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## The Renaissance of the Theatre of Memory

Giulio Camillo (1480 - 1544) was as well-known in his era as Bill Gates is now. Just like Gates he cherished a vision of a universal Storage and Retrieval System, and just like Microsoft Windows, his 'Theatre of the Memory' was, despite constant revision, never completed. Camillo's legendary Theatre of Memory remained only a fragment, its benefits only an option for the future. When it was finished, the user - so he predicted - would have access to the knowledge of the whole universe. On account of his promising invention, Camillo's contemporaries called him 'the divine'. For others, like Erasmus or the Parisian scholars, he was just a 'quack', but also this only shows that his reception was as strong as is the case with the computer gurus of our days. Still, Camillo was forgotten immediately after his death. No trace is left of his spectacular databank - except a short treatise which he dictated on his deathbed and which was formulated in the future tense: 'L'Idée del Theatro' (1550).

It was only in the computer age that Camillo's name reappeared out of oblivion - at first sporadically in a few specialised articles in the fifties, then with increasing intensity and enthusiasm, until Camillo became a real hero of books and congresses, and even of television programmes<sup>1</sup> and Internet appearances<sup>2</sup>. How did the renaissance of this Renaissance encyclopaedist come about?

The catalyst was a chance occurrence: Ernst Gombrich, the director of the Warburg Institute in London gave Camillo's treatise to his colleague Frances

<sup>1</sup> Bolzoni, Lina: *Il Teatro della Memoria*; television film, 1990.

Yates to read. She studied this short work thoroughly and was so fascinated that she not only brought the 'Theatro' back to life in her mind's eye, but also made a reconstructive drawing of it in accordance with Camillo's instructions. The result formed the basis of a book on the history of the art of memory, which became one of the most influential works of cultural studies of recent decades.<sup>3</sup> Further attempts at a reconstruction followed that of Yates, and their variety demonstrates how little we know about Camillo.

The objective knowledge we do have can be summarised very briefly. The structure was a wooden building, probably as large as a single room, constructed like a Vitruvian amphitheatre. The visitor stood on the stage and gazed into the auditorium, whose tiered, semicircular construction was particularly suitable for housing the memories in a clearly laid-out fashion - seven sections, each with seven arches spanning seven rising tiers. The seven sections were divided according to the seven planets known at the time - they represented the divine macrocosm of alchemical astrology. The seven tiers that rose up from them, coded by motifs from classical mythology, represented the seven spheres of the sublunary down to the elementary microcosm. On each of these stood emblematic images and signs, next to compartments for scrolls. Using an associative combination of the emblematically coded division of knowledge, it had to be possible to reproduce every imaginable micro and macrocosmic relationship in one's own memory. Exactly how this worked remains a mystery of the hermetic occult sciences on which Camillo based his notion.

However, what makes Yates' study so fascinating is not so much her attempt to unveil the mystery - because this has since been disputed in further research - but a much bolder hypothesis which she advanced only in a cautious aside: the essential connection between this Renaissance scholar's combinational data construction and the operation of today's digital calculator. This hypothesis met with general approval. Umberto Eco labelled Camillo as a

<sup>2</sup> Comp. the annotated list of links under [www.sfb-performativ.de/seiten/b7\\_links.html](http://www.sfb-performativ.de/seiten/b7_links.html).

cabbalistic programmer<sup>4</sup>, Lina Bolzoni called his data construction the ‘ultimate computer’<sup>5</sup>, Hartmut Winkler derived an entire media theory from ‘L’Idea del Teatro’<sup>6</sup> and Stephen Boyd Davis considered it to be the historical forerunner of the design of a virtual reality.<sup>7</sup>

But are we not doing Camillo’s ominous theatre an injustice by equating it with the *Docuverse* of the computer age?

One argument for the historical connection is that, for some time now, we have been able to observe a shift in the prevalent model of human as well as digital memory: from a repository to a theatrical stage.<sup>8</sup> Memories no longer seem to us to constitute a passive inventory for deposit and withdrawal; rather, they seem far more like actors in a succession of changing stage settings. A telling metaphor shift in the neuro-sciences goes hand in hand with corresponding changes in the ways we speak about computers. In the wake of advances in interactive applications, the function of digital technology is no longer described merely in terms of "storage and retrieval," but rather in terms of the performativeness of images in motion.

In this connection, one of the most influential books about contemporary computer interface design is entitled "Computers as theatre"<sup>9</sup>; but its author, Brenda Laurel, was not the first one to propagate this new way of looking at computers. The history of the newer interface technology similarly begins with the "Spatial Data Management System", that was developed in the late 1970s by Richard Bolt and Nicholas Negroponte at the MIT. It allowed the user, sitting in a cockpit, to switch back and forth between different screens whose

<sup>3</sup> Frances Yates, *The Art of Memory*, London, 1996, p. 114 ff.

<sup>4</sup> Eco, Umberto: review of: Mario Turello, Daniele Cortolezzis: Anima Artificiale. Il Teatro magico di Giulio Camillo. in: L’Espresso, 14.8.1988.

<sup>5</sup> Bolzoni, Lina: The Play of Images. The Art of Memory from its Origins to the Seventeenth Century, in: Corsi, Pietro (ed.): The Enchanted Loom. Chapters in the History of Neuroscience, New York/Oxford, 1991, p. 23.

<sup>6</sup> Winkler, Hartmut [1994]: Medien - Speicher - Gedächtnis. Online: [www.uni-paderborn.de/~winkler/gedacht.html](http://www.uni-paderborn.de/~winkler/gedacht.html).

<sup>7</sup> Davis, Stephen Boyd [1996]: The Design of Virtual Environments with particular reference to VRML. Online: [www.man.ac.uk/MVC/SIMA/vrml\\_design/title.html](http://www.man.ac.uk/MVC/SIMA/vrml_design/title.html).

<sup>8</sup> Cf. Bernard J. Baars, *Das Schauspiel des Denkens*, Stuttgart, 1998.

<sup>9</sup> Brenda Laurel: *Computers as Theatre*; Reading (Mass.) 1991.

contents he could zoom toward or away from, creating the impression of navigating through a "dataland."<sup>10</sup>

This new interface put to new use an old insight of the Roman rhetoric manuals – namely, that the highest degree of mnemonic efficiency is exhibited by techniques involving topographical arrangements of mental images (*loci et imagines*). As Richard Bolt states: "Intrinsic to the ensemble of studies outlined in the proposal was a study recalling the ancient principle of using spatial cueing as an aid to performance and memory." He called it the "Simonides Effect"<sup>11</sup>, alluding to the Greek poet Simonides of Keos, to whom the Roman rhetoricians attributed the invention of the ancient art of memory. The Macintosh User Interface is, as Nicholas Negroponte has implied, also based on this sort of Simonides Effect.<sup>12</sup>

It is true that the *Human Interface Guidelines*,<sup>13</sup> which were developed by Apple's Human Interface Group during the eighties, could well have been borrowed from the traditional teachings of rhetorical *ars memoria*. In addition to the basic "See-and-Point" principle, which recalls the ancient *loci et imagines*, the most important key words in the *Guidelines* are "Feedback and Dialogue", "Consistency" and "Perceived Stability". In the *Rhetorica Ad Herennium* we read that rote learning is most effective "when we [employ] not mute and indistinct images, but rather ones that set something in motion" (Apple's "Feedback and Dialogue"); these actuating images (*imagines agentes*) must be "arranged at certain fixed locations" (Apple's "Consistency"); and finally, says the *Rhetorica*, there must be no opportunity for us to "accidentally be mistaken in the number of locations" (Apple's "Perceived Stability").<sup>14</sup> Psychological studies in the workplace have confirmed that these principles

<sup>10</sup> Richard A. Bolt: *Spatial Data Management*; Cambridge (Mass.) 1979, p.13.

<sup>11</sup> *Ibid.* 8.

<sup>12</sup> Nicholas Negroponte, *Total digital. Die Welt zwischen 0 und 1 oder Die Zukunft der Kommunikation*, Munich, 1995, p. 135 ff.

<sup>13</sup> Apple Computer Inc., *Human Interface Guidelines: The Apple Desktop Interface*, Reading (Mass.), 1987.

<sup>14</sup> *Rhetorica Ad Herennium* III, XVIIIff., Apple Computer p. 3 ff.

considerably increase the ease with which the use of operating systems and software applications is learned.<sup>15</sup>

It is evident that, considering the explosion in user-designated storage options, the particular architecture of memory suggested by the desktop metaphor will have been put out of joint. And if we stick to the terms of our historical analogy, we might say that the current situation corresponds to the phase in which the classical memory palaces of antiquity gradually collapsed under the pressure of increasing amounts of amassed knowledge.

This is precisely the situation in which Camillo found himself with regard to the scholastic treatises of the Middle Ages: They curbed the remnant of a productive imagination in images from the memory in favour of a mechanical rote learning of prayers, virtues, and lists of mental objects.<sup>16</sup> It is here that Camillo comes in with his attempt to reanimate the now mechanical and uncreative *memoria*. He reminded his contemporaries that the function of *imagines agentes* was not just the "painting of an entire scene",<sup>17</sup> but rather the stimulation of imagination through their agency. Camillo expressly emphasizes the matter that concerns him: "to find, in these seven comprehensive and diverse units, an order that keeps the mind keen and shakes up the memory."<sup>18</sup>

So these images from the memory were no longer purely a means of better remembering, but a medium for better concentration to the benefit of empathic recollection. For this purpose, he transplanted the arena of *ars memoria* from the traditional treasuries (*thesauri*) and palaces of memory to the Vitruvian theatre. The "drama" that he produced on this stage made use of the teachings of antiquity, but dressed them up in hermetic, cabbalistic costume.

<sup>15</sup> Cf., e.g., Alexandra Altmann, "Direkte Manipulation: Empirische Befunde zum Einfluß der Benutzeroberfläche auf die Erlernbarkeit von Textsystemen," *A&O: Zeitschrift für Arbeits- und Organisationspsychologie* 3 (1987): pp. 108-114.

<sup>16</sup> Cf. Frances Yates, *The Art of Memory*, London, 1966, p. 114ff. This does not contradict Horst Wenzel's observations on the participatory character of mediaeval *memoria* in: Horst Wenzel, *Hören und Sehen. Schrift und Bild. Kultur und Gedächtnis im Mittelalter*, Munich, 1995.

<sup>17</sup> Willhelm Schmidt-Biggeman, "Robert Fludds *Theatrum memoriae*," *Ars memorativa. Zur kulturgeschichtlichen Bedeutung der Gedächtniskunst 1400-1750*, eds. Jörg Jochen Berns and Wolfgang Neuber [Tübingen, 1993] p. 157.

But Camillo also departed from the tradition in one other aspect, in that he reversed the topography of structure of neo-classical theatre. With this inversion, the efficiency of the ancient architecture of memory could be significantly increased. Its user could navigate through the three-dimensional arrangement of his own will and vary his view between near and far accordingly.

No doubt there is a structural affinity between such ideas and the digital theater of memory. For some years now, there has been work on 3D visualisation processes: vector-driven cartographies such as Hyper-G, VRML, Hyperbolic Tree, Hotsauce, Flythrough, etc., which alter the depicted space with every movement of the mouse, joy stick or data glove. Such means are also used to attempt to increase the number of memory locations without creating disorientation.

But how is this related to the cosmological context in which these ideas were valid? Is this not entirely different from the post-metaphysical situation of memory architecture? Remarkably enough the opposite is true, because today's technology produces similar effects: The "Pan-Mnemism"<sup>19</sup> of our time is nourished by the dream of a universal, encyclopaedic machine. The hypertext guru Ted Nelson, for example, has something comparable in mind:

"Universal or grand hypertext [...] means [...] an accessible great universe of linked documents and graphics [...]. This is an idea many people now share – the idea that we can get to everything, add to everything, keep track of everything, tie everything together, that we can have it all."<sup>20</sup>

What is at stake here is no longer merely the retrieval of profane information, the functional organization and recall of locations in the memory, but the spellbinding attraction of a fantasy of omnipotence: having the sum total of the world's knowledge at one's disposal – a move that his patron, the King of

<sup>18</sup> "la memoria percossa": 1550, p. 11.

<sup>19</sup> Elisabeth von Samsonow, "Zeit bei Giordano Bruno oder: Zum Verhältnis von Kosmochronie und Mnemochronie," eds. Eric Alliez et al., *Metamorphosen der Zeit*, Munich, 1999, p. 140.

France, surely appreciated. And not only that: the spiritual inclinations of times past also make their reappearance in the digital theatre of memory. Brenda Laurel says:

"[...] for virtual reality to fulfill its highest potential, we must reinvent the sacred spaces where we collaborate with reality in order to transform it and ourselves."<sup>21</sup>

Now, it is in the nature of the dream of a total encyclopaedia that it must remain a dream. In this respect, it is worth noting that Camillo's *Idea del Teatro* was formulated in the future tense – as if the actual theatre of memory was still to be built. Unfinishability is here no shortcoming, but rather an added value; it does not diminish, but rather intensifies the mystery. The World Wide Web also owes its aura as a pan-mnemonic docuverse to the *sfumato* of a diffuse presentation of data, whose incompleteness stimulates us to act on hunches and intuitions, and thus produces that feeling of exuberant spatial experience with which passionate web-surfers are filled. The necessarily limited frame of the monitor only augments this experience by its peephole effect; it feeds the voyeuristic fantasy that there is still something infinitely more thrilling to discover than what is actually before one's eyes.

Nevertheless, what differentiates Camillo from today's cyberspace and sheds light on the possibly untapped potential of the digital theater of memory is the fact that his data construction always appears *as* theatre. The sites and images of his model are not meant to fascinate in an unmediated way, but should rather be reflected on as staged objects.

In contrast, the technical #movement# of images by means of computer animation does not lead to #an activity of# reflection but is perceived passively, in a reflex-like manner; instead of shaking up the memory, it conditions it. Camillo's theatre presents itself as an enclosed space, and, precisely for that reason, incites one to transcend it. On the other hand, the forms of 3D visualization, which give the illusion of endless space, prevent the data-

<sup>20</sup> Cited in: Robert E. Horn, *Mapping Hypertext: Analysis, Linkage, and Display of Knowledge for the Next Generation of On-Line Text and Graphics*, Waltham, 1989, p. 259.

traveller from realizing that the trajectory of his transit is fixed and thus undermine the desire for transcendence. This is because our imaginative activity diminishes in direct proportion to increased activity on the screen.

What is decisive to this difference is not the outer but the inner movement. In computer animation it is directed unambiguously at the consumption of an object; in Camillo's work, however, the self-reflexive contemplation of the object by a subject also involves a rebound movement back to the subject. This reflexivity is made evident in Camillo's inversion of the theatre structure, which places the objects of memory in the tiers, where *they* simultaneously return the gaze of the observer while he stands on the stage and constitutes the centre of intellectual activity.

But why would this turnaround not also make Camillo's memory theatre a viable model for turning the digital staging of information into a self-reflective form?

Indeed, in recent years, there have been several artistic attempts to play upon Camillo's idea. They indicate that an anamnesis of computer-presented data is not encouraged when the interface vanishes, as if it disappeared by immersion under the surface of the water, as is postulated by today's pioneers of Interface Design, but rather, on the contrary, when the surface is mirrored back to the observer.

Once again, the idea for this comes from Yates' #study#. Robert Edgar drew Bill Viola's attention to the book and from then on Viola proclaimed Camillo the forerunner of digital 'data space'.<sup>22</sup> It was on this basis that he produced his spatial installation 'Theatre of Memory' (1985), in which the processes of electrical connection in human memory are associated with the electronics of video. In the same year, Robert Edgar himself programmed his 'Memory Theatre One' on an 'Apple II', which used the then modest possibilities of computer graphics to reconstruct Camillo's amphitheatrical data

<sup>21</sup> Laurel, *ibid.* p. 196 *ff.*

<sup>22</sup> Bill Viola [1983]: Will There be Condominiums in Data Space? In: Ders.: Reasons for Knocking at an Empty House, London, 1995, pp. 98-111.



architecture. In the mid-nineties, Agnes Hegedus read this influential book together with her partner Jeffrey Shaw. She constructed a 'Memory Theatre VR' (1997), which used the new possibilities of computer simulation. On the inside walls of an accessible rotunda, which acted as a sort of 'cave', mobile panoramic images concerning the history of artificial memory were projected using a 3D mouse. And since 1998, the performance artist Emil Hvratin has carried out several projects in which the information scenarios of our era are questioned on the basis of Camillo's work.

What do we learn from these reflections on the state of the computer age? To what extent do they give us a definite answer about the way information will be staged in the future?

As stated at the beginning, the *Idea del Teatro* is #has?# left much in the dark. Its "revelation" begins with a reference to the significance of silence in the face of divine secrets. And no doubt, Camillo's mystique only profited from the fact that he divulged just bits and pieces of information about how his theatre was made. Only as long as he continued to work on its expansion, to endeavour constantly to overhaul its architecture and iconology, could he have given himself and others the feeling of being on the trail of the secret of the alchemistic transformation of memory into recollection.