter half of the sixteenth century. Quiccheberg's expertise on late Renaissance chambers of arts and wonders far surpasses my own.

CHAPTER TWO

Quiccheberg's Universal Theater: Structuring Knowledge

Media studies has long been a safe-haven for polymaths who refuse to obey disciplinary boundaries: Lewis Mumford, Marshall McLuhan, Harold Innis, Friedrich Kittler, and John Durham Peters are all good examples. These theorists set ambitious programs for media studies by claiming the entire library as its source. All disciplines are relevant to the study of media: not just history, literature, philosophy, politics, and theology, but also physics, archaeology, biology, economics, and geology, to name just a few. "To study media, you cannot just study media."[84] Quiccheberg, however, was an even more ambitious polymath. For him, knowledge of any kind was only attainable *in medias res*. The scholar quite literally needed to surround himself with things—ideally, all things, at least in "small compass."[85] Of course, one would need a well-stocked and systematically arranged library containing books written in multiple languages, with sections on theology, law, medicine, history, philosophy (dialectical and magical), mathematical (astrological, arithmetic, and geometric), literature, poetry (sacred and profane), music, grammar, and any other miscellaneous writings on other things, such as military operations or agriculture.[86] But this library forms only a small part of the Quicchebergian scholar's arsenal, as books make up only a miniscule portion of the things in the universe. Quiccheberg thus proposed a new kind of collection that would assemble in one place "all those topics…that universal nature embraces, that all books teach, that all of human life can offer" such that "no disciplines can be taught, no work of art examined, so state of life imagined, that does not have its foundations, equipment, means of support, or examples here in the theater."[87] Hence his bold claim that his proposed collection was in fact a "Universal Theater."[88]

As I alluded to in the previous chapter, Quiccheberg had to adapt the innovative form of collection he was proposing to existing scholarly writing conventions in order to be understood by

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[84] Peters, *Marvelous Clouds*, 29.
[85] Francis Bacon in Hooper-Greenhill, *Museums and the Shaping of Knowledge,* 78.
[86] Quiccheberg, *Inscriptiones*, 71.
[87] Quiccheberg, *Inscriptiones*, 91.
[88] Ibid., 71.

his intended audience of erudite Latin-reading princes, scholars, merchants, artists, and others. Throughout the text, Quiccheberg most frequently refers to his proposed collection as a 'theater'— a term that was commonly used in book titles of the period to refer to a work concerned with the organization of knowledge. According to Giovanni Mazzaferro, Quiccheberg's use of 'theater' is likely a reference to—and a subversive reappropriation of—the term as it was used in Giulio Delminio Camillo's *L'Idea del Theatro* (*The Idea of the Theater*), which was published fifteen years prior to *Inscriptiones* and was far more successful. Mazzaferro explains that although both authors were concerned with the organization of knowledge, Camillo "conceives knowledge in terms of 'memory'" while for Quiccheberg knowledge is dependent on sensory experience.[89] Similarly, Meadow argues that Quiccheberg uses 'theater' in a concrete (literally) sense to refer to "particular architectural forms that facilitate viewing"[90] which he contrasts with Camillo's metaphorical use of 'theater' to refer to philosophical and, more specifically, hermetic knowledge. Kate Robinson corroborates these interpretations, arguing that Camillo's theater was "fundamentally a structure of conceptual relationships rather than a building of wood or stone"; Camillo was creating a "symbolic system" based on astronomy, myth, and classical philosophy, which, "by reducing knowledge to its constituent parts" could "represent both the essence of material and the relationships between the essences that allowed the universe to maintain its being."[91] However, Quiccheberg's literal use of 'theater' should not be interpreted as evidence of his disinterest in the conceptual structure of knowledge. Rather, Camillo and Quiccheberg's most significant point of divergence was their different understandings of the structure of knowledge.

Paula Findlen explains, "In 16th and early 17th-century Europe, the idea of structuring knowledge was more than just a metaphor. It expressed a literal desire to give the world of ideas a concrete physical context, often based on idealized structures that, at first glance, seemed to have very little to do with the actual content of learning."[92] The close association between the physical structure of knowledge and its conceptual organization is hinted at in the shared etymology of 'theater' and 'theory', both of which derive from the Greek *thea* meaning 'a view' and are closely related to the Greek *theoria,* which refers to "an intellectual activity that is neither practical nor

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[89] Mazzaferro, "Review," Letteratura Artistica.
[90] Meadow, "Introduction," 2.
[91] Kate Robinson, "The Celestial Streams of Giulio Camillo," *History of Science* xliii (2005): 321-2.
[92] Paula Findlen, "Building the House of Knowledge," 7.

productive nor political" and translates literally to "witnessing a spectacle."[93] Indeed, the objective of Camillo's textual theater was to "turn scholars into spectators"[94] and approximately half of *L'idea del theatro* is "made up of textual descriptions of images, though there are no diagrams or pictures."[95] For Camillo, the structure of knowledge was a seven-level grid system (corresponding to the seven planets) that was accessed through visual and linguistic means, including cognitive techniques like the *ars memoriae.* His theater was a spectacle intended to encourage the theoretical contemplation of the cosmos. In contrast, Quiccheberg's universal theater—his theory or view of the universe—was far less based in cognitive practices and contemplation. His goal was to structure knowledge in a way that not only facilitated observation, but also physical interaction and experimentation. Quiccheberg conceived of knowledge primarily in terms of its practical application, most notably in statecraft (he provides a few specific suggestions for how his universal theater might be used by Duke Albrecht in the promotion of Bavarian state religion or as a way of establishing diplomatic relations with other courts).[96] Quiccheberg's subversive move—and what made his theater innovative in comparison to others of the period—was that he proposed to materialize the theater and in doing so restructure knowledge in a way that made its management and production inextricable from experience.

Knowledge and Experience

Quiccheberg's emphasis on practical knowledge and Camillo's classical conception of knowledge as strictly speculative reflects the contestations between (and within) scholastics and humanists over the nature of experience and its proper relation to knowledge, which emerged during the latter half of the fifteenth century and continued until the end of the seventeenth century (although neo-Aristotelian epistemology ultimately maintained its hegemonic status throughout this period through the work of various scholastic philosophers, most notably, Thomas Aquinas).[97] According

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[93] Andrea Wilson Nightingale, "On Wandering and Wondering: 'Theoria' in Greek Philosophy and Culture," *Arion: A Journal of Humanities and the Classics* 9.2 (2001): 23.
[94] Camillo in Findlen, *Possessing Nature,* 118.
[95] Robinson, "Celestial Streams," 323.
[96] Quiccheberg, *Inscriptiones,* 93 & 95.
[97] For an excellent analysis of the Renaissance transformation in neo-Aristotelian thought, see Erika Rummel, *The Humanist-Scholastic Debate in the Renaissance and the Reformation* (Harvard University Press, 1998).

to Aristotle, concepts of universal essences of *kinds* of things were extracted from sensory experiences of *individual instances* of things. Sensory experiences served as a kind of auxiliary to universal knowledge. Mistaking sensory experiences of particulars for essential truths in themselves was an epistemological error, but so too was failing to take sensory experience into account in the discovery of knowledge. Knowledge, in this Aristotelian view, consisted in the abstraction of linguistic concepts from the concatenation of sensory experiences of the material world. Yet, as Peter Dear points out, this epistemological framework seems to involve a sleight-of-hand by which universal truth is derived from singular experiences.[98] (I would add that this 'trick' also involves a denial of language and concepts as mediators, which are no less entangled in material existence than the products of technical skill or art in the production of knowledge.)

One of the most well-known articulations of the humanist critique of Aristotelian epistemology comes from Francis Bacon, who, unlike Aristotle, "had no epistemological difficulties in using artificial situations, such as experimental contrivances, in generating telling facts."[99] In *New Organon* (1620), Bacon challenges Aristotelian orthodoxy and argues that knowledge about the general behaviours of nature could be derived from singular experiences of particular things in order to generate knowledge, which he conceived in terms of its practical applications for improving the conditions of human life.[100] As Charles Taylor explains, this involved the reversal of Aristotelian epistemology insofar as "[w]hat was previously stigmatized as lower"—i.e., practical applications of knowledge—was "now exalted as the standard, and the previously higher"—i.e., universal concepts about the essences of things—"is convicted of presumption and vanity."[101] Although Bacon was wary of final causes and essential kinds, he nevertheless employed a sleight-of-hand-manoeuvre reminiscent of Aristotle's insofar as he, too, held that general knowledge—conceived as the product of experimentation with material phenomena—emerged from sensory experiences of particular things. This kind of practical knowledge could, in Bacon's view, be generated effectively with a collection of artifacts and

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[98] Peter Dear, "The Meanings of Experience," in *Cambridge History of Science, Vol. 3 Early Modern Science,* eds. Katharine Park and Lorraine Daston (Cambridge & New York: Cambridge University Press, 2008), 118.
[99] Ibid., 111.
[100] Francis Bacon, *The New Organon*, 1.8, ed. and trans. Lisa Jardine and Michael Silverthorne (Cambridge: Cambridge University Press, 2000), 52.
[101] Charles Taylor, *Sources of the Self: The Making of the Modern Identity* (Cambridge: Harvard University Press, 2001), 214.

specimens, arranged in a way that made them easily accessible for experimentation, and—contrary to Aristotelian epistemology—necessitated their decontextualization from their natural or original settings.

Furthermore, unlike traditional neo-Aristotelean scholars, Bacon and his contemporaries were also keenly interested in deviations from the usual functioning of nature—that is, they were interested in wonders. Wonders played a significant role in the epistemological debates of the sixteenth and seventeenth centuries. Nature was understood as divinely ordered, but it was neither uniform nor governed by a set of transhistorical and universal laws. Aberrant forms "constituted a distinct ontological category, the preternatural, suspended between the mundane and the miraculous" and were thus considered integral to revealing the secrets of divine creation.[102] For Bacon in particular, the empirical study of wonders was linked to the generation of practical knowledge. As Horst Bredekamp explains, "The aberrations of nature appear in this context as experiments which have failed, as 'errors.'"[103] These divine experiments-gone-awry could, however, be retried and perfected by humans. Through artistic interventions, nature—whose metamorphic potential was divinely subject to myriad, unpredictable permutations—could be controlled and guided towards its practical application. As Lorraine Daston puts it, "Nature had, as it were, already begun the work of art."[104] Humans were not only able but morally obligated to complete it. Thus, by breaching the boundary between nature and artifice, wonders revealed humans and God as analogous creators.

Although Bacon is usually cited as the progenitor of this philosophical position, Quiccheberg's *Inscriptiones* presents a similar view in his earlier call for the establishment of collections of wonders of art and nature which, "through their frequent viewing and handling," would enable one to "acquire unbelievable practical knowledge regarding everything and a manifestly divine wisdom."[105] To these practical-experimental ends, Quiccheberg proposed an alternative structure of knowledge, as well as a vast set of material supports through which that structure could be revealed. Quiccheberg explains that 'theater' is "employed here [in

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[102] Daston and Park, *Wonders,* 14.
[103] Bredekamp, *Lure of Antiquity,* 67.
[104] Lorraine Daston, "Nature by Design," in *Picturing Science, Producing Art,* eds. Caroline A. Jones and Peter Galison (New York & London: Routledge, Taylor & Francis Group, 1998), 239.
[105] Quiccheberg, *Inscriptiones,* 91.

Inscriptiones] for a grand building that is in the form of an arc, or oval, or in the shape of an ambulatory…and that is constructed with high stories on four sides."[106] Quiccheberg's preference for a circular building in which to display "exemplary objects and exceptional images of the entire world" may be attributed to the proliferation of encyclopaedic projects during the Renaissance period. As Findlen explains, "Quiccheberg imagined a physical space whose shape was important to the function of his encyclopaedia."[107] According to Ann Blair, the term 'encyclopaedia', as it was used by Renaissance authors starting in the fifteenth century, emerged "from a corruption of the Greek phrase 'enkuklios paideia' which meant general culture or common education."[108] Humanist scholars misinterpreted the original Greek as 'the circle of learning' and thus employed the term 'encyclopaedia' to refer to a work concerned with the classification of the disciplines and their relations to one another.[109] Quiccheberg recommended a rounded or oval structure as the most effective way to facilitate the encyclopaedic function of the proposed collection. By arranging material objects within the 'circle of learning', one could determine the interrelationships between individual elements of the universe based on their physical position in the theater. Taken together, these myriad relations constituted a view of the world.

Drawing on Heidegger, Hooper-Greenhill argues that by assembling a model of the universe in a single representational space, the Wunderkammer produced an early rendering of the world as a view—that is, it constituted the universe as an "epistemic thing"[110] that could be both known and influenced by human beings.[111] The notion of the 'worldview' is usually understood as a distinctly modern phenomenon since it depends upon an understanding of the human subject as uniquely capable of knowing and controlling the world—a notion that is typically understood as at odds with a premodern enchanted cosmos. Although the Wunderkammer represented "a world that was expanded from medieval epistemic structures and thus was premodern,"[112] it was simultaneously a worldview insofar as it existed in relation to a subject's—or, more specifically,

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[106] Ibid., 78.
[107] Findlen, "Building the House of Knowledge," 19.
[108] Ann Blair, "Revisiting Renaissance Encyclopaedism," in *Encyclopaedism from Antiquity to the Renaissance,* eds. Jason König and Greg Woolf (New York: Cambridge University Press, 2013), 380.
[109] See note 153 above.
[110] Eva Horn, "Editor's Introduction: 'There Are No Media,'" *Grey Room* 29 (2008): 10.
[111] Hooper-Greenhill, *Museums and the Shaping of Knowledge,* 84.
[112] See note 109 above.

the collector's—gaze. In this regard, the Wunderkammer constituted a type of worldview specific to the Renaissance: a microcosm.

Microcosm-Macrocosm

Michel Foucault argues that the notion of the microcosm had two main functions in Renaissance epistemology. The microcosm functioned, first, as a guarantee that everything it contained would find its correspondence in a greater scale of existence—that is, the macrocosm—and second, it served to guarantee the limits between these scales of existence: despite the seemingly infinite variety of creation on the microcosmic level, the macrocosm confirmed that there was an end to the seemingly ceaseless series of similitudes, that the chasm between these levels was not an endless void.[113] The emphasis during this period on discovering hidden relations between things, both in regards to the proliferation of encyclopaedic projects and the elevation of artistic activities, emerged from the microcosm-macrocosm as the overarching analogy that contained all other correspondences. These relations were articulated within what Foucault describes as a "web of resemblance"[114] which constituted the dominant conditions of knowledge production during the sixteenth- and seventeenth centuries in Europe. All objects—plants, animals, stars, rocks, utensils—were characterized solely by their form since they were ultimately made of the same basic elements of matter (earth, air, fire, and water). As such, "an object [was] thus characterized by form alone" and in order to gain knowledge about a particular thing, "it was necessary to detect the visible signs which nature had placed on their surfaces precisely to permit man to comprehend their relationships."[115] As a microcosmic model of the universe, the Wunderkammer enabled the meticulous study of these relationships.

Quiccheberg explains that the objects collected for his theater will "exhibit a more obvious ordering according to the forms of things" since "we are not dividing up for philosophers, precisely in line with nature itself, all natural objects; rather, we are sorting out for princes, into certain

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[113] Foucault, *The Order of Things: An Archaeology of the Human Sciences* (New York & London: Routledge Classics, 2002), 35.
[114] Ibid., 20.
[115] Francois Jacob, *The Logic of Life: A History of Heredity,* trans. Betty E. Spillman (New York: Pantheon Books, 1973)*,* 20-21.

uncomplicated orderings, objects that are mostly pleasant to observe."[116] Through these 'uncomplicated orderings' Quiccheberg sought to study and reveal the resemblances between particular things in his universal theater by bringing together a variety of forms that would not be comparable in nature. The main advantage of his theater was that it gave the user the ability to arrange and rearrange objects in multiple ways so as to discern ever more formal resemblances between them. In this respect, Quiccheberg's universal theater is a rich example of the Renaissance period's increased range of encyclopaedic projects devised for the organization and management of information. However, this was 'in-formation' in the sense of matter that had been formed by the creative power of God or human skill. Each form participated in an unknown but finite number of relations which spanned the distance between microcosm and macrocosm and could in principle be determined by interpreting their surface signatures. In this regard, for Quiccheberg everything was always already 'media' insofar as each individual form was a middling substance that intervened between different orders of creation. However, by arranging (and re-arranging) objects in the Wunderkammer, their medial function could be discerned more effectively. In this regard, the goal of Quiccheberg's ideal Wunderkammer was to organize and display objects in a way that maximized their inherent medial function. This was an extremely difficult task, however, since things could relate to one another in myriad ways and in multiple registers. Thus, in designing his ideal Wunderkammer, the epistemic problem that Quiccheberg was trying to solve hinged on the following question: What manner of arrangement maximally visualizes the hidden relations between each element in the circle of learning? The next chapter analyzes Quiccheberg's classes and inscriptions in order to better understand how his classification system facilitated the Wunderkammer's encyclopaedic function. In doing so, I explore the apparent contradiction in achieving universality through the display of heterogeneous particulars.

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[116] Quiccheberg, *Inscriptiones,* 78.

CHAPTER THREE

Categories and Classification in Quiccheberg's Universal Theater

Almost every piece of writing about the Wunderkammer includes a sample list of the objects it contained. Typically, these lists juxtapose the most mythical, fraudulent, and peculiar of examples alongside more mundane objects. Maria Zytaruk's provides the following list of specimens and artifacts typical of a Wunderkammer: "alligator's skins, chameleons, insects set in amber, corals, shells, medals, intaglios, South American feather word, and wampum belts; representations of mythical creatures (the unicorn, the basilisk)."[117] Another list by Lorraine Daston describes the collection of Boniface Borilly as "dominated by Roman medals" but also containing "'a head of a rat from the Indies,' 'three well-polished coconuts, garnished with ivory, serving as flasks,' and a celebrated 'cyclops.'"[118] In a different text, Daston and Katharine Park describe the 17th century cabinet of King Gustavus Adolphus of Sweden as "richly inlaid with medallions of Limoges enamel, beaten silver, marble, agate, lapis lazuli, and intarsia panels of multicolored woods, and crowned with a mound of crystals, corals, and shells surrounding a goblet fashioned from a Seychelles nut chased in gold and ornamented with the figures of Neptune and Thetis," while its contents included "an anamorphic painting, an Italian spinet that played three tunes by an automatic mechanism, a pitcher made out of a nautilus shell worked with gilded silver, mathematical instruments, and a mummified monkey's claw."[119] Elsewhere, Joy Kenseth provides a list of objects typical of sixteenth and seventeenth century Wunderkammern: "a nautilus shell or a 'unicorn's horn,' as well as scientific apparatus, examples of exotic animals and flora from the New World, and graphic, pictorial, sculptural, and especially *trompe-l'oeil* representations of all kinds of *meraviglie.*"[120] According to Paul Grinke, "everyone wanted an Egyptian mummy, a Mexican idol and a Greenland kayak, the 'blue chips' of the *curieux*, but such things were rare, and most collectors had to settle for a piece of bitumenised criminal, a late Roman inscription or

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[117] Maria Zytaruk, "Cabinets of Curiosities and the Organization of Knowledge," *University of Toronto Quarterly* 80:1 (2011): 2.
[118] Daston, "Nature by Design," 239.
[119] Daston and Park, *Wonders,* 255.
[120] Kenseth, *Age of the Marvelous,* 10.

an Egyptian scarab."[121] Yet another enumeration of the Wunderkammer's apparent inability to discern fact from fetish comes from Paula Findlen: "The alleged remains of legendary creatures— giants, unicorns, satyrs, basilisks—took their place next to real but puzzling phenomena such as fossils, loadstones, and zoophytes."[122]

As the above examples suggest, these lists of the Wunderkammer's contents highlight its heterogeneity, portraying it as an anti-system that deliberately defies any underlying organizational coherence. Describing the Wunderkammer's heterogeneous contents, Stephen Mullaney writes,

> These are things on holiday, randomly juxtaposed and displaced from any proper context…Taken together, they compose a heteroclite order without hierarchy or degree, an order in which kings mingle with clowns, or at least the props of their respective stations do; in which the outworn relics of Folly and the inconsequential charms of Alchemy (the unicorn's tail: neither its most nor even its most distinctive feature) hold court with icons of the crown.[123]

The sample lists of Wunderkammern contents are composed in a way that semantically and syntactically reinforces the idea that these collections are curious precisely because they are nonhierarchically ordered, which is to say, disordered. These deliberately weird lists recall Bruce Robertson's aforementioned criticism of contemporary curatorial and art practices that characterize the Wunderkammer as an unintelligible hoard.[124]

In their rapid-fire rattling off of apparently unrelated things, the above lists of Wunderkammern contents are curiously similar to the ones composed by a wide variety of contemporary theorists interested in challenging the grand narrative of Western modernity as a process of human enlightenment through the domination of nature. For example, Ian Bogost writes of "[t]he unicorn and the combine harvester, the color red and methyl alcohol, quarks and corrugated iron, Amelia Earhart and dyspepsia" in a paratactic attempt to convey the nonhierarchical principles of 'flat ontology', the metaphysical idea that all that all objects— whether imagined or real—have the same metaphysical status as real ones such that certain types of 'being' cannot be considered more primary or important than others.[125] Elsewhere, Jane Bennett

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[121] Grinke, *From Wunderkammer to Museum,* 15.
[122] Findlen, *Possessing Nature,* 3.
[123] Mullaney, "Strange Things," 42.
[124] Robertson, "Preface," viii.
[125] Ian Bogost, *Alien Phenomenology, or What It's Like to Be a Thing* (Minneapolis: University of Minnesota Press, 2012), 11.

takes the following list of items as inspiration for her political philosophy of vital materiality: "one large men's black plastic work glove", "one dense mat of oak pollen", "one unblemished dead rat", "one white plastic bottle cap", and "one smooth stick of wood".[126] In the same book, Bennett analyzes the electrical grid as a complex assemblage of human and nonhuman actants, describing it as "a volatile mix of coal, sweat, electromagnetic fields, computer programs, electron streams, profit motives, heat, lifestyles, nuclear fuel, plastic, fantasies of mastery, static, legislation, water, economic theory, wire, and wood."[127] William Connolly lists "[p]henomenologists, Buddhist monks, corporate advertisers, cultural anthropologists, neuroscientists, TV dramatists, Catholic Priests, filmmakers, and evangelical preachers" as examples of people attuned to the preliminary nature of experience and perception.[128] Each of these lists juxtaposes humans with nonhumans or nature with culture through the use of metonymy and synecdoche. The intended effect of such lists as they are employed in contemporary critical theory is to blur conventional philosophical categories through the syntactic gathering of apparently disconnected things.[129]

The reigning prince of networks,[130] Bruno Latour, might also be crowned the king of lists. In addition to being cited as a key influence in the list-laden works mentioned above, Latour himself is a serial list-maker:

> "Elections, mass demonstrations, books, miracles, viscera laid open on the altar, viscera laid out on the operating tables, figures, diagrams and plans, cries, monsters, exhibitions at the pillory."[131]

> "mugs, jugs, rocks, swans, cats, mats."[132]

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[126] Bennett, *Vibrant Matter,* 4.

[127] Ibid., 25.

[128] William Connolly, "Materialities of Experience," in *New Materialisms: Ontology, Agency, and Politics,* eds. Diana Coole and Samantha Frost (Durham & London: Duke University Press, 2010), 183.

[129] In this regard, these lists parallel Foucault's reading of Borge's false taxonomy of animals insofar as they juxtapose heterogeneous phenomena to highlight the impossibility of their propinquity for an ontology that relies on a rigid boundary between nature and culture.

[130] This phrase is a reference to Graham Harman's book on Latour, titled *Prince of Networks: Bruno Latour and Metaphysics* (Melbourne: re.press, 2009).

[131] Bruno Latour, *The Pasteurization of France,* trans. Alan Sheridan and John Law (Cambridge: Harvard University Press, 1993), 196.

[132] Latour, "Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern," *Critical Inquiry* 30 (2004): 237.

"a vaccine, an incandescent lamp, an equation, a pollution standard, a building, a blood screening procedure."[133]

"the Pope, French bishops, Monsanto, the Fallopian tubes, and Texas fundamentalists."[134]

Latour and his disciples deploy these deliberately heterogeneous lists of particulars as a strategy for critiquing what they see as the dominant way of 'being modern.' Modernity, says Latour, rests on the ontological separation between culture and nature. The trick to being modern is to keep the work of multiplying heterogeneous assemblages of natural and cultural elements (a process Latour calls translation or mediation) completely separate from the work of extracting them into discrete natural or cultural products (which Latour calls 'purification').[135] Retrospectively, the Wunderkammer violates the modern constitution by putting the work of mediation front and center: it not only places nature and culture on par with one another; it also explicitly celebrates hybrid creations, like the coconut flasks and gilded nautilus shells mentioned above. Weird lists of Wunderkammern contents thus seem to resemble Latourian litanies not simply due to their syntax, but also because both recognize the existence of nonhuman agencies and, in doing so, collapse the "artificial taxonomy splitting the world into 'facts' on one side and 'values' on the other: (1) rigid, inert objects of nature acting with clockwork precision, and (2) free and arbitrary human cultural projections ungrounded in external reality."[136]

In the Wunderkammer as in flat ontology, everything is equally real. Is it any wonder, then, that those who have figured the Wunderkammer as a premodern and therefore irrational method of classifying and representing the world have pointed to its obsession with fabulously displayed nature-culture hybrids as proof of its "pointless variety and studied uselessness"?[137] And, as such, is it all that surprising that theorists critical of modern epistemological frameworks are using "the cabinet of curiosities as a figure for an alternative logic of qualitative inquiry"?[138] The same appearance of disorder that once served as evidence of the Wunderkammer's resolute failure as a classification system is precisely that which makes it epistemologically productive to a new

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[133] Latour, "Turning Around Politics. A Note on Gerard de Vries' Paper," *Social Studies of Science* 37.5 (2007): 103.
[134] Latour, *We Have Never Been Modern,* trans. Catherine Porter (Cambridge: Harvard University Press, 1993)*,* 2.
[135] Ibid., 10-11.
[136] Graham Harman, *Bruno Latour: Reassembling the Political* (London: Pluto Press, 2014), 18.
[137] Daston and Park, *Wonders,* 277.
[138] MacLure, "The Wonder of Data," 229.

generation of researchers, especially those who seek to reassemble the heterogeneous networks of nature-culture hybrids through the deployment of a flat ontology.

Flatness, however, is relative. 'Flat ontology'—the metaphysical principle that everything is equally real—best describes an analytic stance, not a lived reality. What looks like a flat ontology from one point of view often appears from another to be rather like the border between Canada and the United States, which on a representational map appears as a straight line, but in close proximity is noticeably rugged, lumpy, and undefined in some places. As Peters points out, a potentially harmful effect of these category-confounding lists is that by portraying heterogeneous things as if they all exist on horizontal plane, "the sometimes brutally hierarchical and unequal character of things disappears from view."[139]

In the Wunderkammer as in flat ontology, everything is equally real; but not everything is equally represented. What looks to us like a wonderful display of heterogeneity or even ontological pluralism was viewed (literally) as a microcosmic representation of the entire cosmos for Renaissance collectors like Quiccheberg. In this chapter, I take a closer look at Quiccheberg's classes and inscriptions in order to demonstrate that his ideal Wunderkammer was far from disordered; it was designed according to a systematic conception of knowledge in which heterogeneity served a specific epistemic function. Based on my analysis of Quiccheberg's classification system for an ideal Wunderkammer, I argue that what appears to modern eyes as a heterogeneous display of irreducible difference was for Quiccheberg a universal view—"a stand-in for the globe in its entirety."[140]

The Classes

The first section of Quiccheberg's *Inscriptiones* provides an overview of a classification system for potential Wunderkammern which serves simultaneously as a method of display. The system is

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[139] Peters, *Marvelous Clouds,* 30.

[140] Jodocus Castner in Quiccheberg, *Inscriptiones,* 106. This phrase is excerpted from a dedicatory poem written by Castner, a Jesuit scholar, in praise of Quiccheberg's proposal. The full poem reads as follows: "Once one is captured by the immeasurable charm of art, / What need is there to set full sail upon the shipwrecking surface of the sea, / In order to survey whatever marvels this vast world contains? / What is the delight in eagerly traversing so many lands? / A single theater than displays everything in its classes / Can serve as a stand-in for the globe in its entirety: an accomplishment."

divided into five classes, each of which contains ten or eleven inscriptions or sub-categories, for a total of fifty-three individual inscriptions. Many inscriptions are marked by the astronomical sign of Mercury which indicates that Quiccheberg will elaborate on these particular inscriptions in a subsequent section titled "Digressions and Clarifications" so as to avoid going into too much detail in the initial overview of his system.[141] Quiccheberg uses the term 'inscriptions' in order to suggest that collectors might, at their discretion, include small placards throughout their Wunderkammern to indicate the locations of specific 'museums' or sub-collections.[142] Quiccheberg's classes and inscriptions cover the collectability of the entire universe such that any Wunderkammern established on the basis of this system would enable one to gain practical knowledge about any topic. Quiccheberg explains,

> it has been necessary here to describe everything in full so that at least in the general enumeration there is nothing left to be desired. And hence these matters are placed at the center of our discussion; not because I think that the lifetime of any man, even the most wealthy and diligent, is sufficient for collecting everything that could be broadly gathered into these classes but because I wanted, with this most complete and universal enumeration, to add these things to the considerations of men just as Cicero did with regard to the complete orator. Thus, on the basis of these classes, they might measure the magnitude of their knowledge of all things, and they might be stimulated to imagine and investigate other matters in turn.[143]

The reference to Cicero suggests that Quiccheberg envisioned the ideal Wunderkammer as an improved version of classical knowledge structures.[144] Cicero's 'complete orator' had to possess an encyclopaedic knowledge of the universe so as to be able to deliver a speech or engage in a debate about any topic. This encyclopaedic knowledge also enabled the orator to develop and organize his or her arguments according to the disciplines of knowledge most appropriate to the subject matter. As Kuwakino argues, Quiccheberg understood the Wunderkammer as "the perfect instrument to attain this objective [because] by studying its collections the visitor could acquire

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[141] Some scholars have attributed esoteric connotations to the use of this symbol in *Inscriptiones* (see Balsiger's dissertation cited in a previous note), but Meadow insists that Quiccheberg's use of the symbol of Mercury is strictly a practical signpost meant to guide readers and attributes no symbolic or esoteric meaning to it. Given the lack of any discussion of esoteric knowledge throughout the text, as well as Quiccheberg's critique of Camillo's emphasis on hermeticism discussed above, I agree with Meadow on this point.

[142] Quiccheberg, *Inscriptiones,* 77.

[143] Ibid., 74.

[144] Ann Blair, "Revisiting Renaissance Encyclopaedism," 380.

knowledge superior to that possessed by the Ciceronian orator in every field."[145] What made the Wunderkammer superior, in Quiccheberg's view, was its accumulation of material artifacts and their display in a single, physical space (or series of interconnected spaces), since first-hand experience of particular things of the universe was—in stark contrast to classical authors like Cicero and Aristotle—a necessary condition of genuine knowledge.

The first of the five classes is concerned with the founder of the theater, his genealogy, and his relationship to God. The inscriptions within this first class begin with artfully crafted depictions of Christian history and are given primacy so that "the gods favor the entrance to the theater or collection."[146] These are followed immediately by family trees; portraits of the founder and his family and predecessors; maps and other geographical representations of the founder's territory; depictions of important cities, both European and non-European; representations of military history, such as famous battles or wars; images of festivals, games, or other events that celebrate the nation and its rulers; paintings of "memorable" or "rarely depicted" animals, especially those that are indigenous to the founder's region; architectural models; and, finally, small models of machines that might inspire future innovation.

The second class is dedicated to objects that have been produced through some sort of technical skill or craft. It includes ancient and modern statues of important figures (e.g. gods and kings) and animals made from a variety of materials, such as wood, bronze, stone, and clay; artisanal works made from metals (e.g. clocks, swords); artisanal works made from other materials (e.g. wood, glass, fabrics); crafted objects of different geographical or historical origins, which might contribute to an understanding of non-European or ancient craftsmanship; non-European and ancient containers made of various materials; instruments of measurement; coins made of bronze, silver, or gold from both European and non-European countries, and produced in both contemporary and ancient periods; portraits resembling coins; objects made from the same material as coins, but with allegorical or symbolic content; tiny and decorative ornaments; and copper engravings of images relevant to the theater.

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[145] Kuwakino, "The Great Theatre," 308. A similar point is made about Cicero's influence on Quiccheberg's classification system for an ideal Wunderkammer in: Mark A. Meadows, "Merchants and Marvels: Hans Jacob Fugger and the Origins of the Wunderkammer" in *Merchants and Marvels: Commerce, Science, and Art in Early Modern Europe* (New York & London: Routledge, 2002), 195.

[146] Quiccheberg, *Inscriptiones,* 78.

The third class encompasses objects pertaining to nature and natural history. The inscriptions begin with 'marvelous and very rare' animals and insects (whole specimens and fragments) that have been preserved so as not to decay, followed immediately by casts of animals made from various materials. Other categories include animal parts, such as skin, teeth, feathers, organs, and bones; full or partial skeletons of animals, including humans; plant specimens; raw metals; gemstones and minerals; pigments for colouring or painting various materials; and natural pigments and materials derived from the earth.

The fourth class contains instruments, tools, and equipment used in the liberal arts and sciences, as well as by merchants and artisans. The items found here include musical instruments; mathematical instruments; writing and painting equipment; transportation instruments; the tools of sculptors, goldsmiths, woodworkers, and other craftsmen; surgical and cosmetic tools; hunting equipment; recreational equipment for exercise or games; foreign weapons; foreign clothing and equipment for making clothing; and clothing of significance to the founder of the theater, such as military or priestly garments.

The fifth and final class, much like the first, primarily contains two-dimensional images and representations such as paintings, engravings, catalogues, genealogies, portraits, and tapestries. Unlike the first class, though, the fifth is less concerned with linking the theater's founder to the divine. Instead, here is where Quiccheberg allowed for the founder to express his personal interests and (political) agenda more freely, through the inclusion of representational objects, such as portraits of the founder's associates or mentors, or aphorisms selected by the founder, which were to be inscribed on various materials and displayed on the walls of the theater. The last sub-category in this class is dedicated to containers of various kinds, such as "caskets, chests, letter cases, cabinets, woven baskets, platforms that have steps, trays and chests."[147] Although containers can be categorized elsewhere in the collection as methods of storage and display, in this class the containers themselves are objects worthy of study and display. This final class is explicitly recursive insofar as it contains items produced by the objects in the other classes. In this regard, it might be described as a 'meta-class' insofar as it represents the collection as a whole, while also referring to a specific class of objects (i.e. representations of knowledge).

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[147] Quiccheberg, *Inscriptiones,* 70.

At first glance, the classes and inscriptions appear hierarchically ordered: they begin with God, the ruler and his kingdom, followed by artistic or creative products, natural objects, then the tools and instruments used to study, control, and manipulate nature, and culminate in representations of knowledge effected by those tools. Read sequentially, the arrangement of the classes in this order implies a causal chain whereby God, making humankind in his image, imbues human beings with the ability to manipulate and control the natural world, and thus enables them to acquire divine wisdom. However, the causal chain implied by the particular order of the classes as they are presented in Quiccheberg's text is largely an effect of the linearity of writing.[148] According to Meadow, the five classes in fact operate as "a linked cycle."[149] Any of the classes may be placed at the start of the cycle, resulting in an alternative configuration that reveals a different set of links among the classes and thus produces a different causal chain. The classes are thus reflexive in that each one serves simultaneously as cause and effect of the others.

Meadow demonstrates the reflexivity of Quiccheberg's classes through a thought experiment in which he places each class at the beginning of the cycle in order to discern the causal chain of different configurations. For example, if the third class (*naturalia*) is placed in the governing position, then it follows that the world of nature is the foundation from which instrumentation (class 4) produces artifacts (class 2), which serve the higher purpose of contributing to knowledge through its representation in various media (class 5) which can be made useful by the founder through his relation to God (class 1). Alternatively, if representations of knowledge are placed in the governing position, the founder of the collection "becomes the generator of wisdom through his judicious use of the appropriate instruments" and the "realms of *naturalia* and *artificialia* serve as the bases from which the [founder] derives his knowledge."[150] As these examples illustrate, Quiccheberg's classes are deliberately reflexive so as to enable various possible physical configurations through which the interrelationships between them can be discerned. Furthermore, because the ideal structure in which these classes would facilitate the organization of a collection is a circular theater, multiple of these configurations could in theory

[148] Robertson, "Preface," x.
[149] See note 145 above.
[150] Meadow, "Introduction," 25.

be visible simultaneously. The classes, in other words, do not restrict the collection to a single, linear order. Rather, their reflexivity enables multiple dynamic orders to operate simultaneously. Given the range of possible orders in which the five classes might be arranged, it is tempting to describe Quiccheberg's system as a heterarchy. Carole L. Crumley defines 'heterarchy' as "the relation of elements to one another when they are unranked or when they possess the potential for being ranked in a number of different ways."[151] The term 'heterarchy' was coined by Warren S. McCulloch in a 1945 article submitted to the *Bulletin of Mathematical Biophysics* in which he explores how neurological networks are subject to multiple competing and nonlinear interpretive regimes and are thus far richer than purely hierarchical systems. McCulloch contrasts heterarchy with hierarchy, using the "sacerdotal structure of the church" as an example of the latter. In hierarchy "the order is such that there is some end preferred to all others" and therefore "to assert a hierarchy of values is to assert that values are magnitudes of some one kind."[152] Although hierarchy and heterarchy are often positioned as opposites, they are in fact complementary structures: a heterarchy may contain multiple hierarchies and those hierarchies may be ranked in multiple ways.[153] Using a network of six neurons as an example, McCulloch explains that in heterarchy

> circularities in preference instead of indicating inconsistencies, actually demonstrate consistency of a higher order than had been dreamed of in our philosophy. An organism possessed of this nervous system—six neurons—is sufficiently endowed to be unpredictable from any theory founded on a scale of values. It has a heterarchy of values, and is thus internectively too rich to submit to a *summum bonum*.[154]

The notion of heterarchy is useful for describing reflexive systems that resist linear logics and therefore do not submit to a single evaluative framework. In this respect, all views of a heterarchical system are partial: a complete view of the system is impossible. This feature of heterarchy makes it especially useful in devising strategies for challenging hegemonic structures,

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[151] Carole L. Crumley, "Heterarchy and the Analysis of Complex Societies," *Archaeological Papers of the American Anthropological Association* 6.1 (1995): 3.

[152] Warren S. McCulloch, "A Heterarchy of Values Determined by the Topology of Nervous Nets," *Bulletin of Mathematical Biophysics* 7 (1945): 3.

[153] Eberhard von Goldammer, Joachim Paul, and Joe Newbury, "Heterarchy – Hierarchy: Two Complementary Categories of Description," available at: http://www.vordenker.de/heterarchy/b_heterarchie.pdf (published 2003, accessed May 28, 2017).

[154] See note 150 above.

especially traditional hierarchies, from within the system itself.[155] Zizi Papacharissi, for example, applies the notion of heterarchy to digital platforms. She argues that as algorithms increasingly limit agency and impose particular pathways of attention in online environments, it becomes critically important for social actors to seek out 'leverage points'—i.e. moments in which these pathways and structures can be transformed—in the system in order to reassert their agency. These leverage points are characterized by "social heterarchy" in that they "render[] all actors equal, for the time being"[156] and potentially enable actors to reassemble into structures with more diverse and autonomous pathways of attention. Heterarchy, in contemporary thought, is thus linked to social transformation and political resistance.

Quiccheberg's system resembles a heterarchy in terms of its reflexive classes, which can be ranked in multiple ways, as well as in regards to its inherent partiality. As discussed in chapter five, the Wunderkammer is a microcosm, a view of the world in miniature, but this view is necessarily constituted from the position of the gazing subject. If considered as a heterarchical system, the position of the gazing subject might translate to the 'leverage point' from which new pathways and structures within the Wunderkammer can be revealed. However, in this case, leverage points do not have a subversive function. Rather, by identifying new pathways between and amongst the classes, the human viewer in the Wunderkammer reasserts the power of God as divine creator of this vast network of resemblances that constitutes the microcosm-macrocosm.

Quiccheberg's system seems heterarchical in that it does not submit to a single evaluative framework or allow a complete view of the whole system; however, in contrast to McCulloch's neural network, this is precisely *because* it submits to a *summum bonum*. Although a totalizing view was not humanly possible, it was nevertheless the case that in the network of hidden relations made visible by the Wunderkammer, one view is more 'complete' than others—that is, the view of the Creator, God. Thus, in principle, Quiccheberg's classes did in fact submit to a *summum bonum;* however, this was a 'highest good' conceived as beyond complete human comprehension, yet not entirely out of grasp. There are clues—what Foucault calls 'signatures'—hidden in the

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[155] Crumley, "Heterarchy," 1; Karen Stephenson, "Neither Hierarchy nor Network: An Argument for Heterarchy," *People & Strategy* 32.1 (2009): 7.

[156] Jessica Clark, Nick Couldry, Abigail de Kosnik, Tarleton Gillespie, Henry Jenkins, Christopher Kelty, Zizi Papacharissi, Alison Powell, Jose van Dijck, "Participations: Dialogues on the Participatory Promise of Contemporary Culture and Politics, Part 5: Platforms," *International Journal of Communication* 8 (2014), Forum 1446-1473: 1450.

forms of particular things which enable human beings to decipher the complex system of correspondences that constitute the universe.[157] But each individual thing has multiple signatures embedded into its form. Indeed, the content of a particular surface signature is yet another resemblance to be deciphered within the web of overlapping correspondences.[158] As such, the system that organized a universal collection could not be limited to a single interpretive register or evaluative framework, since doing so would ossify one particular set of relations, while obfuscating others. It thus had to allow for heterogeneity—of material objects, their values, and the interpretive registers in which these values could be ascertained—not in order to transform, resist, or subvert a totalizing view but precisely because heterogeneity simultaneously affirmed and delimited that totalization.

Whether Quiccheberg's system is distinct from a heterarchy or a particular species of heterarchy not accounted for in McCulloch's definition is beyond the scope of this thesis, but the notion of heterarchy is helpful in illustrating that the highly reflexive classes of Quiccheberg's system does not make it anti-systematic or disorderly, but actually suggests that his ideal Wunderkammer was organized by a complex, multi-layered system that exceeds traditional understandings of systematicity. In the next section of this chapter, I examine some of the specific inscriptions of Quiccheberg's classes in more detail in order to illustrate how the reflexivity of his classification system operates on the level of organizing particular objects according to their formal aspects.

The Inscriptions

Each of the five classes in Quiccheberg's system contains ten or eleven individual inscriptions which delineate a variety of items potential collectors might display together. Each of Quiccheberg's inscriptions—which are numbered, but not named—describes a variety of possible objects that could be displayed together in the Wunderkammer. The inextricability of place and knowledge in Renaissance epistemology is highlighted once again by Quiccheberg's inscriptions: the physical arrangement of objects denotes their conceptual relationships to one another. Like the

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[157] Foucault, *Order of Things,* 30.
[158] Ibid., 32.

classes to which they belong, the inscriptions are not rigidly ordered, nor are they mutually exclusive. Quiccheberg recommends that the inscriptions for a universal theater should "be most broadly accessible" such that objects could be "most extensively distributed into these divisions."[159] The flexibility of the inscriptions enables seemingly disparate and heterogeneous things to be grouped together. Grouping things together according to their formal similarities was, in Quiccheberg's view, an effective strategy for making parts of the invisible network of relations become visible because physical proximity constitutes a real conceptual relationship and thus can be used to generate practical knowledge.

For example, inscription 3.4 recommends the display of "diverse skeletons or connected bones" as well as "things artfully made into the shape of human parts…and provided recently to serve [as prostheses for] people who have been mutilated."[160] To Quiccheberg—a trained physician—the observation and study of skeletal fragments alongside things that looked like human body parts could help inspire innovative solutions to human suffering. But the way in which one learned of such practical knowledge was through the particular forms that God had imparted onto matter: things that looked like human body parts looked that way *because* they were supposed to be used as prosthetics. Due to the practical-experimental nature of Quiccheberg's ideal Wunderkammer, the inscriptions are often based on the practical or experiential qualities of objects. Inscription 3.10, for example, groups together objects that are "spreadable" and "friable" such as paints and pigments, or other substances that can be used for staining or colouring other materials like "metals, gum, wax, sulfur, wood, ivory, woven fabrics, or wool."[161] Similarly, inscription 2.2 for objects made from various kinds of metals, or inscription 3.8 which contains gemstones and other "shining materials."[162] Inscription 4.7 is dedicated to "whatever is necessary for rural life and for gardening."[163] A final example is inscription 2.6 for "everything related to geodesy", i.e., objects used for measuring the earth.

Throughout his enumeration of the inscriptions, Quiccheberg's recommendations for collectible objects oscillate between broadly inclusive and incredibly specific. For example,

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[159] Quiccheberg, *Inscriptiones,* 75.
[160] Ibid.*,* 66.
[161] Quiccheberg, *Inscriptiones,* 67.
[162] Ibid., 66.
[163] Ibid., 68.

inscription 1.8 Quiccheberg specifically suggests the inclusion of "grand paintings of animals that are more rarely depicted, such as deer, boars, lions, bears, beavers, and fish (both fresh- and seawater varieties)" as well as "any memorable animals that the founder's native region fosters beyond common practice, or else those it happens to lack."[164] This oscillation between specific examples and an 'anything goes' attitude is also illustrated by inscription 4.9, dedicated to weapons from foreign nations in which Quiccheberg suggests the specific examples of "scimitars, bows, ballistas, spears, quivers, and slings" but also "whatever else is so rare that it seems fit for making a collection admirable as for equipping an arsenal."[165]

Quiccheberg's recommendations for collectibles suggest that the specific contents of the universal theater are less important than the act of grouping, displaying, and studying particular objects. Perhaps he thought that his readers would be more likely to develop their own Wunderkammern if it seemed relatively feasible and practical. Like the classes to which they belong, the inscriptions for Quiccheberg's universal theater are overlapping and can be physically arranged into multiple configurations. Objects could be categorized under multiple inscriptions, depending on whichever formal feature the collector wanted to highlight. This is especially clear in class five which, as previously mentioned, operates as a sort of meta-class as it recapitulates the other classes. Inscriptions 5.1 and 5.2 are for oil and watercolour paintings, respectively, but paintings may also be categorized under inscriptions 1.1, 1.3, 1.5, 1.6, 1.7, and 1.8. In the fifth class, the criterion of inclusion is the medium in which the paintings were produced; in the first class, it is the content of the paintings (e.g. portraits of the founder, rare animals, or depictions of important cities) that justifies their inclusion in the appropriate categories.

The inclusive and overlapping categories of Quiccheberg's system would not only facilitate conceptual flexibility but would also enable collectors to make economical use of the space available for their Wunderkammern. As Meadow observes, Quiccheberg's system was designed with practical issues of storage and display in mind:

> Quiccheberg's rationale for restricting paintings of animals to class 1, inscription 8 solely concerns practicalities of display; they require large expanses on walls and therefore are better hung with other large paintings. The implication is that the paintings of animals (and by extension, depictions of nature elsewhere in the collection) could simultaneously serve as supplements to the natural specimens of class 3, which is a good illustration of

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[164] Ibid., 63.
[165] Quiccheberg, *Inscriptiones,* 68.

their multiple functions and values within Quiccheberg's system. An oil painting of an animal…could stand as an example of the artist's skill; as an end product made of oils, earths, and pigments; and as an informative image of a live creature in its native habitat.[166]

Similarly, the medical instruments of inscription 4.6 could serve as examples of the material from which they were made, products of creative or technical skill, or as instruments for the manipulation of other artifacts and specimens, depending on how they were displayed. These examples illustrate how the conceptual scheme of Quiccheberg's universal theater both reinforces and is reinforced by the more material and mundane matters of storage and display.

Quiccheberg takes great care to describe the practical aspects of assembling a Wunderkammer, often in painstaking detail. He provides some guidance on this subject in the initial enumeration of the individual inscriptions, such as inscription 4.3, which is dedicated to writing and painting instruments and should be "arranged in their own cases."[167] For inscription 5.10, concerning containers, Quiccheberg describes how tables might be placed throughout the theater and "covered chests" might be arranged against the walls.[168] The bulk of Quiccheberg's instructions regarding storage and display are found in the sections titled "Recommendations and Advice" and "Digressions and Clarifications" which follow the initial overview of the classes and inscriptions and go into considerably more detail about his proposed system, particularly those inscriptions that have been marked with the sign of Mercury.[169] After emphasizing that not all collections will be able to cover all of the inscriptions included in his system, Quiccheberg offers the following advice on how to make use of even a modest space:

> It is inconsequential that there should be no place, whether broad or narrow, for these things to be kept on display; for many can be stored, either wrapped or folder up, in narrow coffers, cabinets, or boxes, since even if they were to be displayed on walls and laid out on enormous tables or small, tiered tables, they would hardly have enough space. But here I ought to mention that apart from those caskets, woven baskets, built-in

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[166] Meadow, "Introduction," 19. As Quiccheberg himself explains, "Some might perhaps wonder why I do not move these to the third class, where I have said dried animals are to be kept. Let them know that in the third class there are only material objects and things that have to be kept in small boxes, whereas the paintings have to be spread out on walls vertically and horizontally so that they have their own place among the other large images" (*Inscriptiones,* 79-80).

[167] Quiccheberg, *Inscriptiones,* 67.

[168] Ibid., 70.

[169] The space Quiccheberg dedicates to these subsequent sections is slightly more than double that of his initial overview of the classes and inscriptions, which arguably indicates that these sections are more significant to Quiccheberg's overall project than the word 'digressions' might suggest.

cabinets, tables, and tiered stands, still other containers can serve this same function—particularly moveable shelves with grooves (which will be properly named). Likewise, there are little portable containers with sub-dividers; then caskets with doors and also caskets with doors folding outward; and finally containers in the shape of turrets, which are of superior artistry and immeasurable practical value.[170]

Elsewhere, he describes how collectors might store seeds, fruits, and stones in small jewellery boxes; how to use cases and chests for storing instruments; how large books might be unbound so as to display their pages on walls or in filing cabinets with other 2-dimensional images; and how ornamental objects will require several small cases so that they can be further sorted according to specific sub-categories, such as 'leafy', 'grotesque', 'composite', and 'monstrous.'[171]

Throughout all fifty-three inscriptions, Quiccheberg consistently emphasizes the importance of showcasing a variety of specimens and artifacts. Depending on whether a particular inscription is based on shape, colour, size, material, age, place or time of origin, subject (e.g., the particular image engraved on a coin or the subject of a painting), or texture, each includes variations among these qualities in a single category. The 'spreadable' substances of 3.10 (mentioned above) or the vessels "differing widely in shape" of 2.5 are good examples of this variety within a single category. Although 'categories' are today usually understood as scientific and taxonomic tools for dividing and arranging things according to essential kinds or types, Quiccheberg's inscriptions suggest an alternative conception of the 'category'. Bowry avers that the 'category' in Quiccheberg's system is "not so much a neatly-defined statement of fact as merely a proposition or an argument for a frame of reference."[172] In this vein, Bowry postulates that Quiccheberg's conception of categories derives from Aristotelean logic in which *kategoria* were used to determine the natures of things, yet did so from a variety of perspectives by exploring the sensory qualities of objects—that is, in Bowry's words, "by comparing and contrasting not only different types of object, but different types of predicate: the sharpness of a knife might be contrasted with the sharpness of a sound."[173] Quiccheberg's inscriptions work in a similar way, contrasting the roundness of coins with the roundness of medallions as in inscriptions 2.7 and 2.8, or the beaks, teeth, horns and "whatever of the remaining parts can add some measure of variety"

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[170] Quiccheberg, *Inscriptiones,* 74-75
[171] Ibid., 82-87.
[172] Bowry, "Re-Thinking the Curiosity Cabinet," 122.
[173] See note 216 above.

of different animals in inscription 3.3. Kuwakino makes a similar argument regarding Quiccheberg's conception of categories in relation to Ciceronian oratory. Applying rhetorical techniques to the practice of collecting, Quiccheberg approached "the classification of objects based on the criteria of 'similarity, difference, and opposition.'"[174] Whereas Cicero's complete orator used categories as conceptual tools to describe the multiple registers in which one might talk about a particular thing or topic in public (as Latour points out, there is an etymological association between *agora* and *kategoria*),[175] Quiccheberg's collector materialized categories with physical objects in order to reconstitute the variety of the universe.

A significant effect of Quiccheberg's use of categories, as well as the reflexive classes to which they belong, is that his ideal Wunderkammer would be full of stark contrasts, weird juxtapositions, and unpredictable affinities and thus might quite understandably appear to modern eyes as a deliberately heterogeneous assemblage of natural and cultural elements. Indeed, Quiccheberg's ordering system not only allowed but encouraged the side-by-side display of, for example, classical Roman sculptures with contemporary (16th-century) machines, natural specimens with human-made creations, and European artifacts with foreign ethnographica in ways that violated the Aristotelian conceptual reflex which demanded the separation of divine nature from the lowly realm of art in order to guarantee that speculative contemplation would not be contaminated by practical application. Quiccheberg's insistence upon the intermingling of *artificialia* and *naturalia* was indeed a heterodox stance but for reasons utterly distinct from 20th- and 21st-century theorists' attempts to abolish the nature-culture opposition in the name of symmetrical anthropology or flat ontology. Quiccheberg elevated art alongside nature in order to highlight the resemblances between humans and God as creative makers. The aim was not to eradicate the Aristotelian division between nature and art; it was to comprehend the relations between forms more precisely.[176] In contrast, today's Latourian scholars rethink 'purely' social explanations of phenomena by trying to repopulate humanistic and social scientific inquiry with all of the nonhuman actors that have been ritually neglected and abused by the modern constitution's radical anthropocentrism. Although each of these attempts to rethink the relationship

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[174] Kuwakino, "The Great Theatre," 308.
[175] Latour, *An Inquiry into Modes of Existence: An Anthropology of the Moderns,* trans. Catherine Porter (London & Cambridge: Harvard University Press, 2013), 59.
[176] Bredekamp, *Lure of Antiquity,* 110.

between nature and culture hinges on the notion of heterogeneity, the concept of 'heterogeneity' has a history as full of discontinuities as 'media'.

Heterogeneity and Universality

When Quiccheberg published *Inscriptiones* in 1565, 'heterogeneity' was not conceived in terms of difference or pluralism. As Kevin Hetherington explains, "the Renaissance outlook does not have a strong sense of the heterogeneous as something different, disordered or Other."[177] The diversity of forms on display in the Wunderkammer was a demonstration of the creative power of humans and God to impart form onto matter in analogous ways. Heterogeneity was thus an indication of the sameness of matter across all of the unique forms of particular things.

This alternative sense of heterogeneity is illustrated by the example of Quiccheberg's recommendations for the classification of non-European materials. A number of inscriptions include both European and non-European materials together in the same category. Inscription 1.5, for instance, recommends the display of "depictions of cities…both Christian and those cities that are distinguished in regions outside the Christian world."[178] In the second class, dedicated to artistic products, Quiccheberg dedicates the fourth inscription to "ingenious objects worthy of admiration either owing to their rarity or to the distance of space or time from their point of origin." The inclusion of non-European objects in this inscription was supposed "to lead us to an understanding of foreign customs and craftsmanship" by enabling the identification of their resemblances to European objects. A final example of the juxtaposition of European and non-European objects in a single inscription is 3.5 for plant specimens (e.g. seeds, fruits, roots) in which "foreign, marvelous, or fragrant ones receive preference."[179] Since aberrant and rare forms were prized above all, owing to the assumption that wonders held the secrets to the divine order of nature, foreign *naturalia* were especially of interest to Quiccheberg for their formal distinctions from specimens with which Europeans were familiar. Other inscriptions are dedicated exclusively to non-European materials. For example, inscription 2.4 is for various "foreign vessels" which

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[177] Kevin Hetherington, "From Blindness to blindness: Museums, Heterogeneity and the Subject," *The Sociological Review* 47.S1 (1999): 58.
[178] Quiccheberg, *Inscriptiones,* 62.
[179] Ibid., 66.

have been "excavated from ancient ruins, some brought from afar or merely less used in the region of the theater's founder."[180] Inscriptions 4.9 and 4.10 are also dedicated respectively to non-European weapons and clothing. In each of these inscriptions, Quiccheberg explains that the objects of these classes are prized for their variation from their European counterparts. In Quiccheberg's ideal Wunderkammer, European materials could be juxtaposed with non-European ones either in a single inscription based on a shared formal characteristic or through the arrangement of the classes into different configurations.

Furthermore, the juxtaposition of European and non-European materials described in *Inscriptiones* was common practice in actual Wunderkammern of the sixteenth and early seventeenth centuries. In her analysis of inventories of the Wunderkammer of Duke Cosimo I (who reigned from 1537 to 1574) in Tuscany, Adriana Turpin recounts the initial classification and subsequent reclassifications of a group of Aztec masks. Initially the masks, made of wood and covered in turquoise, were classified as jewellery and served as examples of the materials from which they were made and as products of skillful manufacture. They were grouped in a category for miscellaneous objects alongside both *artificialia* (including "various textiles", "a globe", and "small items of ebony and jasper") and *naturalia* (such as "seven small heads of animals", "a crocodile", and "four elephant's teeth)."[181] A later inventory shows that the Aztec masks were repositioned alongside European-made masks and reclassified as "costumes for masques", a category dedicated to the instrumentation of the theatrical arts.[182] Turpin argues that the multiple reclassifications of this group of masks within the collection indicate the gradual assimilation of *exotica* within European epistemological frameworks: the Aztec masks were reclassified and repositioned as their forms increasingly came to be viewed as similar to those of European artifacts. Elke Bujok reaches a similar conclusion in her study of the incorporation of foreign ethnographic items in early modern Kunstkammern. Collectors were not interested in the ethnographic details, cultural significance, or intended purpose of non-European *or* European objects. Like their domestic counterparts, foreign objects acquired from overseas exploration and imperial conquests

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[180] Ibid., 64.
[181] Adriana Turpin, "The New World collections of Duke Cosimo I de'Medici and their role in the creation of a Kunst- and Wunderkammer in the Palazzo Vecchio," in *Curiosity and Wonder from the Renaissance to the Enlightenment,* eds. R.J.W. Evans and Alexander Marr (Aldershot: Ashgate, 2006), 71.
[182] Ibid., 74.

"were seen as revealing the ingenuity and diversity of divine creation."[183] The acquisition and display of non-European objects in the Wunderkammer was an effective way of increasing the heterogeneity—and thus the universality—of the collection because they provided a whole new range of unique forms with which to study resemblances.

In the classification of objects in the Wunderkammer, non-European objects were in general treated no differently from European ones. But this should not be interpreted in terms of a pluralist ontology or even as an indication of cultural tolerance. Renaissance collectors like Quiccheberg conceived of heterogeneity as a testament to the variety of forms that nature could take according to a European—and specifically Christian—epistemological framework, rather than as material evidence of cultural practices radically distinct from their own. By the time a particular object made it into a Wunderkammer, it had already been subsumed within this Euro-Christian framework. The incorporation of non-European objects into Quiccheberg's ideal Wunderkammer—and in some actual collections—is not an indication of equality or a recognition of difference but the result of their incorporation into the networks of imperial exploration and trade through which wonderful and marvelous objects were extracted by collectors because they met European criteria of selection, whether economic, aesthetic, epistemic, or otherwise.

Quiccheberg's justification for the inclusion of non-European artifacts and specimens might also have been influenced by the revival of classical sources throughout the Renaissance. His system of classification was in part based on Pliny's *Natural History* (written between 77-79 C.E.), which served as a major influence for those interested in encyclopaedism—conceived as the 'circle of learning'—during the sixteenth and seventeenth centuries.[184] According to Ann Blair, Pliny is credited with the coinage of a popular expression among encyclopaedia enthusiasts: "no book so bad."[185] Pliny recognized that all books—and the disciplines to which they belonged—had value regardless of origin or content and advised that even if a book's value was not immediately recognizable, it might become apparent at a different point in history. Blair argues that Pliny's idiom was often conflated with "the natural theological principle that apparently bad or useless species in nature served a higher purpose."[186] These principles served as justification

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[183] Bujok, "Ethnographica in Early Modern Kunstkammern," 20.
[184] Schulz, "Notes," 208.
[185] Blair, "Revisiting Renaissance Encyclopaedism," 383.
[186] Ibid., 390.

for the inclusion of ostensibly insignificant objects and inferior knowledge in encyclopaedic collections, since such 'failures' might later prove useful as inspiration for future innovations or as tangible examples of progress when compared with other objects.

An example of this encyclopaedic principle of inclusivity can be found in the work of one of Quiccheberg's contemporaries, Ulisse Aldrovandi, an Italian scholar and owner of one of the most famous Wunderkammern of the period. In Aldrovandi's 1598 work, *On Chickens,* the author presents a thorough study of the chicken. The table of contents offers an excellent illustration of the variety of topics covered by Aldrovandi's study:

> Terminology—Synonyms—Differentiae of the Genus—The Form and Description of the Rooster and the Hen in their Genus—Anatomical Details—Sex—Sight. Taste—Voice. Song—Lustfulness. Coition. Parturition. Incubation. Generation. Egg-laying—Rearing. Feeding—Nature. Habits. Character—Magnanimity. Fighting—Sympathy. Antipathy—Concerning the Diseases of Chickens—The Method of Catching Chickens—History—Synonyms—Derivatives—Presages—Use in the Sacred Rites of the Pagans—Auguries. Prodigies—Mystical Interpretation—Moral Interpretations—Secret Signs (Hieroglyphics)—Dreams—Emblems—Riddles—Epitaph—Apophthegms—Proverbs—Fable—Apologues—Use in Medicine—Injurious Effects of Chickens—Use of the Chicken as Food—Various Other Uses of the Chicken—Insignia. Images. Coins.[187]

The range of topics included in Aldrovandi's study of the chicken demonstrates the encyclopaedic understanding of inquiry as not limited "according to any *one* set of principles but as the interweaving of numerous diverse and philosophical systems."[188] It also offers an apt example of the way in which Renaissance encyclopaedism was characterized by a productive tension between the theoretical classification of disciplines and the practical accumulation of heterogeneous facts.[189] Aldrovandi's encyclopaedic study of the chicken dabbles in mythology, anatomy, sexual reproduction, magic, medicine, and cooking. Despite this variety, however, Renaissance encyclopaedists did not—as it may appear to modern readers—select a number of topics to discuss at random. Each domain or discipline was part of the same circle of learning and were therefore necessary for genuinely encyclopaedic knowledge. As Foucault explains, the Renaissance era did not conceive of magic and medicine, for example, as rival forms of knowledge; rather, both are

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[187] Ulisse Aldrovandi, *On Chickens: The Ornithology of Ulisse Aldrovandi (1600),* vol. II, book XIV, trans. & ed. L.R. Lind (Oklahoma City: University of Oklahoma Press, 1963), xiii.
[188] Findlen, *Possessing Knowledge,* 53.
[189] Ann Blair, "Revisiting Renaissance Encyclopaedism," 396-7.

"part of the main body of knowledge itself."[190] In other words, the epistemological dilemma here was not a matter of determining which domain of knowledge rules over and against all of the others, but a question of how to understand the relations between each distinct form within the continuous body of knowledge.

As a 'live action' encyclopaedia, Quiccheberg's ideal Wunderkammer was organized in manner similar to Aldrovandi's *On Chickens* insofar as it was to contain a variety of forms representative of every discipline and provide the means with which collectors could achieve practical knowledge of the entire universe. Heterogeneity was not conceived as difference but as the key to deciphering the *uni*verse. The 'universality' of Quiccheberg's proposed Wunderkammer was also conceived differently from how we might understand it today. In Quiccheberg's sense of the term, universality had nothing to do with totality or completeness, since—as discussed in the previous section—a complete view, in the sense of the 'theater' as 'theory', was neither possible (for human beings), nor desirable. As Meadow explains, "Completeness is not the goal; indeed, it is unattainable. Instead, the quest is to stimulate new learning and expand useful knowledge." [191] A universal theater was thus not a totalizing theory of the universe but instead an encyclopaedia that could make all of the objects it contained 'communicate' with one another. [192] If a Wunderkammer contained only a limited number of objects, so long as they were sufficiently diverse in form, the objects could be made to 'speak' to each other through their various formal features and to engage in multiple 'conversations' simultaneously.

Categorizing objects according to their forms was thus practical in terms of making it easy to organize a collection, but also in terms of amplifying the use value of specific objects. The position of an individual object within the Wunderkammer should be the one that renders it most useful and the use value of any object was a measure of its level of interrelatedness with all of the other objects in the collection. As Bruce Robertson explains, "the interrelatedness of a collection— the juxtaposition or grouping of objects—enhances the practical value of any single object. An encyclopaedic collection allows the user to extract the maximum information from the individual

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[190] Foucault, *Order of Things,* 37.

[191] Meadow, "Introduction," 6.

[192] Jan C. Westerhoff, "A World of Signs: Baroque Pansemioticism, the Polyhistor and the Early Modern Wunderkammer," *Journal of the History of Ideas* 62.4 (Oct. 2001): 647.

artifact or specimen." [193] To this end, Quiccheberg's classes and inscriptions were not fixed categories, nor were they mutually exclusive. Rigidly demarcated or fixed categories based on essential concepts would in fact diminish the heterogeneity of the collection by reducing the possible relations between objects and therefore also detract from its universality.

In sum, the built-in reflexivity of Quiccheberg's inscriptions and classes suggests that classification alone was not the ultimate goal of his ideal Wunderkammer—or, more specifically, classification in the sense of dividing and arranging the universe into a static order based on the essential nature of particular things was not of concern to Quiccheberg. As Bruce Robertson asserts, "Quiccheberg's inscriptions and classes serve to map out and organize the collectability of the material world, but they do so for a greater purpose than to taxonomize it." [194] Rather, classification functioned as an ongoing practical task through which objects were selected according to a stipulated feature—i.e. a quality or aspect of a thing that could be experienced through the senses—and grouped together in order to reveal their hidden relations. [195] The efficacy of the Wunderkammer, in Quiccheberg's view, lay precisely in that it brought together diverse phenomena such that relations between things that would never naturally be grouped together could be revealed through experience and experimentation within the artificial conditions of the theater, chamber, or cabinet. Quiccheberg's classes and inscriptions served as a working system that facilitated the "frequent viewing and handling" [196] of the objects in the collection which lead to the discovery of different forms of relationality. This in turn enabled a collector to "acquire unbelievable practical knowledge regarding everything and a manifestly divine wisdom." [197]

Although the exact etymological origins of the German word *Wunder* are uncertain, Quiccheberg's ideal *Wunder*kammer lends credence to the theory that it "may have to do with intricacy or complexity." [198] Rather than constituting a miscellaneous anti-system, Quiccheberg's classes and inscriptions for a collection of arts and wonders enabled multiple systems of order to operate simultaneously. The complexity of Quiccheberg's classification system not only challenges the stereotype of the Wunderkammer as a random assortment of unrelated objects, but

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[193] Robertson, "Preface," viii.
[194] Robertson, "Preface," viii.
[195] Foucault, *Order of Things*, 20.
[196] This phrase is from the extended title of Quiccheberg's text, quoted in full in chapter one.
[197] Quiccheberg, *Inscriptiones,* 91.
[198] Daston and Park, *Wonders,* 16.

also suggests that the ontological and epistemological boundaries upon which Quiccheberg's Wunderkammer operated were far from flat. In lieu of listing its strange and marvelous contents, perhaps future studies of the Wunderkammer might focus instead on the complex conceptual and material structures in which those contents were contained.

CONCLUSION

Toward a Media History of the Wunderkammer

"We can imagine how Quiccheberg would have appreciated the flexibility of hypertext. He would also, no doubt, have loved to surf the Internet. He would have appreciated the sense of having access to all that is known and knowable at his fingertips."

—Mark A. Meadow

Like Meadow, I think Quiccheberg would find the Internet a useful tool, especially for communicating with distant colleagues, coordinating the exchange of artifacts for collections, and publishing verbosely-titled treatises. Most of all, I imagine he would appreciate the Internet for its searching, cataloguing, and sorting capabilities. Indeed, Quiccheberg would likely find the Internet wonderful (in our present-day sense of 'extremely pleasing'). But I am not so sure he would describe it as a 'Wunderkammer'.

Would Quiccheberg have perceived a sense of omniscience, of being able to access all there is to know, were he to interface with a web browser? Given that his conception of knowledge depends upon sensory engagement with a variety of forms, this seems unlikely. Quiccheberg's ideal Wunderkammer enabled one to not only see, but also touch (and perhaps smell) the artifacts it contained. The sensory experience involved in physically arranging and rearranging the Wunderkammer's contents was integral to producing knowledge by rendering visible their formal resemblances. In this vein, would Quiccheberg perceive web-based digital media like YouTube or Flickr or Facebook as collections of heterogeneous information, or would he balk at the idea that the World Wide Web could contain the whole world given that it only holds things in digital form?

Perhaps what would interest Quiccheberg most about the Internet is precisely what has thus far escaped the attention of new media scholars who liken it to a Wunderkammer: its physical architecture and infrastructure. As discussed in chapter three, for sixteenth-century intellectuals, the physical structure of knowledge was inextricable from its conceptual organization. How would Quiccheberg interpret twenty-first century knowledge based on the myriad devices, fibre optic cables, servers, routers, switches, and power supplies that constitute its physical infrastructure?

While contemporary discussions of the physical topology of the Internet tend to hinge on questions of how to diminish the 'digital divide' in an effort to make information—discrete bits of transferable data—more accessible to a greater number of people, Quiccheberg was unconcerned with issues of social inequality and accessibility. In fact, he would likely be disturbed by the fact that most scholars today conceive of knowledge as something that ought to be produced and shared by all members of society; his ideal Wunderkammer was explicitly designed to ensure that universal knowledge remained the domain of elites who were granted access by divine right.

As Quiccheberg suggests, the purpose of comparison is not to demonstrate either identity or non-identity. Comparing things from different cultures, historical eras, geographical regions, and contexts of use is helpful for articulating the sometimes superficial or tacit similarities that make classifying anything (including 'media') possible in the first place, and for highlighting discontinuities between apparently similar things. At first glance, the Web and the Wunderkammer may appear to share a similar mode of knowledge production, one that represents reality as an assortment of heterogeneous information arranged according to user-generated categories. However, Quiccheberg's guide reveals that the concepts and practices that made his ideal Wunderkammer epistemologically productive—such as experience, classification, and heterogeneity—are not only distinct but also, in some cases, antithetical to new media scholars' attempts to reform digital media as subversive and accessible means of creating and sharing information. Although the 'digital Wunderkammer' might be a useful heuristic device for thinking through the challenges posed by digital media today, the non-linear effects of this remediation reinforce a version of the late Renaissance Wunderkammer that is conspicuously absent from *Inscriptiones*. For the most part, this digital version affirms the traditional interpretation of the Wunderkammer as a predecessor of the modern museum but does so as a celebration rather than denigration of its apparently random order and lack of stable epistemological boundaries. In contrast, the Wunderkammer proposed in *Inscriptiones* contains an abundance—perhaps an excess—of hierarchies. Quiccheberg's meticulous instructions and lengthy discussions of the various ways in which one might achieve a universal collection—that is, a collection in which all objects are linked to one another—suggest that the epistemic value of classification depends upon it being an ongoing practical task. Furthermore, rather than indicating the absence of modern knowledge systems, the flexibility of Quiccheberg's categories within the microcosmic

Wunderkammer is granted by the divinely ordered macrocosm. The emergence of the 'digital Wunderkammer' thus illustrates the twin tendencies to see the past in terms of the present and to think of new media as destined to solve the problems created by older—and therefore less 'complex'—media (similar to how Quiccheberg presented his Wunderkammer as an improved version of Solomon's House of Wisdom).

Of course, Quiccheberg did not propose his Wunderkammer with the explicit intention of studying a category of phenomena called 'media'. However, as I hope this analysis of *Inscriptiones* illustrates, his ideal Wunderkammer was intended to provide a method of inquiry into concepts and practices we now readily associate with media studies: amplifying the senses, leveraging space and time, representing the world, and rendering the invisible visible. Indeed, in delineating a classification system for potential Wunderkammern, Quiccheberg's guide is rife with reflections—sometimes enigmatic and nebulous—on the kinds of questions that are typically raised by media scholars: What counts as art? What counts as nature? What counts as knowledge? *What* counts? Quiccheberg's *Inscriptiones* provides a rich source for analyzing how these questions were framed before 'media' assumed the technological and theoretical baggage it carries today.

Rasmussen and Stock argue that although medieval and early modern reflections on media often appear fragmented and lacking in terminological consistency, this should not shy media scholars away from their study.[199] The lack of an established approach to media and mediation in medieval and early modern sources can illuminate the ways in which our own "powerful, complex modern theories may have obscured our ability to discern [] understandings of media that differ radically from our own."[200] Rather than approaching the late Renaissance as a period of 'amediality', future media histories of the Wunderkammer could explore how its specific differences with regard to mediation were constituted while simultaneously recognizing that because the Wunderkammer operated within a frame of reference distinct from our own, as Martin emphasizes, "*the specifics of these [differences] may not—and perhaps should not—be fully grasped.*"[1] In other words, instead of trying to negate or subsume the Wunderkammer within our own analytic frameworks, its study provides a useful source for critiques of the frameworks and concepts that today seem central to media studies—including 'media' itself. Thus, by way of

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[199] Rasmussen and Stock, "Introduction," 102.
[200] See note 196 above.

conclusion—or in lieu of one—the remainder of this chapter identifies a few potential paths along which future media histories of the Wunderkammer might travel.

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As discussed in chapter one, the Wunderkammer's theological orientation has contributed to its characterization as a disorderly and illegitimate form of knowledge production, as the grouping together of great works of art and scientific instruments with religious relics and magical stones violate the epistemological terms and conditions of modernity. Perhaps its entanglement with religion and theology has likewise contributed to the neglect of the Wunderkammer in media studies, a field whose most well-known objects of study—such as film, TV, radio, photography, and telegraphy—are commonly associated with historical processes of modernization and secularization. Ernst, for example, points directly to the Wunderkammer's reliance on God's divine order in order to explain its distinction from digital media, which "exist[]without such theological background; image clusters are organized by algorithms which are known to the human programmer and have been 'embodied'…in machine operations." [201] Putting aside, for a moment, the rather loaded question of the agential capacity of algorithms (or lack thereof), it is worth dwelling upon our classifications of media as either 'secular' or 'religious'. In justifying his classification of the Wunderkammer outside the boundaries of modern electronic media, Ernst draws on an unqualified stereotype of the 'premodern' world as being overlaid by some sort of homogeneously religious blanket. This not only underestimates how religion reciprocally informs contemporary media practice and theory, but also obscures the multiplicity of medieval and early modern religion (not to mention the myriad varieties of secularism).[202] To say that Wunderkammern in general emerged from a religious worldview does nothing to explain the practical distinctions with regard to how particular collections were organized, displayed, and used. These practical distinctions might be better understood through a comparison of Quiccheberg's guide with other such proposals about the proper organization and use of collections.

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[201] Ernst, "'On Nature'", 2.
[202] See David Chidester, "Sacred," *Material Religion* 7.1 (2011): 84-91; Birgit Meyer, *Sensational Movies: Video, Vision, and Christianity in Ghana* (Oakland: University of California Press, 2015); Charles Taylor, *A Secular Age* (Cambridge: The Belknap Press of Harvard University Press, 2007); Isaac Weiner, *Religion Out Loud: Religious Sound, Public Space, and American Pluralism* (New York: NYU Press, 2013).

One such proposal was written by a contemporary of Quiccheberg, Gabriel Kaltemarckt, who in 1587 published instructions for how Elector Christian I of Saxony might improve the collection of his predecessor, Elector Augustus I. Augustus' collections consisted primarily of instrumentation pertaining to the liberal arts, as well as the tools of artisans and merchants (artifacts that Quiccheberg would for the most part categorize under his fourth class and, to a lesser extent, his second class), and altogether held over 10,000 items as of 1587.[203] Tools and instruments constituted more than 75 percent of the collection's contents, while pictures, sculptures, and other artworks accounted for only 1.5 percent of the collections.[204] Kaltemarckt sought to radically alter the focus of the Dresden collection so that it would be dedicated primarily to the works of great artists (especially Italian ones), rather than natural artifacts and instrumentation. He sought to turn the collection exclusively toward artistic objects—that is, he sought to develop a Kunstkammer (art chamber) or Bilderkammer (picture chamber), rather than a more inclusive Wunderkammer. A media history of the Wunderkammer might compare Kaltemarckt and Quiccheberg's attitudes toward what a 'proper' princely collection contains and how it should be organized in order to discern how these differences in representational strategies were informed by the state-sanctioned religious programs of their beneficiaries: Duke Albrecht V, a key figure in the German counter-reformation, and Christian I, whose Kunstkammer helped to define his Lutheran position as an alternative to both Catholicism and Calvinism.[205]

Returning to the question of algorithmic agency raised above, I wonder whether in the wake of 'the nonhuman turn'[206] the distinctions between Wunderkammern and digital media can be explained convincingly in terms of the enchanted (theologically or otherwise) premodern world and the disenchanted modern world—an historical narrative that relies (perhaps paradoxically) on an understanding of media technologies qua *agents* of secularization and modernization. Whereas the traditional story of modernity as a gradual process of disenchantment posits "a fundamental

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[203] Barbara Gutfleisch and Joachim Menzhausen, "'How a Kunstkammer Should be Formed': Gabriel Kaltemarckt's Advice to Christian I of Saxony on the Formation of an Art Collection, 1587," *Journal of the History of Collections* 1.1 (1989): 4.

[204] Joachim Menzhausen, "Elector Augustus's *Kunstkammer:* An Analysis of the Inventory of 1587," in *The Origins of Museums: The Cabinet of Curiosites in Sixteenth-and Seventeenth-Century Europe,* eds. Oliver Impey and Arthur MacGregor (Oxford: Clarendon Press, 1985), 70.

[205] Gutfleisch and Menzhausen, "'How a Kunstkammer Should be Formed'", 6.

[206] Richard Grusin, *The Nonhuman Turn* (Minneapolis: University of Minnesota Press, 2015), 1.

divide between human and nonhuman agents"[207] and thus puts media technologies on an ontological rung below humans (but above nature), contemporary scholars are crafting critical counter-tales and reevaluating the agential capacities of humans as well as nonhumans.[208] The rigid ontological division between 'humans', on the one hand, and 'nonhumans', on the other, no longer seems to make sense (nor does this anthropocentric idiom—it seems unlikely that a tree, a worm, or an octopus would use such a dualistic expression). Moreover, the increasingly popular conception of agency as an emergent effect of heterogeneous assemblages—and of media as exemplars of agency as an emergent effect—adds to the urgency for media histories of the Wunderkammer.[209] Perhaps other participants (human or non) in the sixteenth-century collections of *artificialia* and *naturalia* would make interesting protagonists for such counter-narratives or—at the very least—remind us, as Quiccheberg does, not to assume that the appearance of heterogeneous nature-culture hybrids indicates ontological pluralism or an attunement to difference.

Furthermore, in challenging dominant assumptions about religion, secularization, and non-human agencies, media histories of the Wunderkammer could provide an entry point into a broader discussion about periodization. Despite the fact that the Wunderkammer emerged about a hundred years after the printing press—a technology that has come to seem nearly synonymous with modernity itself—it has not typically been understood as modern, perhaps due in part to its characterization as an adolescent version of the museum. If not its temporal origins, what exactly makes the printing press seem more 'modern' than the Wunderkammer? Exploring how the history of the Wunderkammer and that of the printing press intersect and diverge would further illuminate historical discontinuities with respect to media and mediation, with Quiccheberg's *Inscriptiones*—in which he recommends that a Wunderkammer contain print type and printer's ink (class four,

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[207] Jeremy Stolow, *Deus in Machina: Religion, Technology, and the Things in Between* (New York: Fordham University Press, 2013)*,* 13.

[208] Examples of these 'counter-tales' can be found in: Jane Bennett, *The Enchantment of Modern Life: Attachments, Crossings, and Ethics* (New Jersey: Princeton University Press, 2001), 112; David Morgan, "Images at Work: The Material Culture of Enchantment" (public lecture, Concordia University, Montreal, QC, March 17, 2016); Charles Taylor, "Disenchantment-Reenchantment," in *Dilemmas and Connections: Selected Essays* (Cambridge & London: The Belknap Press of Harvard University Press, 2011), 288-9.

[209] Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham & London: Duke University Press, 2009; Ian Bogost, *Alien Phenomenology, or, What it's Like to be a Thing* (Minneapolis: University of Minnesota Press, 2012), 3; Richard Grusin, *The Nonhuman Turn* (Minneapolis: University of Minnesota Press, 2015), vii; John Durham Peters, *Marvelous Clouds*, 2.

inscription three) and be located near the royal court's printing shop—providing one potential point of departure.

As the boundary between nature and culture is re-examined and reformed across the humanities and social sciences today, media theorists are looking to STEM fields and to nature itself as key sources in their research, especially in regards to questions about the conditions of knowledge production. Lisa Gitelman, for example, looks to particle physics in order to explore how the conditions of inquiry—increasingly digital and networked—influence the nature of the humanities today.[210] Similarly, Siegfried Zielinski, in calling attention to the 'deep time of the media', derives his theoretical orientation from the fields of geology, zoology, and paleontology—a move that has inspired Jussi Parikka, among others, to develop a 'geology of media' which deliberately conflates media history with earth history.[211] "Nature," observes John Durham Peters, "turns out to be profoundly historical."[212] This is not a new discovery but, as Peters' theory of elemental media makes clear, a rediscovery of a very old idea—one that was also (re)discovered in and through the Wunderkammer during the sixteenth and seventeenth centuries. According to Bredekamp, the collection and display of artifacts and natural specimens from antiquity to the early modern period enabled "a kind of dynamic historical reflection" which suggested that nature was not static and unchanging but developed progressively over time.[213] This discovery of the historicity of nature was made possible precisely because the Wunderkammer represented an 'unnatural nature' that grouped together things that could not coexist naturally.

The prerogative of the Wunderkammer to simultaneously hold multiple bodies—including both metaphorical bodies of knowledge and literal bodies (human and nonhuman; living, dead, and inanimate)—as well as various unattached appendages, depended upon collectors' desire to articulate more precisely the interrelationships between different areas of inquiry within the 'circle of learning'.[214] For all the talk of interdiscipinarity today, the 'inters' between disciplines are still in the process of being articulated, as illustrated by the debates over whether and how medieval

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[210] Lisa Gitelman, "Welcome to the Bubble Chamber: Online in the Humanities Today," *The Communication Review* 13 (2010): 28.
[211] Siegfried Zielinski, *Deep Time of the Media: Toward an Archaeology of Hearing and Seeing by Technical Means* (Cambridge: MIT Press, 2006), 4; Jussi Parikka, *A Geology of Media* (Minneapolis & London: University of Minnesota Press, 2015), 35.
[212] Peters, *Marvelous Clouds,* 27.
[213] Bredekamp, *The Lure of Antiquity and the Cult of the Machine,* 9.
[214] Blair, "Revisiting Renaissance Encyclopaedism," 379-80.

and early modern historians can study a category of phenomena now called 'media' without eliding historiocultural specificities. Media histories of the Wunderkammer could provide models for thinking about and especially practicing interdisciplinarity by identifying potential points of exchange between, for instance, medieval and early modern historians, media theorists, religious studies scholars, sociologists and philosophers of science and technology, and research-creation practitioners. Perhaps the blurry boundary between nature and culture today might become more focused if examined through the lens of another historical moment in which this boundary was being enthusiastically arranged and re-arranged. Confrontations between old and new media are the crux (and crutch) of these boundary negotiations. In other words, media are both the terms being negotiated and conditions in which these negotiations are made. As W.J.T. Mitchell reminds us, "We not only think *about* media, we think *in* them."[215] While it may not be possible to think in a Wunderkammer today, thinking about the Wunderkammer in other media—whether digital or not—highlights the reflexive nature of media as historical subjects and serves as a welcome reminder that the conditions and categories of inquiry shape the kinds of media histories that can be produced. What kind of Wunderkammern might future media histories produce?

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[215] W.J.T. Mitchell, *What Do Pictures Want? The Lives and Loves of Images* (London & Chicago: University of Chicago Press, 2005)*,* 215.

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