

“Cognitio Causarum”: Interdisciplinary Discourse in Antiquity and Modernity;

Preserving and Privileging the Original Archive

This paper is predicated on the intention of my University to build a new museum and library center for the interdisciplinary study of Arts and Technology. While this University was founded through the generous donations and planning of the co-creators of the microchip and other computer-related business technology, I argue here the case for the major inclusion of a library with physical archives and collections of art and design with a vision to enable support, but not complete dependence in the convenience and efficacy of future technologies. I envision this facility to become, like the rebirth of the Bibliotheca Alexandrina, a center for enlightened discourse in the spirit of Plato and Aristotle, namely an American athenaeum for the twenty-first century. The Bibliotheca Alexandrina in fact, serves readers of conventional printed books and electronic media in Arabic, French and English. It is my aspiration that my university’s athenaeum will not be the last founded in the twenty-first century, but the reprise of a classic and worthwhile ideal.

The Case for Physical Archives

In 2011, Art historian Hubert Burda proclaimed in his book, *The Digital Wunderkammer: 10 chapters on the Iconic Turn* that “The internet is analogous to the seventeenth century cabinet of curiosity”. (Burda, 2011) But is it *really* in fact, a literal replacement for libraries and museums?

It is generally the rule of western law that the original of any document or work of art is considered the “best evidence” of its creation. This is especially important within the realm of research and documentation. Original observations documented in writing can be tied scientifically to the original author. Otherwise, why do we privilege original works of art and historic documents over mere duplications in our national archives and museums?

I suggest that it is indeed a broad jump to connect the internet, which has developed wildly and exponentially within just the last twenty years or so, with the careful security and discursive nature of the original cabinets and other historic precursors.

This poses the question, “In an age of virtual meetings and all manner of hackable and changeable data stored on “clouds”, where does one find rational truth and how and where may such truth be discovered and shared regarding other human beings? “

I argue that we should stop to reflect on the source of modern western reason, lectured in the ancient Agora by Socrates and recorded by Plato in the fifth century B.C. E. and which continues as the foundation of all western philosophies. Socrates’ search for rational truth originated in the streets of the Athenian agora and was defined by two of his successors: Plato and Aristotle.

Aristotle’s own student: Alexander the Great, originated the city of Alexandria and the idea of that Library built by Ptolemy I flourishes in the still extant athenaea, universities, libraries and “genius groups” of the present day. Archives and libraries reassure us that there is a vast store of knowledge and diversion available on the darkest of days; the consolation of the greatest scientists and authors are just within reach. The physicality of a book, a library, an ancient archive, is both exhilarating and patient.

The Internet and Discretion

Aside from academic databases and access to academic communities for web-hosted meetings, some sharing of ideas already occurs on the internet in blogs, and less seriously on “snap judgement sites” like Twitter, Pinterest and Instagram, where the nature of sharing is largely anonymous and superficial.

I argue that Burda’s view of the internet as a cabinet of curiosity is naïve and inaccurate because it permits the promulgation of un-vetted information and data and it operates as an intellectual vacuum, without the direct examination of human exchange or “discourse.” Absent the existence of libraries and archives, “unpopular” information may never be recorded or discovered.

There’s No “Aura” on the Internet

The loss of the ability to experience the physicality of the object or the document on the internet is also at issue. On the reflection of first seeing Michelangelo’s Pieta, and his David, it would be impossible to comprehend how different, how emotional, how powerful they are as when you are “in the room” with them. One marvels at the conversion by the hand of mortal man a stone into a vision of humanity that causes you to emotionally and viscerally react to it. You may recognize the image from a photograph, but I argue that the photograph is barely resolved to the actual object.

Walter Benjamin touched on this problem in his essay on “The Work of Art in the Age of Mechanical Reproduction” regarding the “aura” of art. (Benjamin, 1936)

One has only to walk through the galleries of the British Museum where Michelangelo's margin doodle of his own portrait, and Charlotte Brontë's manuscript revisions can be experienced from the originals to appreciate the value of this "aura" of verisimilitude.

Additionally, trends of fakes and forgeries in the Art Market and Art Education have demonstrated the need for students to experience artwork not just on the internet, but in person. This is precisely why Harvard has recently made it possible for students to experience art in the "discursive" classrooms connecting to the new Harvard Museums. The lack of contact and discourse about real art in situ is a major issue since "Connoisseurship" is not/is no longer instructed in the United States by accredited universities. The reliance on digital images has caused a dearth of scholarship and connoisseurship and a preponderance of fake art in the art market and in respected museums: The Tate and the British Museum and many others were confounded by "masterpieces" by John Myatt and Sean Greenhalgh respectively.)

Oxford Professor Emeritus and renown Leonardo scholar Martin Kemp stated that he was "convinced of the authenticity of the "Bella Principessa" (as examined from photographs) which has since been claimed by the forger Greenhalgh as his work. (Greenhalgh 2017)

Therefore, in this aspect of the art history gallery/art museum versus the internet as a Cabinet or the online collection as a study aid, I argue that it is impossible to equate the same "reception" of an object on a pixelated computer screen as the experience of being, "in the room" with the object.

On the other hand, it is now possible to locate access to books, notes, studies, etc., which they are either too fragile to examine in person or which are too geographically removed from the researcher, now by the manuscript (possibly) being scanned into a database. The computer and

the SKYPE program in fact do allow members of a conversation to meet from the far corners of the world as if they were seated around a conference table, but they still ultimately lack the intimacy of human discourse during a live, in person, exchange. “Body language” is a silent but important element of our human communication. Therefore I argue that the exchange of human discourse is much more provocative and productive when we gather together for the occasion.

The Plato’s Academy and Aristotle’s Lyceum: Precursors of the Athenaeum

Rational Discourse: Socrates and the Dialogue

Philosophers are “lovers of knowledge” and the earliest of these, Socrates, engaged his students to think about themselves and their society through his method of directed questions. Through the responses of a student, he continued asking additional questions until they were guided to formulate their own reasoning powers of the world. At times he also asked the students, why their actions did not appear to follow their professed beliefs. Socrates was teaching his students how to investigate, and reason their beliefs for themselves. This is a teaching method still taught to new teachers and is generally termed the “Socratic Method, or “Socratic dialogue.” Socrates taught openly in the public market in Athens and though he did not personally leave a written legacy of his philosophy one of his students called “Plato” recorded some of his own remembrances of these conversations of his teacher in his “Dialogues”.

Plato’s Dialogues concern “beliefs and why we hold them, and knowing the causes of things, a “rational truth” which we generally term as the study of Epistemology and Metaphysics”.

(Herman 2014, p. 45)

“In Plato’s Republic, Book VII a description is given by Socrates which is a metaphor of the dark cave as the world where shadows are cast on the walls, shadow images of

animals, men and objects.” “Socrates directs them to imagine a permanent existence from birth, forced to view the images. ‘If permitted to exchange discourse with one another’, asks Socrates, ‘Wouldn’t they assume that this was indeed real life?’”

Plato’s story might easily become interpreted as an allegory of our present age. The “puppet show” in Plato’s cave could have meant television in the early 1960-70s, but today it could just as easily be used as an argument against dependence on the internet. The internet keeps the user from “seeing the real sky” and causes people to live out their lives in the “cave” of a smart phone and signals the coming dearth of rational human discourse. Unfortunately, since the democratization of internet access (at least in the United States) has recently been removed, access to data is now prioritized by the monetization (commercialization) of privileged access.

Why did Plato’s dialogues resonate in Spain (translations Plato from Greek to Arabic by Averroes,) and in Italy with Marsilio Ficino’s translations and study and in this venue of reasoned discourse? Perhaps the answer may be found in the writing of Plotinus, a Greek philosopher who revived the interest in Plato’s Discourses in the third century AD.

“According to Plotinus who read Plato three hundred years after he died, ‘The idea of man is formed after that which is the prevailing and best part of him, namely his soul’” (Plotinus quoted in Paul Friedlander’s *Plato* (New York: Pantheon, 1958) 1:129 quoted by Herman 2014, p. 16) (“Averroes” is depicted on the left side of the Vatican Museums “School of Athens” fresco by Raphael.) I shall return to this topic and the School of Athens fresco after discussing the library.

Our knowledge of the ancients comes bequeathed to us from the circulation of the written word in library collections such as the Vatican Library, *the Bibliotheque Francaise*, the Bodleian Library, the Escorial Library, and the British Library. Except for the Library at Alexandria (Recently reestablished in the 21st century as the *Bibliotheca Alexandrina*) all have functioned as

repositories of the core of knowledge in the western world and the resource for early discursive groups

Documentation of the World of Philosophy and Science The Library at Alexandria

Ptolemy I's founding of the greatest library in the world, the Library of Alexandria connected both the Plato's Academy and Aristotle's Lyceum as models of discourse in man's search for rational truth.

Aristotle was followed by Pliny the Elder, whose own pursuit of science and humanity led to his death reportedly saving friends after closely observing and recording his evidence of the destruction of Vesuvius in 79 CE.

“We must trust the evidence of the senses rather than theories”, Aristotle says, “and theories as long as their results agree with what is observed” Aristotle, the son of a physician, from a family of members of the guild of Asclepiades (a Greek Physician who was known to Pliny the Elder was used to relying on senses to diagnose and treat diseases.) (77-79 CE, Pliny, *Historia Naturalis* vii, 37)”. (Pliny, Rackham, Jones, Eichholz, & Folio, 2011)

Twenty-first century historian Arthur Herman also privileges the power of examination and documentation presented by the written word of Aristotle as the foundation of the sciences:

Aristotle linked reason to the power of observation. In his “History of Animals” he describes cutting open a chameleon to see what goes on inside. Aristotle classified species of birds, fish, mammals and insects and invented the language of science: words like genus and species, hypothesis and analysis, all find their first and still current use in Aristotle. Aristotle invented and wrote treatises in biology, zoology, gerontology, physics, astronomy, meteorology (the study of meteors and comets) politics, psychology, logic and beyond physics: metaphysics. After observing ships disappear in the horizon hull first, he concluded that the earth must be round” (Herman 2014, p 42-43)

Therefore, I ask, “Would there have been a *Historia Naturalis* or *Metafisica* without library preservation and the discourse modeled in Aristotle’s precursory works?”

Discursive Space within a Princely Palace of Sacred Space: The Vatican *Stanza della Segnatura* as the Visualization of the “Athenaeum”

Examples of some images painted al fresco and decorating a room designed as the personal library (Now the Vatican Apostolic Library) of the Pope, Julius II are two works by Raphael placed in a kind of contextual discourse with one another on opposite walls. “Disputation of the Most Holy Sacrament” and the “School of Athens” are placed in permanent physical confrontation. “The Disputation of the Most Holy Sacrament” is a formal court-like debate between the authorities of the Church who debate the Catholic tenet of faith known as the transubstantiation of the bread and wine into the body and blood of Christ. The division of the dispute presents a heavenly tribunal in the upper register, picturing God in three persons, the Apostles, Mary, the Mother of God and the saints. In the lower register is the visualization of the discourse between Supernatural Truth which is opposed, on the opposite wall by a “discourse of Rational Truth”: The School of Athens.

According to the first recorded western art history by artist and historian Giorgio Vasari, “These frescos were painted by Raphael Sanzio, “who was called into service at the Vatican by his countryman, the *geometrist* and artist, Donato Bramante, who was the Vatican architect” “(Vasari, 1550, Part II).

The “*tondo*” mural above Raphael’s School of Athens (Scuola d’Atene) sets the mood for what appears below. In the tondo there is a portrait of a female personification of *Philosophy*, (from the Greek for “love of Knowledge”) with putti flanking her on either side, one putto holds a sign which says “*Causarum*” which on the side of the figure of Plato below and the other putto holds

a sign which says above with the word “*Cognitio*.” Taken as a phrase, this is an exhortation to the viewer to “Understand the Causes (Reason)”. Two books are held by Philosophy, one which is “*Natura*” and the other is “*Moralis*”. (I believe that “*causarum cognitio*” may have been cited in the original writing of Cicero, whose stoic philosophy is explored in the *Scuola* fresco. These murals, along with other murals Raphael painted in the Segnatura library present an extraordinary knowledge of Roman Catholic Church doctrine and Greek philosophy. The dialogue in the murals themselves and between these two murals suggests that an interdisciplinary discourse which suggests, that both Plato and Aristotle both seek to understanding the causes (reason). They seem to appear as divided in two “camps” in the Athenaeum, one side following Plato’s Philosophy of Forms and the other following Aristotle’s Scientific Reason. The presence of students and philosophers teaching (on both sides) indicates that this is an interdisciplinary space, which, reflecting both the Academy and the Lyceum and has become simply termed the “Athenaeum” I propose the concept of the Athenaeum as pictured in the *Scuola di Atene*, is highly significant as it illustrates the “split” of Platonic philosophy and Aristotelian philosophy visually into two teaching camps. It also indicates that both share an environment of mutual respect in the interdisciplinary discourse presided over by “Philosophy.”

In a sense, the creation of the frescos of the Stanze Raffaello in the Vatican represents a collaboration of philosophical knowledge, mathematical and artistic expertise which typifies an interdisciplinary circle. While Raphael di Santi was not the recipient of a conventional, formal education, both he and Donato Bramante, Urbino natives and contemporaries had access to the humanist court of the Duke Federico di Montefeltro’s palace court in Urbino.

Humanist Enlightenment for the Florentine Court with a Teacher of Greek

While commercial exchange existed between the Greek and Italian people, the Italians consisted of independent city states. Although they did have contact with the Greeks in commerce, the languages exchanged on both sides were vernacular and not classical Latin or Greek. While the Greeks maintained education in classical Greek, which was the language of the Byzantine empire, scholars in the West depended on derivative translations of classical works. According to Texas A&M Professor Federica Ciccolella, classical Greek was considered, “The language of a political and religious enemy until the capture of Constantinople. (Ciccolella 2017).

Of particular interest to an international conference on museum documentation taking place in Heraklion, is the role that Crete played as a conduit for Greek culture between itself, Constantinople, Venice and Florence during the Renaissance. They were all active with respect to education and the publication of manuscripts especially between the fifteenth and sixteenth centuries. This period is often referred to as “*Venetokratia*” (Ciccolella, 2017) In fact scholars from Crete traveled to the Florentine court, teaching Greek, and thereby provided the nexus to reading Plato and Aristotle to the Florentine Humanist circle.

This idea of coexistence between cultures and religions is also echoed in Spain about the Arabs, Christians and Jews and is termed “*Convivencia*”. Both periods of coexistence produced manuscripts and libraries which are still extant for study.

Signaling the beginning of the Renaissance in 1397, the Studium Florentinum hired the Byzantine scholar, Manuel Chrysolaras to come to Florence to teach classical Greek to the Florentines, in order “to learn to read the Greek language and access all the texts which had been ignored during the middle ages.” Once the informed humanists learned to read the Greek sources, they gathered

the manuscripts in Greek of arts and sciences into library collections, and the instruction of Greek classics coexisted with instruction of Latin classics and were of course made available in the humanist libraries such as the Biblioteca Medicea Laurenziana in Florence and the Apostolic Library at the Vatican. According to Prof Ciccollella, late 14th century humanists Poliziano, Perrotti and Vettori used Greek methods learned from “*Aristophaneis latentes*” to “record and document their sources and methods” (Ciccolella 2017 p 122.)

In fact, in the Court of Urbino in the Marches, both Bramante and Santi were exposed to the writing of noted scholar, Leonardo Bruni who was taught Greek by the professor hired for the Florentine court from Constantinople and who also served in the Venetian court, Manuel Chrysoloras. (Thomson, 1966)

Bruni addressed a document, “De studiis et litteris (in approximately 1425) to Battista Malatesta, the Urbino Count of Montefeltro’s daughter. The document was a grammar and translation-based method of teaching Greek and Greek translation Manuel Chrysoloras brought with him from Constantinople. Chrysoloras grew to notoriety from his instruction to early Florentine humanist luminaries such as Leonardo Bruni, Giacomo da Scarperia, Poggio Bracciolini, and Guarino da Verona.

Artist Raphael Santi was present in the Urbino court as his father was the court painter and Raphael, his apprentice. Raphael also apprenticed with Perugino (born Pietro Vannucci) and later in the Florentine Court of the Medici before he was recommended to Rome by his Urbino colleague, Donato Bramante, who was a painter as well as an architect. It is likely that Raphael was given the advantage to the Plato and Aristotle or their translations, in the Montefeltro Court.

He was also given additional exposure to Greek literature in the Medici Court.

This suggests that subject matter for the two frescos was likely informed by the influence of Pope Julius II, Donato Bramante, Michelangelo Buonarotti, (who was painting the Sistine Chapel) and with access to the 200 volumes in Pope Julius's personal library.

The Democratization of the Athenaeum-like group: The Founding of the University

The history of the "Largest and oldest university in the English-speaking world", Oxford University which "cannot define a founding date, but its public access site on the world wide web informs us that "Teaching has occurred at Oxford since 1096." (Oxford accessed at www.ox.ac.uk/about/organization/history) The Oxford website suggests an interdisciplinary sort of organic grass-roots foundation, whether it was termed, if indeed it was, either an Academy or Lyceum. The story of Oxford states that young men gathered in the City of Oxford and engaged in tutoring each other in subjects of mutual interest until they could hire tutors in subjects outside of their own expertise. This circle of tutors grew into the individual colleges of Oxford.

Perhaps even more interesting is the founding of Cambridge University which cites as a likewise "organic" evolution (on the official Cambridge University website):

"By 1200, Cambridge was a community which was also a thriving county town and possessed on distinctive school. In 1209 the hostilities between the students of Oxford and the residents caused some of the scholars to move and settle in Cambridge. They lived in town lodging at first, but later property was rented as hostels and a Master placed in supervision of the scholars. By 1226 an institution was organized by the students and they hired a Chancellor, and thereafter they created a course of studies instructed by their group membership."

(www.cam.ac.uk/about-the-university/history/early-records) (Accessed on 09/11/2017)

Nevertheless, we cannot underestimate the value of the Ashmolean Museum and Library which is used to teach at Oxford and which was the result of the individual collections (cabinets of curiosity) of natural objects and the consolidation of their collections. Much the same happened at Cambridge, an off-shoot of Oxford, where the Fitzwilliam Museum's origins were largely based in the library, art and music collection of "the 7th Viscount Fitzwilliam of Merrion. On his death in 1816, Fitzwilliam deeded to Cambridge his library and all of his artwork and included an endowment which would not only build a facility but also provided the funds to "increase learning" and the collection." (<http://www.fitzmuseum.cam.ac.uk/aboutus>) accessed 07/11/2018.

The unfortunate conceit suggested by the existence of the internet is that all the research study ever performed, every book ever written, every idea ever conceived, has been magically uploaded, as if by fairies, to the world wide web for later access, (and the originals may therefore be discarded). Unfortunately, this is not only untrue, but has caused some universities to consider selling their libraries Yet, the question is: How will rational discourse between like-minded, intellectually curious individuals occur if we limit ourselves to databases and absent the opportunity for human exchange of ideas? What will happen if we close the libraries and move to a version of Plato's Cave via the internet?

This human and natural pursuit of rational discourse also prevailed in western Europe outside of England, first in Italy in the original western university, the University of Bologna, founded in 1088.

"In fact the early seventeenth century "founders of the Italian National Academy of the Lynxes despite their devotion to the experimentation of the sciences, also

broadly embraced the “pleasurable arts and philosophy” After many trials (including that of Lincei member Galileo Galilee) the Accademia dei Lincei is still an active athenaeum-type community with lectures and discursive events for a membership which is inclusive to all scholars of Math/Science and the “pleasurable arts and Philosophy”. (www.lincei.it) accessed 07/11/2018.

In Western Europe, there were similar academies which functioned as an Athenaeum, meaning a location for the study/instruction of science/mathematics as well as the “pleasurable arts and philosophy”. Some received the benefit of donated collections of “cabinets of curiosities”, art collections, libraries and conducted classes. Others, such as the London, Manchester and Liverpool Athenaea were, *and still are*, a locus for interdisciplinary discourse within their membership and membership exchanges/alliances.

It is significant that in some instances the Athenaea have not “gone into decline” but rather they have become the foundation of several universities or founded departments in universities.

These initially ad-hoc social encounters, “genius associations” developed organically throughout history and the present when like-minded individuals look for inspiration beyond their own interests and drew together in interdisciplinary discourse: natural dialogue between artists, scientists/engineers, and writers.

The Persistence of the Athenaeum

These “genius associations” and Athenaea, whether ad hoc or formal institutions also permitted those who never left their homeland to have their work carried (via papers and books) from and to Europe, and elsewhere in the world. Once particularly compelling

instance is the literature of Edgar Allen Poe (*The Raven*) which was “translated into French as *Le Corbeau* by Stephane Mallarme and illustrated by Edouard Manet” (Gallica); the “realism of Jean Leon Gerome brought back to Philadelphia by Thomas Eakins”, (Griffin, Homer, Eakins, & Anshutz, 2004) (Griffin, Homer, Eakins, & Anshutz, 2004) (Griffin, 2004) and the volumes of the mathematical study of perspective by Filippo Brunelleschi, Piero della Francesca, Leonardo and Bramante. Others like Charles Darwin, (Wulf, 2016)(Wulf, 2016)(Wulf, 2015) Benjamin Franklin, and Thomas Jefferson (Walls, 2011) (Walls, 2011) (Walls, 2011) were inspired by the diaries of Alexander Humboldt (Wulf, 2015) to explore, experiment, and examine the order of the Universe.

In the United States Athenaea were founded and informally based on British models, mostly those of Manchester and Liverpool which still function as centers of continuing enrichment and education.

The Case for the Athenaeum in the 21st Century as a Center for Interdisciplinary
Discourse in Literature, Art, and Science

The articles drawn up for the founding of the Boston Athenaeum mostly by attorneys, were written as legal documents: very specific and enumerate the purpose of the Boston Athenaeum: “modeled on the Liverpool Athenaeum which we have visited”. (Memoir of the Boston Athenaeum)

The Boston Athenaeum was founded in 1807 by a group of individuals led by William Emerson, (father of Ralph Waldo Emerson). The still extant New York Society Library, was founded in 1754 as a private subscription library and was the first Library of the US

Congress as they met in New York City-however not the first library in the United States, a place held by the Redwood Athenaeum in Rhode Island as it was founded in 1747.

The Acts of the Boston Athenaeum dated 1807, indicate the authority, purpose and features of this establishment as:

“A reading room, constantly open, to house all important journals, domestic and foreign, publications periodically released, general reference books and books appropriate for consumption. It has been thought that an establishment of this kind, which is easily found in small and large cities of Europe, would, if commenced here, receive liberal support and be regarded as auxiliary to literature and to business, useful to the public and honourable to its founders and patrons.”....

.... “The next branch of the Athenaeum is the Library, designed to preserve in a separate room, the important works of philosophy and science in every language; particularly the extraordinary and costly publications which are difficult to locate in this country; the most valuable encyclopedias of the arts and sciences, in the French and English languages, standard dictionaries of the learned and principal modern languages; also dictionaries, critical and biographical; books of general reference, useful to the merchant and the scholar; and finally the works of all the best authors, both ancient and modern”

“It is suggested if possible that without diminishing the library or reading room access that a philosophy cabinet of natural specimens coming from the three kingdoms of nature, arranged scientifically both artificial and natural including coins, antiques, gems, metals and a separate room for the review of designs for useful machines as well as the fine arts, especially the arts produced by artists native to greater Boston.”

A laboratory and equipment to conduct experiments in natural philosophy and chemistry and for astronomy and improvements in geography will be controlled by the Athenaeum Corporation...”

“The Athenaeum may be recommended as a place of social intercourse. But it will principally be useful as a source of information, and a means of intellectual improvement and pleasure.” (All from “Memoirs of the Boston Athenaeum”)

Therefore, in the case of the Boston Athenaeum the library was privileged over the art and cabinet of curiosity. This was so important that in fact the Boston Athenaeum art collection was

largely used as the foundation of the Boston Museum of Fine Arts, keeping the Athenaeum library as the most important asset.

These tenets of the Boston Athenaeum which appear to have come from a careful analysis of the Liverpool Athenaeum, generally reflect the same goals and objectives of other Athenaea in Boston, Providence, Berkshire, Redwood, and Philadelphia. These, except for the Berkshire Athenaeum, which is now contained in the local library, continue to serve their communities as subscription libraries and centers of intellectual discourse, quite successfully.

Dinner and Discourse

The Athenaeum at the California Institute of Technology with its association to the nearby Huntington Library presents a strong “marriage” of arts and technology. Albert Einstein was brought to work at CalTech as well as other Nobel Laureates. One of the more interesting practices in some Athenaea is to utilize a large common eating hall to facilitate discourse among the students and scholars. This suggests to me the plan of Ptolemy I at the Library at Alexandria where he gathered the scholars together for meals and open discourse (Casson, 2001), 2001 33-34)

In the Spring of 2012, Nobel Laureate Professor Stephen Hawking who lectured at the California Institute of Technology was housed during his visit in the CalTech Athenaeum where he insisted on taking his meals, like Albert Einstein, in the general dining room, surrounded by faculty and students.

In Andrea Wulf’s 2015 biography of explorer and writer Alexander Humboldt, (California Institute, 1943)(California Institute, 1943) Wulf makes the connection of the scientific revolution, such as “Franklin’s invention the lightning rod to control nature with science” and

“Newton’s theory of the clockwork universe” (Wulf 2015, 17) and the fact that “Scientists organized themselves in the exchange of scientific discourse through their letters “. (Wulf, 2015, p 18). “In 1790 Alexander Humboldt first visited London and was impressed to meet “botanists, explorers, artists and thinkers at the Royal Society of Science. (Wulf, 2015, p 20). Through connections of his brother Wilhelm, Wulf met both Goethe and Schiller and connected with them in their discussions of “natural sciences’ and together they went to lectures by Kant”. (Wulf 2015, 28-39).

Humboldt traveled to the United States in 1804 and met with Thomas Jefferson and influenced Jefferson’s decision to send Lewis and Clark on their famous expedition. (Wulf 2015, p. 111)

“Humboldt’s writings about natural science and his scientific collections during his trips were published and promoted through his literary and scientific contacts including the Royal Academy of Sciences and to America, where his book *Cosmos* was read by the subscribers of the Boston Athenaeum, including Emerson, Thoreau, and Edgar Allen Poe.” (Wulf 2015 p. 294-310)

In other circles of “reasoned discourse” indeed, there is a record from American author Henry James’ sojourn in London and his evenings at the London Athenaeum which describe what it’s like to be “in the room” with an array of intellectual and political geniuses. “In a letter to his brother William, written on March 29, 1877, Henry indicates that he is writing from the London Athenaeum, on the Pall Mall and has been in the company of several luminaries, (the London Athenaeum literary circle) which he shares with his brother: Spencer Huxley, John Morley, Goldwin Smith, Henry Cowper, Frederick Wedmore, and, “the monstrously clever, and agreeable MP Mr. John Otway.” “He continues to the next evening where apparently impressed by the conversations among luminaries continues his narrative and claims to have dined with on

the next day: Lord Houghton with Gladstone, Tennyson, and next to Dr. Schliemann, “The excavator of old Mycenae” and “half a dozen other men of high culture.”

(https://archive.org/stream/lettersofhenryja01jamerich/lettersofhenryja01jamerich_djvu.txt)

Many of the members “cross-pollinated multiple Athenaea, such as Herman Melville and Edgar Allen Poe. Poe was also a member of the Philadelphia Athenaeum (Hayes(Hayes, 2002)(Hayes, 2002), 2002) and the Providence Athenaeum (Lancaster, (Lancaster & Providence Athenaeum., 2003)(Lancaster & Providence Athenaeum., 2003)2003) Melville was a member of the New York Society Library and the National Academy of Design. Melville donated his papers to the Berkshire Athenaeum where he was also a member. (<http://www.pittsfieldlibrary.org>) accessed 07/12/2018.

While “membership” was pivotal in most cases to the founding of Athenaea in the United States and elsewhere due to the expense of the purchase of books and the building of the structure itself, universal access to a Athenaeum- type complex which would serve to enliven interdisciplinary discourse was recommended by Aristotle who argued, “A difference in capacities among its members enables them to attain a higher and better life by the mutual exchange of their services.” (Aristotle: *The Politics* Book II Chapters 2-3 and Book III Chapter 1.)

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