

From:

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Real Virtuality

About the Destruction and Multiplication of World
(with a Preface by Gerd Stern)

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Increasingly, the virtual became reality by a hybridization of the world as we knew it: the process that went on in recent years is one of a technically assisted hybridization of both space and self, the »old« world is becoming virtualized and functionalized to a degree never experienced before. For the first time in human history, we have reached a threshold where we have not only to re-assert but to redefine ourselves, as regards our fundamental terms of understanding what world means for us, our base of existence and now an assemblage of mixed realities; and connected, what being human means.

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Introduction

ULRICH GEHMANN AND MARTIN REICHE

What is a *real* virtuality? According to our common everyday understanding, this is an overt contradiction since things are either real, or virtual – the latter denoting the imagined, the illusioned; which might even look as if it is real but isn't. It is commonly understood that reality is confined to the domain of real physical things, real human relations, to things and events happening in real physical space, although increasingly assisted in the course of the last two decades by 'virtual' means like internet-based communication, the use of QR-coding, geosocial games which make use of both 'real' and 'virtual' settings, devices for new man-machine interfaces, and the like.

Seen from a background of common understanding and technological achievements, what is a real virtuality then? Is it a new kind of the real? Or just an enhancement of a real still existing, that cannot be altered in its essence *despite* those achievements? Frankly speaking, we don't know; or more precise, we don't know yet. This is the reason for making this anthology at all. Because it might be that for the first time in human history, the boundaries between real and virtual become not only blurred but obsolete. Finally (so our thesis), we are not discussing merely some technological achievements to 'enhance' or to 'augment' that which already exists – and which will not be changed in its essence, in its fundamental qualities; irrespective of technological trials to make it more consumable, more intense, or even more real than it already is, devoted to a spirit of the age that has gotten used to hyperlatives. What we discuss is more than that; it is about a new *kind* of the real, one emerging right now, in the midst of our times. And the aim of this anthology is to look at some of its different facets.

Of course, the longing for such a 'new real' did not come out of the blue, and moreover, it isn't even confined to the epoch we commonly label as modernity, although it reached its first unfolding there. To draw a hypothetical line of an overall development, the issue already started in the Renaissance, with the at-

tempt to create real virtual spaces as worlds of their own, for instance in cases like the gardens of Bomarzo, or the parks of a Villa Lante or a Villa d'Este in Italy. An attempt that later on, in the Baroque era, was perfected towards a total landscaping, so to say, the one of the Grand Park. Within those artificial but real 'virtual' worlds, an additional virtualization took place: mini-worlds of an entirely fictitious, i.e. *constructed* nature were made, for instance ideal villages or other sceneries of an "unspoiled" and virtualized "original" nature which stood in a seeming opposition to the park's artificial total scenery.

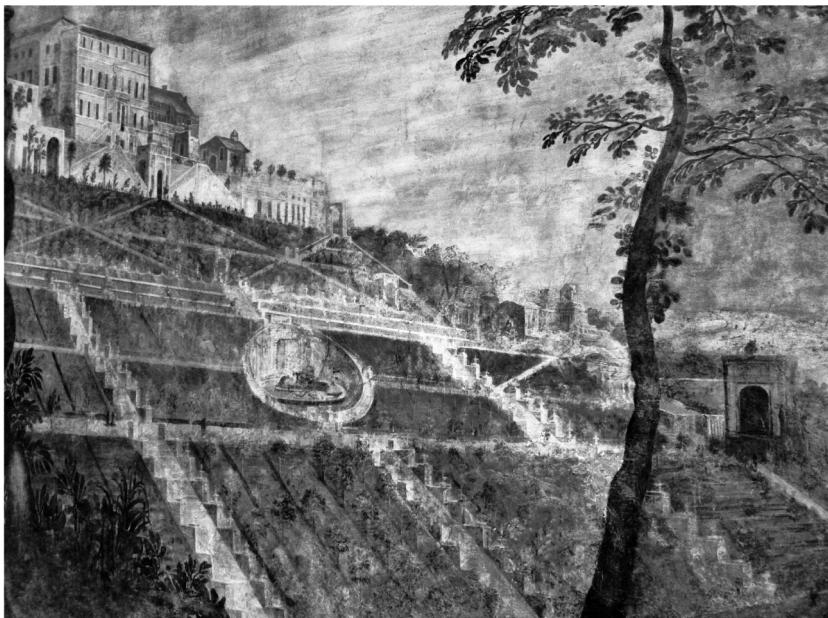


Figure 1. *Virtual world in old reality*¹

The epitome of such attempts in creating imagined worlds and letting them become real was the English Park, by constructing seemingly "natural" sceneries adapted to movement. Whereas the Renaissance and Baroque Park² were still essentially static constructions, in the English Park, a typically modern trait was introduced, namely movement. The visitor as *user* of such a spatial arrangement could conceive the 'naturality' of its different perspectives only by wandering

1 Villa d' Este, Tivoli, plan of the park, last quarter of 16th century. Sala della Fontana, photography U. Gehmann.

2 Concerning the Grand Park of Versailles as an exemplary case, see Graafland, A. (2012): 84ff.

around, by moving through the arranged sites, not unlike the Scenic Highways to come later, in a motorized modernity. What later turned into a primate of movement and a dynamization of worldly belongings, giving way to the functional worlds as networks laid over an ‘original’ real had its beginnings here, in the English Park. As regards a *real* virtuality, such arrangements were also called Landscape Gardens. Not only due to their often considerable dimensions (it needs space to move), but first and foremost due to their very intention – to embody extended virtual worlds allowing for the picturesque and the sublime,³ designed for a natural look of a designed reality: extended, encompassing, and constructed in such a way that it does not look like a construction but *as if* it would be natural. It had to appear as if it would embody a real landscape and not (just) a constructed one.

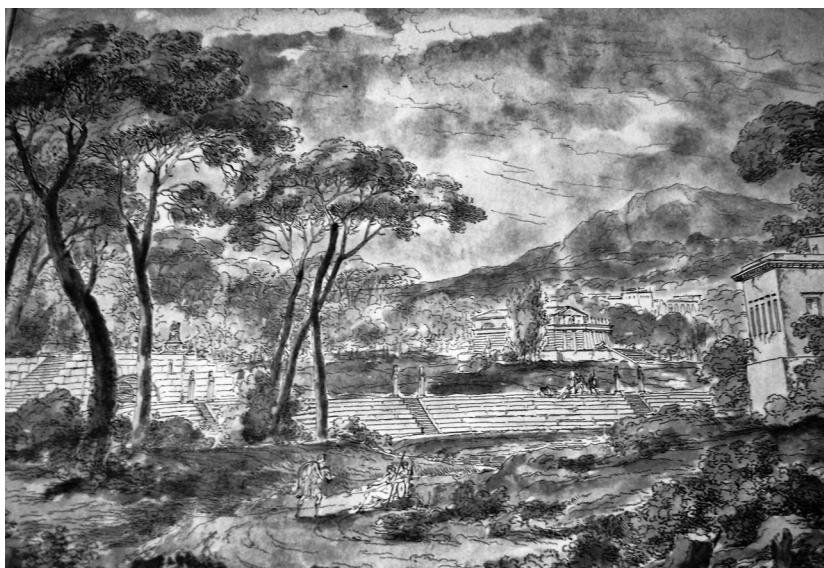


Figure 2. *The construction of imagination: Virtual world of an idealized past*⁴

From the Renaissance onwards, all of these arrangements can be labeled programmatic spaces, carefully molded worlds of their own which served certain purposes, or functionalities. Also in cases where the functionality in question

3 These aspects are dealt with in Bell, D. (2012): 196f. And in general terms, Cooper, D. E. (2012): 22-30

4 Ideal antique landscape, first quarter of 19th century. Lisbon, Livraria Sa da Costa. Photography U. Gehmann.

consisted in creating an impression of the non-functional – an aspect to return to in the contribution about *Explorable Spaces* – through introducing the picturesque and the sublime in the construction of virtual worlds; an approach that latter was both amplified and simplified in the arrangements of Dreamlands.⁵ And the thesis is that many of these aspects reoccurred in a technified and formatted shape in a so-called second modernity, an epoch that leads up to our present time.⁶

Although it had become extremely technified after the era of 19th century world exhibitions (another variant of an early virtual real⁷), the construction of imagination still plays an important role in the recent worlds to be looked at here, in this anthology. Next to questions of the human condition and actual as well as possible new forms of the communal which are inevitably linked to technification. What started at the beginning of a new age in the Renaissance was further perfected and in its totality, led to the conception of idealized worlds, or more precisely, in the double meaning of *ideal* as both an optimal state and an inner image, it led to worlds as ideal artifacts, shaped as programmatic spaces. As a hope and an aspiration at the same time, it went so far that even virtual world maps were created, imagining *another kind* of world – which arrived later, with the hybrid space – a ‘virtual’ one which could supersede, or contrast at least, the real existing world. At the doorway to modernity, at the end of the 18th century, maps of entire utopian terrains were drawn, and they were drawn in such a way that they evoked the impression of embodying real landscapes.⁸ The Humboldt-approach treated in this anthology tackles this issue of combining a scientific approach with one of idealization.

To achieve *naturally looking* world-spaces by means of virtualization is just one strain of a real virtuality to follow. Next to others, it can be seen as a mental premise for realizing virtualities as a forerunner for the things to come, first of all in creating spaces that should be entire worlds of their own. Not “just” imagined ones referring to a physically real (see the contribution on Piranesi), but real

5 Cf. the *Dreamlands*-exposition in Centre Pompidou, 2010. As well as the contribution about consuming cities as one extremely simplified and functionalized outcome, in this anthology, or the contribution about the zoo. To the origins as programmatic spaces in the Renaissance, see Blum, G. (2011): 176ff.

6 Cf. Carrier, M., and Nordmann, A. (2011).

7 Giedion, S. (2007): 169-193. And to 19th century-world exhibitions where a virtualization of space began at large scale, see the notations on them in Benjamin, W. (1983), mainly in vol. 1: 50ff., on Grandville and the world exhibitions.

8 Yvon, M. (1990): 92f.

virtual spaces designed as *complete* worlds. What began with Piccolomini's *Pienza* in the Renaissance, following a line of development Giedion called the organization of external space,⁹ was later perfected (see the contribution on Jefferson). It turned on one hand into its commodified versions¹⁰ like the zoo, the dreamland, or the consuming city, and on the other into worlds consisting of *technogene* spaces which function as real immersive environments,¹¹ in generating a new kind of the natural; see the contribution on the city of *Abadyl*, and comparable approaches towards a new kind of the real as such. Which means that not only a given, still “objective” and “original” reality is transformed but nevertheless kept; but that a new kind of reality is created.

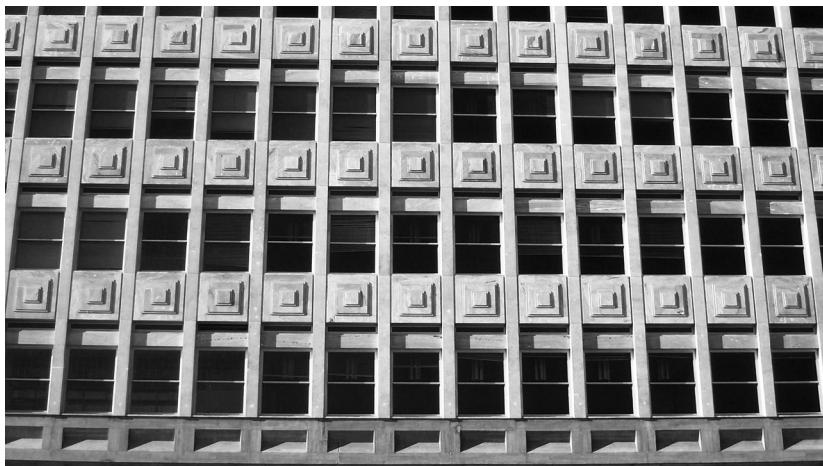


Figure 3. *Apotheosis of the function*.¹²

To create a new real as such is the second strain of a real virtuality to follow, and it had its historical forerunners, too. Shaping worlds as programmatic spaces serving a predefined set of functionalities became one of the predominant tasks in the modern age, concentrating upon the construction of extended layers of infrastructural networks, and upon the complete reconstruction of the inherited pre-modern city. In architecture and urban planning in particular, the mythos

9 Giedion, S. (2007): 106-125. And Pieper, J. (1990): 95-110, to *Pienza* in particular; also Cooper, D. E. (2012): 22f.

10 See the contributions on the zoo, and the consuming city.

11 See the contributions on immersion and identity in virtual worlds, and on a mixed reality. To the notion of a *technogene space* see Oetzel, G. (2012): 73-75

12 Lisbon, Palace of Justice; detail of the main façade. Photography U. Gehmann.

gained ground that *form follows function*, a sacrosanct and therefore ‘true’ tale about a world as it should be. The basic procedure was to develop a model of a world *in spe*, a virtual world, and then to impose that model upon an existing reality – which then became a reality “as it was” because it had been transformed entirely by the respective model. In this way, several distinct models, each of them a cosmos of its own serving certain functionalities (as a programmatic space), could be laid over such a reality as it was: street systems, systems of energy and material flows, of drainage, and so on; the idea of a world as network gained ground because *flow* became the decisive structural determinant in shaping those new worlds, not the (classical) static *structure*. The grid turned into the lead artifact and until today, its twin, *the net*, to a leading metaphor. The structures of gridded networks had to ensure flows, not the static prospects of traditional urban places or other sceneries assigned to a “typical” city scape of a pre-modern age.

Parallel to that, first hybridizations of space appeared, and they did so on a really large scale: the newly created spaces and the kind of spatiality that emerged out of gridded networks had to be camouflaged. As a doorway to an era of functionality, the 19th century had to hide all of its new creations behind the masks of historization, says Giedion, irrespective of the respective domain.¹³ Breweries and other production sites were virtual medieval castles, gas tanks were ornamented with gothic-like filigrees, the entrances of metro stations with floral motives from an *art nouveau* (a commoditized back to nature-symbolism), and so forth. As if there was a fear of what really had happened, namely an encompassing functionalization of the world, organized in networks. After the final downfall of a City Beautiful-movement, one gave up camouflage and the attempts to unify the disparate cosmic closures of different networks within the frames of a Unitary City Ideal,¹⁴ turning to the opposite: to adore the function, first and foremost in its dynamic properties. Next to the commodification and functionalization of real physical space¹⁵ according to the emerged frame conditions of a capitalist society, efficiency of flows and performance became prime matters of importance. Efficiency and performance are deeply functionalist issues, and long-termed solidified structures or cast procedures were not very helpful in this. It was the reign of a *creative destruction*, as Schumpeter coined it, with the (better)

13 Sigfried Giedion on 19th century-architecture, cited in Benjamin, W. (1983), vol. 1: 513

14 About such attempts see Blau, E., and Platzer, M. (1999)

15 Hetherington, K. (2007)

new replacing the (less good) old in a constant manner, and by that, creating new realities all the time.¹⁶ Reality and its spaces had to be adapted to the rules of accelerated improvement (which efficiency does embody, by its very essence), that is: to acceleration. In different respects, it became one of the dominant perceptions of the real,¹⁷ and alongside with it, the dissolution of former unified spaces, especially city space, and of social bodies¹⁸ into dispersed fragments scattered in space took place, connected via fluid and volatile networks. In case of the city, man the cultural animal's genuine place to live (to cite McLuhan whose saying became proverbial), it meant the emergence of a world-wide phenomenon called Splintering Urbanism, accompanied by the emergence of new kinds of spatiality. The grid, the “most democratic” since equally formatting principle of the urban street network, was superseded by blocked roads for gated communities, and infrastructural islands developed – the former space for all of the cultural animals dissolved into a multitude of spaces, affecting even the Internet as the new “most democratic” of these former democratic networks.¹⁹ With the advent of these new networks, a new way of life came into being, to live basically in a mode of *simultaneity*, to participate in an alternating manner in different, and often disconnected communities and spaces. In sum, these are basic frame conditions within which we live, and the perspectives illuminated in this anthology are a part of it, too those which intend to overcome some of its consequences.

Last but not least because in the wake of such events, the new kind of reality introduced in the beginning has been created, or more precisely, is in the process of being *generated* since we don't know the full impact of its outcomes yet.

For an understanding of this new kind of reality settling upon the developments described so far, the notion of space is central. It is a notion to be re-addressed even though it seems to have been treated exhaustively in academic debate. We cannot understand these developments of world-making and -virtualizing without looking at space, without examining the respective concepts about spatiality which simultaneously underlie, enable and sustain these developments. First of all, it holds true with regard to a so-called mixed reality

16 Schumpeter, J. A. (1942): 83

17 From a critical perspective, see Virilio's *dromology* (from Greek *dromos*, run): Virilio, P. (1980)

18 About the social aspect of such a development at the rise of a global capitalism see Breuer, S. (1992). About this aspect at the development's beginning see De Certeau, M. (1984).

19 To these developments see Graham, S., and Marvin, S. (2001): 4f., 97 and 229.

as the latest development, based upon conceptions of hybrid spaces, smart cities, and the like. In terms of Lefebvre, it is about several modes of *producing space*. When we look at modernity and its follower, a so-called second modernity with us as the latter's historical result, first and foremost, it is about abstractions of space and the various formants (in Lefebvre's diction) which led to it,²⁰ and in their wake, about the new reality and hence, the kinds of spatiality to be looked at in this anthology. The most important of these formants turned into *formats* one day, due to the underlying principle of such abstractions, namely to optimize functionality.²¹ What began as a geography-based topological projection of programmatic spaces in the 19th century evolved into a general mode of organization, making functional models of (virtual) worlds become real world(s). Real organizations had to be conceived not as one single network but as layered systems of different networks,²² with the concomitant belief that reality could be condensed into the terms of an organized functionality.



Figure 4. *Production of Space*.²³

20 Lefebvre, H. (2007): 285f. About space as an intrinsic part of the human condition see Lussault, M. (2007).

21 Gehmann, U. (2012).

22 Schüttpelz, E. (2007): 33

23 Lisbon, Western main road into the exhibition area. Photography U. Gehmann.

To recur to Lefebvre's saying, our thesis is that all the productions of space examined in this anthology can be comprehended in their social and life world-implications only if the respective understanding of spatiality underlying them is considered. An understanding formulated in different disciplines and hence, perspectives, technical as well as academic and artistic ones. Since the respective conception of the spatial inevitably influences the diverse models (so our thesis) which led to the respective worlds, and to the attempts to shape realities to be examined here.

Aligned, the notion of space was not always the same, and the different notions did not even resemble each other.²⁴ In the period of time we are regarding here, it too changed as it has become a metaphor for nearly all aspects of science, humanities and arts. In science, it became a common practice to abstract theoretical problems into a spatial representation to make them easier to comprehend. In the humanities, the nature of space has been an extensive subject of research by philosophers and historians,²⁵ and a major goal of the arts was, and still is, to understand the nature of space from a creative and comprehensive point of view. If space and spatial representations are used in almost all professions, then the knowledge gained by all of these professions can be shared utilizing this common metaphor – which may result in a better understanding of the professions themselves, as well as providing a way to see connections between professions where they have been not visible before.

Summarized, it is about spaces as an embodiment of realities – which worlds were actually generated – as well as about spaces as metaphor: which ideas underly the respective construction, or “production” of space, *idea* to be seen in its direct, etymologically founded meaning as an *eidos*, a vision about reality expressed in images. It does not matter if such a reality already exists and gets expressed via vision, for instance in a comic, exaggerating traits of a ‘real’ which are seen as constitutive (see the article about *Gotham City*); or if such a reality is a “visionary” one in that it is a real one to be constructed yet. In both cases, the metaphorical spatial perspectives stand for the world it is all about, from rather concrete cases of a city prospect to quite abstract ones like the ‘space’ of functionalities depicted in a flow chart. Literally, those metaphors as conveyors of

24 For an overview, see Schroer, M. (2006): 29-173

25 An anthology of exemplary texts has been collected by Heuner, U., ed. (2008)

ideas²⁶ show the world as it is – or should be – understood in their basic terms as models shaped in images.²⁷



Figure 5. Modern symbolic space.²⁸

Taking their double nature of representing realities and of being metaphors, spaces are crucial for understanding realities, in peculiar the hybrid ones emerging today. It refers to space as an embodiment of ideas, and its related symbolic properties: the symbol, as the metaphor, is taken in its literal meaning as “standing for” something. This applies particularly to molded spaces as they are *programmatic*, and thus represent specific symbolic artifacts.²⁹ Concerning hybrid realities in particular, such constructions rely upon certain pre-understandings of the spatial which become relevant. Since in case of hybrid realities, models of a world are used to create worlds through virtualizing already existing ones.

26 From the Greek *meta-pherein*, to transpose something from one domain into another, by using (mental or real) images. Cf. Hoffmeister, J. (1955): 402.

27 For a more comprehensive understanding, see Miller, G. A. (1993): 357ff.

28 Rome, EUR: INPS complex. Photography courtesy of U. Gehmann.

29 In terms of concrete architecture, also in space as *organized* design cf. Gagliardi, P. (1992)

Moreover, since these understandings of space embody a *pre*-understanding, they are often used implicitly, without addressing them as what they are: prejudices in literal terms (pre-conceptions), implicit but nevertheless basic assumptions about what ‘space’ and hence, ‘world’ is (or should become), at least in the characteristics constituting what is seen as describing its *relevant* parts.

To question these seemingly self-evident assumptions about relevant worlds and their spaces is one primary goal of our anthology; while as a co-requisite, examples of such spaces will be presented, examples for the historical development sketched in the foregoing. Because taken in their total, those spaces, once realized, make up our world ‘as it is’. Our goal is to provide different viewpoints on the notion of space, while having a thematic focus on the historical shift from space as a metaphor *of* the world to space becoming a metaphor *for* the world, in terms of various models becoming the real. Next to these goals, we will pursue the following questions related to them: How do notions of space influence the spaces we live in, and how is the change of space effecting individual experiences of the world? Which effects do these mental representations have on spaces, through human behavior? How does this affect the notion of virtuality? And how did all of this lead to today’s worlds of a real virtuality?

Next to considerations of a general nature, the essays in this anthology focus upon selected exemplary cases which are literally symbolical, in revealing the general as it unfolds in the specific, i.e. within the terms of actual realizations. By such a combination, it was tried to gain a sense of what is going on with regard to a virtualization of the real, that tendency of prime relevance today.

THE STRUCTURE

In its total, the anthology is divided into 5 chapters which reflect the overall evolutionary move towards the present state. They start after a *Frame Context* (Ulrich Gehmann) which reflects the general conditions within which that move took place, and is in the process of taking place right now, culminating in the appearance of a new ontology, symbolized by an entity labeled Hybrid Space. The aim is to provide an embracing perspective on the issues to come, in the diverse contributions to follow.

Chapter 1: The Beginnings

The Scientific Image in the Anthropocene, by Sabine Wilke

Taking the exemplary case of Alexander von Humboldt, the principles of reconstructing will be shown, at the beginning of what is now called the “Anthropo-

cene,” i.e. a world dominated by our species. How abstraction starts to operate, and how nature – the perceived as well as mythic counterpart of the culture of a rising Anthropocene – is portrayed, just like a paradise already lost and never to be regained (to cite Milton). At the same time, the principles underlying this abstraction will be shown, based on Humboldt’s cartography.

Thomas Jefferson’s University: An Architectural Masque, by David Bell

Taking again an exemplary case, namely that of Jefferson’s design of the University of Virginia, the new world will be shown, molded as a complete artifact trying to incorporate both nature and culture in its concept. It is an attempt to create something like a total piece of art (expressed by the German notion of *Gesamtkunstwerk*), a world as ideal artifact in literal terms. Different spatial tensions are emerging out of this construction, and a dialogue between two classical – and formerly prevailing – conceptions of nature is pointed out, that between a *natura naturans* and a *natura naturata*. The world as a constructed one begins to gain its shape, and by that, it surpasses the attempt of Humboldt.

The Building of a Symbolic Image, by Randolph Langenbach

Based on Piranesi’s drawings of a lost world (the Rome of Antiquity) and his use of perspective with multiple vanishing points in his representation of space, the origins of our modern representation in graphic images and photographs will be discussed. Where are the roots of our spatial perceptions, and on the other hand, how has such a “modern” conceptualization of space changed, in the course of time, and what this does mean for our present-day perceptions of places and spaces?

Chapter 2: The Unfoldings

The World as Grid, by Ulrich Gehmann and Martin Reiche

It will be portrayed how the mindset to create a world as artifact took shape, and what this means for our functionalized worlds today. The aim was to create a world as a network of functionalities, and to do so on a large scale after the onset of modernization during the 19th century. Upon the remnants of this world we live today, a historical substrate of our physical life. We will sketch how it developed, and what happened afterwards.

Gotham City, by Martin Cremers

In this example of a distorted and at the same time clarifying perspective upon the world as grid, the comic city in its reference to a “modern reality” will be shown. Also in a historical perspective, since the images of the urban portrayed

here reflect the world as an artifact to live in after the days of Humboldt. It can be seen as an image of the (urban) world as grid: a dystopian second nature of man where the old Aristotelian concept of nature as *physis* begins to unfold; in unprecedented and quite unplanned ways, opposed to the intention of planners of the world as a grid. Like the old *physis* growing out of itself, dark, chaotic and all-encompassing. But as said, it is a mirror, and a characterizing one.

Good Night, Zoo, by Iru Braverman

This essay offers another facet of the “new nature,” namely the zoo as an instant event of an artificially preserved version of the natural. Through the exemplary presentation of the natural in children’s books, the images of the city, of the natural (exhibited in the zoo), and of the human-nature relationship reveal themselves, together with the spatial worlds that emerge from these images. Children’s books, through their socializing effects, interpellate their readers (and listeners, in the case of the bedtime story) into this new nature: how we have to see the world we are living in (epitomized by the city); and what is about nature, the “old” spatiality, in this respect (epitomized by the zoo). In conveying values central to our recent culture, these books adopt the young as prospective adults to the spaces they have to live in later, next to romanticizing nature, that paradise lost. They show the virtualization of real space, taking place yet in a still “physical” world.

Chapter 3: Virtualization Gains Momentum

A Paradise of Decorated Sheds, by Steffen Krämer

Here, an everyday virtual world is presented, that of so-called consuming cities. Settling upon a construction of pseudo-historical urban spaces, a world completely functionalized is the result, serving just one function: to consume. Its virtual urban character serves a real economic need, namely to trigger and to sustain todays’ core function of economy, the constant consumption of things needed to sustain its growth. In other words, a very real systemic base is wrapped in its concordant disguise, the consuming city. This is an extreme case of virtualization inside the “old” world of physical space, and at the same time an epitome for our todays’ *raison d’ etre*: to be consumers, ranging from such cities of consumption to the app in the “new” digital world. Such paradises reveal how our today’s life-worlds are functionalized to the bone, and by that, embody virtual worlds which became real ones.

The Man in the Paper-made Folding Boat, by Chris Gerbing

The internationalization of cultural expression is illuminated, an internationalization that at the same time leads to the erasing of cultural differences. Shown by the case example of artists' movies, it is shown how values and spatial perceptions of an essentially Western culture spread out world-wide, leading to a universal language of "how to see things properly." This effect can be interpreted as a specific case of how to equalize local cultural differences which formerly existed, and thus, contributing to a destruction of the *cultural* space on a global scale.

The Community Question, by Manfred Negele

Taking the aspects addressed so far, the question arises what community meanwhile means. The "old" idea of our cultural sphere was that community, by its essence, is bound to the urban environment, or in other words, that it is the urban space which is the proper environment to live for man the cultural animal. But what happens if not only this formerly urban space is fragmented and thereby destroyed, but also the idea of a *communitas* as such? Which new perspectives are emerging, perspectives more adapted to our present state of being, namely to live inside the terms of mixed realities, in fact? More specific, the question arises if assumptions about a *conditio humana* which were taken for granted up to now have to be doubted – since they are based on the traditional conception of space as unity, and hence, of world as unity (see the beginning, on the "frame" context). Is such a traditional concept outdated, and what this could mean for man the cultural animal?

Real Virtuality, by Gerd Stern

This essay reflects the beginnings of the recent networked society which triggered the phenomena described in the foregoing essay, together with the hopes and aspirations which accompanied the announced new age of those times. A new age that should liberate man, heading towards a real democracy of an unlimited and individual communication. It was the time when the metaphor of a global village came up, and when the essence of the human condition was seen in communication. Shown by selected artist movements of those days as contemporary witnesses, these hopes and aspirations of a new Renaissance are portrayed in a vivid manner, allowing us to gain a sense of what really happened, and which of these aspirations are still alive today, irrespective of their different shape.

The Ambiguous Construction of Place and Space, by Katerina Diamantaki

In this article, the community-question is deepened. With a look at emergent digital technologies, the old issue of man the communal animal located in urban spaces gains a new and additional drive. Since the digital media emerging nowadays remediate our conceptions and practices of space and place, as well as our understanding of proximity, identity, boundedness, continuity and duration. The current situation can be characterized as one of an ambiguous mix of space and place – i.e. these traditional pillars of our very self-understanding as human beings have to be reexamined – and related, of a mix between connectivity and disconnection, concreteness and abstraction. It is about symbolic spaces, place identity and the aligned larger concept of Self. What do these technologies (being more than just technology) and the mixtures triggered by them actually mean for a *conditio humana*? Does there a new understanding of the human condition come up, and in this respect, what is about different digital environments in terms of how they reflect practices of place-making? And first and foremost, what is about their potential to generate new *kinds* of spaces and thus, humans?

The Destruction of Space by Augmentation, by Martin Reiche

This article focuses upon functionalization and hybridization in their manifestations as artifacts and implemented processes nowadays. It will deal with the foundations and implications of augmentation as a technique capable of overriding and redefining the meaning of real world objects in virtual worlds, finally leading to a destruction of the anthropologically relevant space. The described transition marks the next evolutionary stage after the *world as grid* portrayed above, and it settles upon the latest achievements of spatial mixtures. Having the perspective on the chapter to follow, what are the major tendencies of both destruction and simultaneous re-creation today, and how they have unfolded? What this does mean for our traditional understanding of space?

Chapter 4: Facets of Acceleration in Hybrid Spaces*Mixed Reality*, by Panagiotis D. Ritsos

To go beyond the world as a grid and to arrive at the worlds described by Diamantaki and Reiche, both a certain mindset and methodology to achieve this are necessary. It is about issues of interactive computer-generated objects which co-exist in space. With the respective techniques, it is like Heidegger's saying about technique: that its nature is more than (just) technical. Since the techniques treated in Ritsos' contribution do not only enable the construction of a mixed reality of new dimensions (compared to the realities treated so far), but are *altering* the

notion of space itself. By their appliance, space transforms from something tangible and concrete into a constructed entity that is something intangible, synthetic but nonetheless existing.

Using Spatial Cognition to Improve Knowledge Construction, by Carl H. Smith and Pierre-Francois Gerard

For a mindset to construct new spaces, knowledge can also be constructed. In other words, it is about new forms of knowing. The question is how knowledge can be organized and engineered, by using space and visualization. The aim is to achieve not just a spatial, but a cognitive enhancement by using virtual architectural structures. Despite the new means and methods applied nowadays, there is some strain of continuity (which makes the issue particularly interesting), since such usage stands in a long occidental tradition of an *ars memoriae*. Now, this tradition is ‘enhanced’ and augmented, brought about by new technological possibilities expanding the practice of spatial cognition in both virtual and physical environments. In today’s context of a technological and visual culture, how do we use this potential of spatial cognition? Can we overcome cognitive limits by combining the ancient pedagogies of an *ars memoriae* with recent technologies? And what this does mean for learning, and for reasoning itself?

Creating and Retrieving Knowledge in 3D Virtual Worlds, by Mikhail Fominykh
In this case example for applying the new kind of space in different domains, the essay explores the utilization of space for conveying understanding, expressing and sharing ideas. Its focus is on the interplay between learning and constructing the learning environment itself. It is a consequent application of a constructivist mindset of how to create worlds, since the environment is no longer a given entity but a self-generated continuum depending on its “users.” The contribution relates to Braverman’s article, where the connection between learning and socialization has been addressed. But it goes one step further regarding the immersive character of learning and hence, the change of world perception and of actual world-creation.

Identity in Virtual Worlds, by Lyzgeo M. Koshy, Kristoffer Getchell, Marc Conrad, Tim French

Prolonging the line of thought so far, this article will deal with the question of identity in virtual worlds. It will describe means of borrowing, fabricating and inventing identity in these worlds as a result of goal-orientation, bringing the above mentioned mindset of functionalization to its logical end. And it will ex-

amine the perception of the notion of identity and freedom of the user. All this will be exemplified in one milestone of a virtual world, namely Second Life.

Above that, it is about the dynamics of identity imposed, and triggered by virtual worlds after Second Life; and related, questions of behavioral practice since certain behaviors in the virtual world create a positive and negative impact in the former “real,” i.e. physical world. More specific, it is about the feedback loops between virtual and real world, how they are understood and exploited in real world activities, and how this impacts and shapes our real world societies.

Beyond the Visible Autonomy, by Erhan Öze

After having discussed the technical possibilities, chances and drawbacks of the ongoing functionalization, this article deals with the aspect of autonomy of these systems, referring to the notion of the cognitive mind. The political nature of this autonomy as well as its implication for spatial perception will be of special interest.

Chapter 5: Beyond Acceleration

“Unheimlich”: The Uncanny and Narrative Space in Digital Arts, by Martin Rieser

Another aspect of these kinds of worlds is what Freud called the “uncanny.” They may be immersive, by that convincing, multi-faceted and “user friendly,” but it seems that always, a quite unfriendly touch remains, related to their lack of actual tangibility. At the same time, narrative spaces are opened which offer the possibility of escaping the now prevailing functionalism of all these worlds, and by that, the possibility of real individual freedom.

Against the Self-evident, by Michael Johansson

With the virtual city of *Abadyl*, new possibilities of real individual expression (besides functionalism) and freedom are further explored. In prolonging Freud, an exploration can take place of what Johansson calls the “unknown unknown.” In *Abadyl*, the notions guiding our basic conceptions of both the human condition (*conditio humana*) and of the urban tied to it can be explored in new ways. By that, and by taking into account the above findings, an alternative look upon the future is opened up, a look that could supersede functionalism.

Explorable Spaces, by Martin Reiche and Ulrich Gehmann

To conclude the anthology and to give a contraposition to the ideas in chapter 4, the understanding of the need for explorable spaces shall be established, and

examples of such attempts to create these spaces as virtual worlds are shown. Examining its properties in comparison to traditional functionalized spaces, a generalized model for explorable spaces is presented. Although the idea of explorable spaces had its history too, recent explorable spaces, by being genuinely different kinds of spaces, might serve as a way out of the ongoing functionalization described in this book.

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