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Passim

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**Visual Reconceptualisation
Of Geopolitical Arrangements
Under The Postdigital Paradigm**

The underlying idea, that carries this thesis, is that humanities like media and cultural studies are concerned with socially relevant concepts and discourses, albeit these humanistic disciplines are often bound to textual analyses of their topics and, hence, remain quite abstract.

Therefore, the approach is to connect elements of design sciences and cultural theories. In detail, interest is primarily focused on the discourse about space as it covers the crucial social and political occurrences of the 21st century.

Thus, geopolitical arrangements are to be visualised by a dialectical interaction of a theoretical-conceptual analysis as well as a practice-reflecting design. A critical perception is foremost and pervades the entire thesis from conceptual theories to the visual artefacts.

Structure
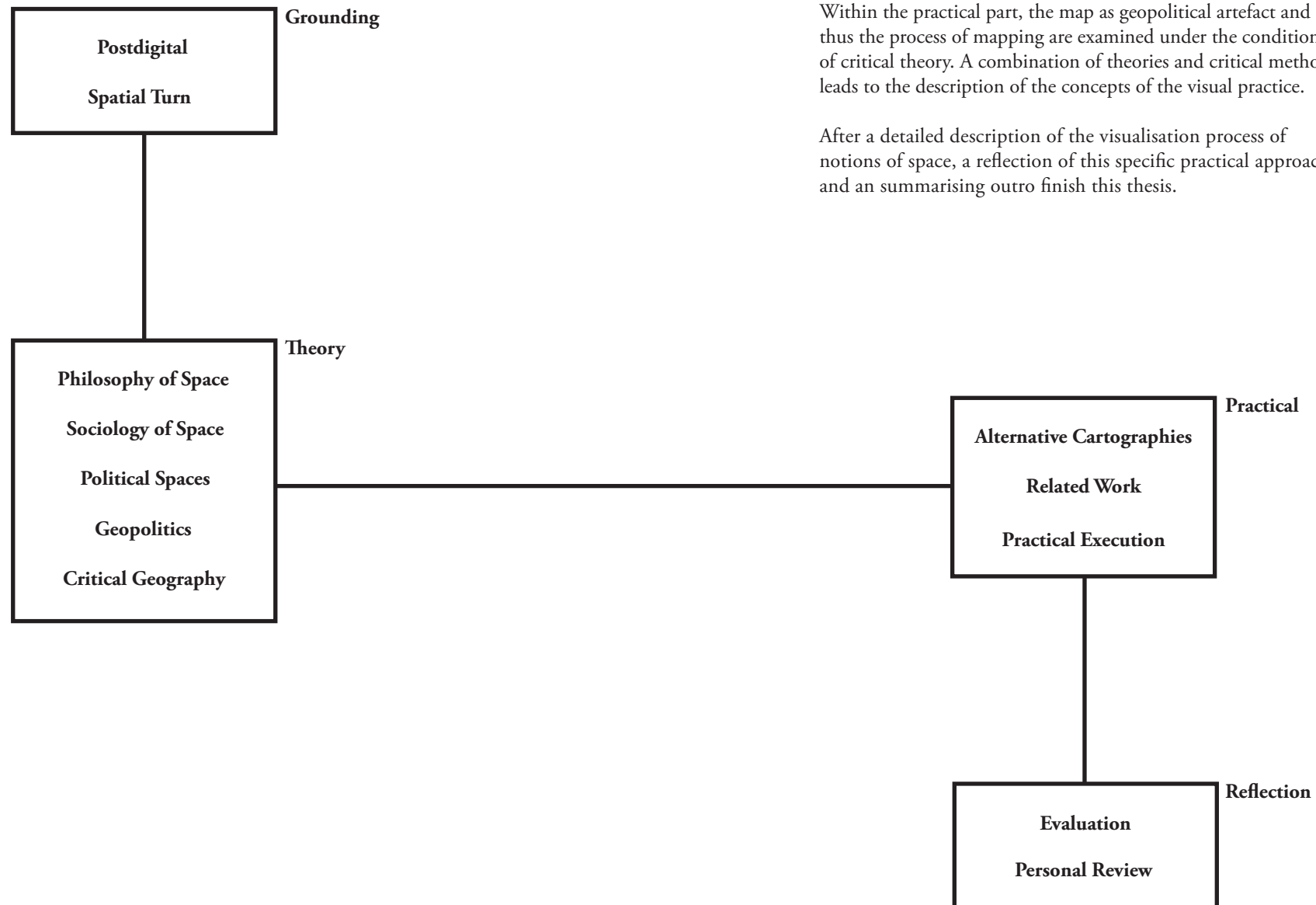
The structure of this thesis follows a systematic process. Although theory and practice are strongly interlinked, the discourse is meaningful dissolved. After an introduction of the grounding theories of *postdigital* and *spatial turn*, a theoretical chapter introduces the basic notions of space, their application in humanities and eventually the reference of the notions of space to political spaces.

Within the practical part, the map as geopolitical artefact and thus the process of mapping are examined under the conditions of critical theory. A combination of theories and critical methods leads to the description of the concepts of the visual practice.

After a detailed description of the visualisation process of notions of space, a reflection of this specific practical approach and an summarising outro finish this thesis.

Grounding

Postdigital

Spatial Turn

Theory

Philosophy of Space

Sociology of Space

Political Spaces

Geopolitics

Critical Geography

Practical

Alternative Cartographies

Related Work

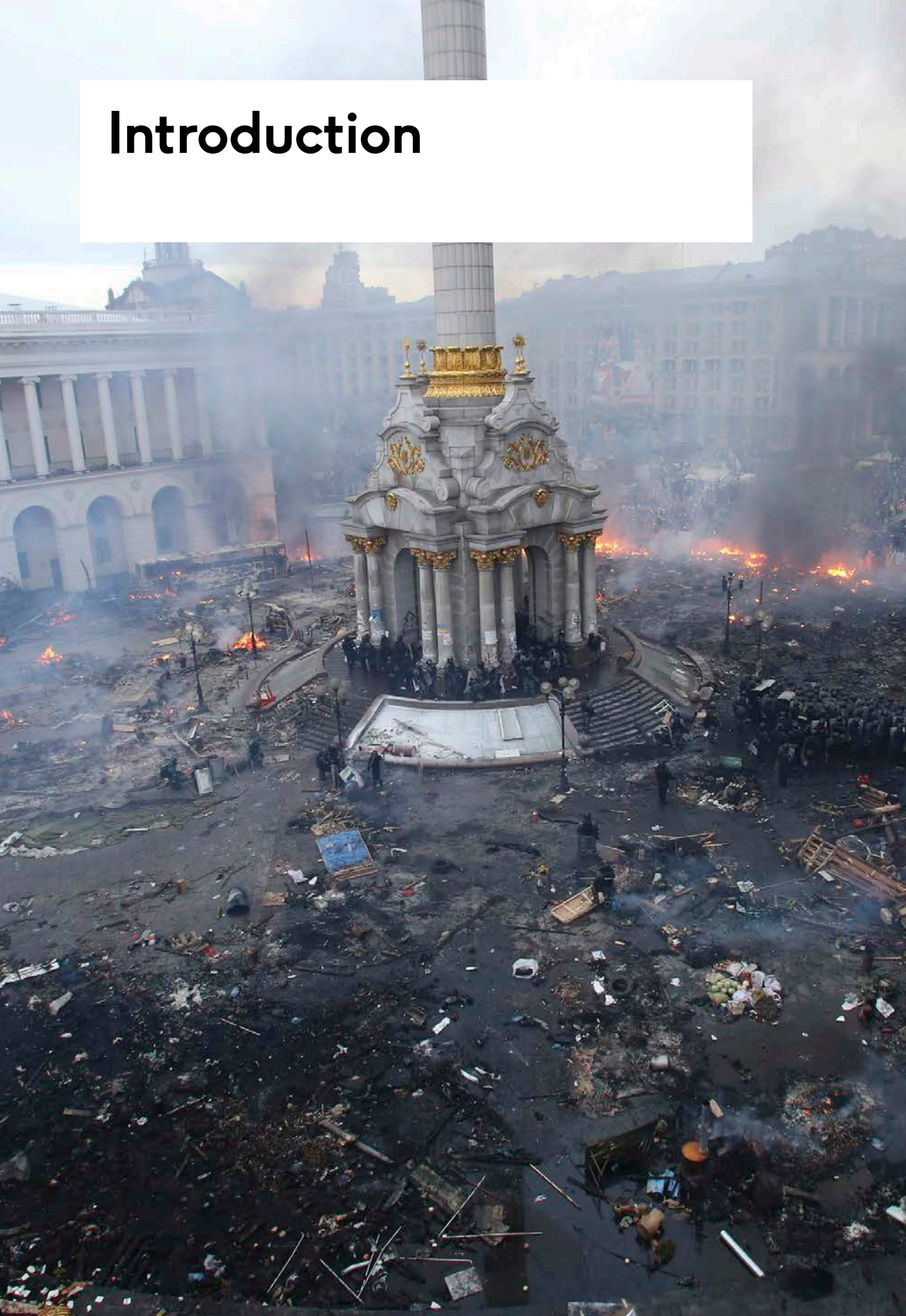Practical Execution

Reflection

Evaluation

Personal Review

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Introduction

General

Space is back. After a Nazi usurpation of the academic spatial discourse, space was then entirely discharged by the media theories of the cyberspace in the 1990s. Therefore, Baudrillard shortly pronounced *the end of space*.[1] Ever since *9/11* it has been shown that the internet is, however, not the hoped for peacemaker and notorious threats could even take on a new global scale through the globalised information and communication structures. The Ukraine crisis, the refugee policy at the external EU-frontiers and most recently the crisis in Greece have a characterising influence on a complex 21st century and all of them are modern varieties of spatial conflicts. What happened in the last years can at least be analysed by spatial categories. The new global geopolitical conflicts are partly the result of a clash of differing notions of space.

"The society is the constant crisis." – NIKLAS LUHMANN [2]

In the case of the recent waves of refugees, one can find the claim of the European Union as a so called supranational state. A huge absolute container, that saves the European values and isolates them from outside, if necessary also through the use of violence. The refugees on the other hand flee in the hope of a global citizenship from their own container-like national state, but they encounter only the wiry border of the big container Europe. Even if they could possibly enter the seemingly safe state, this refugees are then confronted with new invisible borders in turn. In form of social, cultural and political limitations, either by a merciless asylum policy or by right-wing populist movements, like recently *PEGIDA* in Germany, new borders occur. Eventually, space is not dead, rather, it is not directly tangible anymore, more dynamic and diverse than before.

Fi.1   Ukraine Crisis, Kiev, January 2015.
[1]   Baudrillard, *Subjekt und Objekt: Fraktal*, 1986, P.5.
[2]   Luhmann, *Die Gesellschaft der Gesellschaft*, 1997.

Therefore, the motivation for this thesis lies in the want to develop a thinking of spatial categories, which allows to understand these recent geopolitical events. The original idea regarding this problem addressed a rather superficial relation of culture and (political) identity. A position that is represented by instances like the popular feuilleton. It was helpful to identify at least some core problems of the described political affairs. However, a fundamental element was missing for a substantial research.

Eventually, the discipline of cultural studies offered an approach to fill this gap. Culture studies as a practice that examines how social and political identity is produced as an expression of power in the field of culture. In particular, the critical studies helped to challenge traditional ways of thinking and became a useful approach to analyse predefined presupposition in a technology-dominated world.[3] Therefore, culture studies helped to deconstruct predetermined notions of space and also to develop alternative perceptions within a discourse of space.
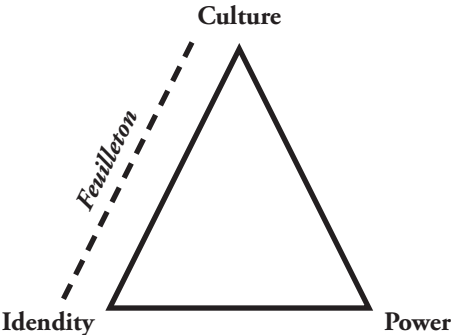
This thesis starts with a grounding description of the current situation within humanities. Therefore, the two notions of *postditigal* and *spatial turn* do not only represent formative discourses, but additionally the combination of both leads to the unique perspective of this thesis of combining questions of digitality and spatiality. Eventually, by applying an information-architectural approach this thesis gainfully structures the complex discourse on space.

In detail, the theoretical part of this thesis compiles a taxonomy of four notions of spaces in humanities. Eventually, this quadripartite taxonomy structures the whole thesis.
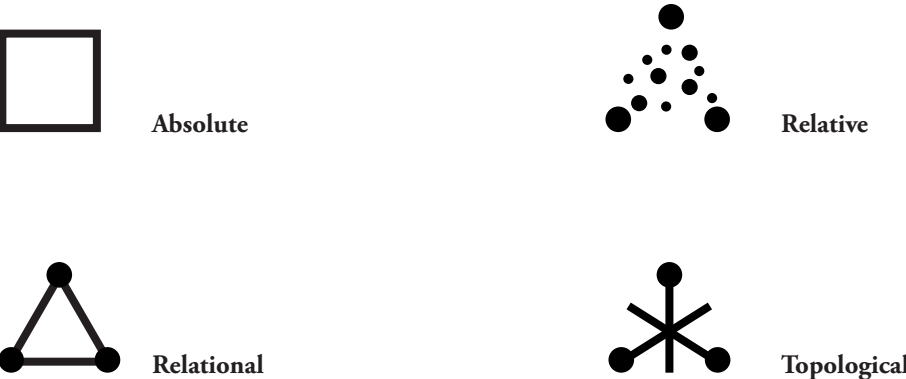
Beginning with the grounding physic-philosophical basics to more recent sociological theories, which developed out of the these basics, the taxonomy is consolidated. Since this theoretical discourse of spatial sciences remains very abstract, the focus of this thesis is on a concrete application of the models of space to a geopolitical context. After a categorisation of the term geopolitics, this thesis especially refers to critical geography, that examines the discipline of geography from a neo-Marxist perspective to political dispositifs of power in the tradition of Frankfurt School. In the process, particularly the map as visual artefact and medium of geopolitics is interpreted as instrument of power. Despite their representative functions, maps always constitute power.

This characteristic of maps is examined by the discipline of critical cartography. Next to theoretical observations, also artistic interventions, so called counter-mappings, are developed within this discipline. In contrast to traditional representations of reality, these mappings try to question a seeming objectivity and try to map a subjective world of new structures and networks of modernity. Furthermore, this thesis gives a review of contemporary artistic involvement of alternative cartographies. In particular, mapping is understood as practice that works similar to a *to design* and therefore has a substantially impact on the practical execution of this thesis.

Fi.2   Cultural Studies Graph.
[3]   Bardzell, *What is »Critical« about Critical Design?,* 2013.

Fi.3   Taxonomy – Notions of Spaces.

Since humanistic discourses are mostly bound to a textual form of discussion, most of theories, which could be helpfully applied to recent societal occurrences, remain quite abstract and limited to a small target group. Thus, the insights and theories of the theoretical chapters are applied in a geopolitical context within the practical part of this thesis. Eventually, this thesis uses approaches of the discipline of design sciences to structure the discourse on space and in the end the method of visualisation to shift the discussion to another level, following Ben Shneiderman:

> *"The purpose of visualisations are insights, not images."*
> – BEN SHNEIDERMAN [4]

In particular, data visualisations are created through the method of mapping. The data foundation is provided by the cooperation partner of the Heidelberg Institute for International Conflict Research (HIIK), which supplies a dataset of all conflicts of the year 2013 and therefore enables a detailed spatial analyses of actors and consequences. The four models of space shall be visualised with the help of the data, so that the discourse on space with its different notions of spaces becomes more tangible and maybe is even able to essentially enrich the discussion. At the same time the weaknesses of the method of mapping, maps in general as well as the design practice of data visualisation are critically questioned. Thus, this thesis follows the guiding principle of the applied media studies of reflecting media through media.

Therefore, fundamental questions of this thesis are, for example, what images generally can achieve beyond a generic solutionism. Hence, visualisations not seen as simplification and explanation of problems, but as a valuable visual layer of discussions. Therefore, a self-consciousness practical execution is the result of the critical examination of spatial theories.

Altogether, this thesis is an attempt to connect both worlds of design and cultural theory by perceiving design as a binding element. The discourse on space is considered as theoretical base, which uses visual expression of mapping to visualise this discourse by applying critical visualisations. Therefore, a postmodern diversity and multitude of perspectives are paramount. This thesis is ended by an evaluation of the approach by theorists as well as a designer and a general summary of further work and an outlook.

In the further introductory section, the initial ideas are related to recent movements within humanities which also actively influenced this work. Consequently, this thesis is based on two theoretical pillars of the two arguable terms of *postdigital* and *spatial turn*. Both share a relatively controversial attitude, which is consciously used by this thesis as field of tension and implies that a modern discourse of space could be developed out of it.

[4]   Shneiderman, *Den Blick zum Denken nutzen*, 1999.

Postdigital [...] Sucks

As mentioned in the previous section, the contextual frame for this research is the postdigital paradigm. The involved ideas work like a breeding ground for the conceptional work. This justifies the particular approach towards this topic. One could write a whole thesis about this quite new and very discussed term, but the focus is set in this way, that one is able to explain why it is a controversy that offers a productive perspective on the awareness of space.

To begin with, the phrase of postdigital is controversial. The participants of the workshop *Post-digital Research* organised by Aarhus University and *transmediale* in 2014 concluded that the expression basically sucks but is useful.[5] In an age of a domination of digital technology, immaterial startups, and the NSA postdigital surely sounds a bit ignorant, but it is also not covered by a Thoreauvian escapism and neo-analog tendencies like the popularisation of vinyl, film labs and other craftsmanships. It only emerges at second glance that the difference between digital and analog isn't really reasonable. This is where the terminology becomes meaningful and deeper research becomes indispensable.

Beginning with the expression itself, two contrary components, *post* and *digital*, are obvious. Before dealing with the combined phrase and his meanings, we have to understand the particular elements. The prefix *post* has a long history and has always been a little bit problematic. Coming from the Latin language it means something like *after* in a spatial as well as temporal sense, so at a first glance unproblematic. But differences occur in combination with notions, when it claims in a misinterpreted way a certain period or perception as over. For example, *postmodernism,* which describes not really a designated period of time after or the end of *modernity* in a Hegelian historico-philosophical sense, but a change into a ongoing critical thinking regarding basic assumptions and showing alternatives. Certainly, it states another addition to a misleading noun prefixed with *post* as Geoff Cox, who also contributed to the *Post-digital Research*, states.[6]

Similar linguistic inaccuracy patterns can be found regarding the term *digital*. So the term of *digital* highly relates to *postdigital*, when one assumes something to be *over* or to be criticised one has to understand what was *before* and was good and bad about it, which leads us to the crucial question what digital actually is. According to Florian Kramer, who also contributed to *Post-digital research*, digital is a popular cultural concept, rather than a media theoretical, that falsely calls everything *digital* that is somehow linked to or has a material interface with digital information processing.[7] The original description of digital in contrast declares a property of representing values as discrete numbers, 0 and 1, rather than the analog a continuous spectrum[8], so *digital* in the common sense is just a simplification for computer related items. In this case digitality works as a myth in the sense of of Roland Barthes' intervention strategy introduced in *Mythologies*.[9]

So postdigital firstly means to get over certain blue high-tech association, as pictured by the Google image search results on *digital*. In this sense Kim Cascone, who coined the word in 2000, wrote in his discourse *The Aesthetics of Failure: Post-Digital Tendencies in Contemporary Computer Music*[10] about Glitch music, where it is obligatory to make use of static noises and other sonic artefacts. So within this *aesthetic of failure* these musicians are really aware of their heavy technology based circumstances and try consciously to play with and break through given boundaries. A related concept that tries to pool thoughts like the Glitch music in general arts is the broad term of the *New Aesthetic* coined by James Bridle[11]. In his *tumblr* mood board he shows related work of artists, that deal with the question of how technology actively shapes our way of perception in the real world as well as the digital world. A prominent example is Aram Bartholl's installation *Map*. In summary, postdigital should be thought as a critique of the digital with strategies that make computer visible and audible. Being ruled by the myth of digitality must be conquered by disclosing the technical as well as the discursive and aesthetic-conceptual processes, as Jan Distelmeyer states in the anthology *War postdigital besser?*. To apply this approach to the notion of space, one has to go deeper into the initial idea of postdigital.

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[5]   Cramer et al., *Post-Digital-Research*, 2014.
[6]   Ibid.

[7]   Cramer, *Post-Digital Media, Post-Digital Research*, 2014.
[8]   *Duden*, German dictionary.
[9]   Barthes, *Mythologies*, 1957.
[10]   Cascone, *The Aesthetics of Failure: ‚Post-Digital‘ Tendencies in Contemporary Computer Music*, 2000.
[11]   Bridle, *The New Aesthetic*, 2011.

Fi.4 *digital* is blue.
Fi.5 Bartholl, Map, Installation, 2006.

Thus, the original concept of postdigital is considered, which originally appeared in an article in the *WIRED* magazine in 1998, where Nicholas Negroponte, the co-founder of the MIT Media Lab, wrote a column called *Beyond Digital*.[12] "*The digital revolution is over.*"[13], a quote from the column leads to a main thought in his writing, that the digitalisation of our society and in general living in an information age has consequences. In the following he describes, that in fact we are living in a digital age, but it has become kind of natural and services like the World Wide Web are now utilities, like water and air, and even computers will get boring in a certain time or becoming an invisible part of our everyday life. "*We'll live in them, wear them, even eat them. A computer a day will keep the doctor away.*"[14] He follows that really surprising changes won't happen in a technological scope, but within our human way of life. So to get concrete, he mentions five so called remaining forces of change: global imperatives, size polarities, redefined time, egalitarian energy, and meaningless territory. Simplified into the known "*Being global, Being big and small, Being prime, Being equal, Being unterritorial*".[15] With these five topics, he describes his personal notion of the future regarding a society with an established digital infrastructure.

After the grounding the basic idea of the postdigital phrase in Negroponte's text, we have to notice that the column is now seventeen years old and of course the circumstances developed over time and the idea felt behind in a sense. Nevertheless, his intonation was quite affirmative to a digital world and contributed to a certain thinking of general optimisation. Next to other pop-cultural reactions of a seeming *digitalisation* within the *New wave* or *Post-punk* movements of the 1980s, for example Joy Division's *Digital* in the UK and Der Plan's *Gummitwist* in the FRG, also the following generation of these movements, like the German *Hamburger Schule* band Tocotronic with their song *Digital ist besser* from 1995, formulated their critique of this kind of digital positivism, which offers a possibility to discuss two of his concepts, which also represent main touching points for this thesis project.

1. Being global
Next to the ideas relating to time, economy, and energy, Negroponte claims at first a reshaping in global awareness. He describes a scenario in which communities that are formed by ideas are as strong as the ones formed by physical proximity.

[12-15] Negroponte, *Beyond Digital*, 1998.

"Kids will not know the meaning of nationalism."
– NICHOLAS NEGROPONTE [16]

He says that within digital infrastructures like the World Wide Web, we are not bound anymore to regional influences. He combines ideas of creating own communities by same interests beyond nationalism and pushing society further towards a global citizenship.

2. Being unterritorial
The second idea is the highly related idea of meaningless territory. When a society is defining itself without framing of political instances, it's also independent from geographical borders, he claims. Negroponte calls for a new definition of space, especially with the notion of cyberspace, and a new understanding of how social and digital relations work.

"We'll be drawing our lines in cyberspace, not in the sand. Already today, belonging to a digital culture binds people more strongly than the territorial adhesives of geography - if all parties are truly digital."
– NICHOLAS NEGROPONTE [17]

Both concepts prove his positivistic approach towards complete dissolution into the digital, which is in strong contrast to critical perspective of postdigital. He surely is a representer of the 1990s media theory of Modernity, including for example Marshall McLuhan with his *Global Village* [18], that expect the real space either to be compressed (*time-space compression*) or spatial constructs, like nation states, to be deterritorialised by the organised simultaneity of virtual space, the cyberspace. When we have a look at recent political events, especially after *9/11*, we see completely different spatial developments. For example the recent Ukraine crisis is a whole conflict that is based on spatial interests.

We need a conceptualisation of postdigital that goes beyond a positivistic and technocratic approach to one that implies critical ideas, which reveal hidden power structures in apparently neutral digital infrastructures.

[16]   Negroponte, *Beyond Digital*, 1998.
[17]   Ibid.
[18]   McLuhan, *Gutenberg Galaxis,* 1962.

So additionally to the stated critique of digitality, I'd like to complete the term with skepticism about a internet centric world view. Such positions distract us from seeing the real structures, that just uses the internet as another layer. We have to understand, that our *digital society* isn't another space next to our normal life. Instead the internet represents a new layer that has to deal with same (capitalistic) processes as in the world so far.

A publicly active actor in preventing such internet centric perceptions is Evgeny Morozov. As the author of the book *The Net Delusion* [19], he actively tries to criticise the rising solutionism of the digital industries and seeming neutrality of the internet. With his post-internet approach he is a radical but important voice of a critical postdigital notion.

In particular, he points out that *the internet* isn't a social construct, that doesn't offer solutions or bear responsibility for social decline per se, but often serves interests of those, who use it as analytical category:

"Efficiency is no moral criteria."
– EVGENY MOROZOV [20]

Morozov is pursuing his Ph.D. in history of science, consequentially he also retraced the development of the internet and for him it was never about democracy or access. Companies had defined how the digital infrastructure should look like from an intellectual and technological perspective. The publicity accepted this and now has to bear the consequences. Parts of the infrastructure could be rearranged, but to achieve this the whole idea of the internet has to be destabilised. So the internet is not really an encapsulated bubble with its own regularity, which also has aftereffects on notion of spatiality for Morozov:

"There is no virtual space, there is no cyberspace. There is only a world. Whether it is good or bad, that is the world we are living and where our laws apply."
- EVGENY MOROZOV [21]

[19-21] Morozov, *The Net Delusion*, 2011.

To sum up, this chapter framed the terminology of postdigital within two concepts. Firstly, a critique of digitality, which unmasked the digital as a cultural concept. In principle, there is nothing as digital media, basically everything is analog from a physical perspective. In the position of postdigital the differentiation between old and new media becomes meaningless, which describes Lev Manovich as *post media.*[22] Both remain as technologies of mutual stabilization and destabilisation, as Floran Cramer states:

> *"The everyday colloquial meaning of »digital« is metonymical: anything connected to computational electronic devices, even if it's a tripod. It is a notion fostered and solidified last not least by marketing and product advertising. Some eyebrows should thus be raised when the humanities simply take it over, in the concept of »digital humanities« for example, without any question asked. In that sense, »post-digital« art, design and media works – whether or not they actually should be called post-digital – often make up for lacking critical reflection of digitality."*
> — FLORIAN CRAMER[23]

So the question of whether or not something is digital becomes obsolete. We could ask ourselves, if we ever have been digital.

Secondly, the postdigital notion was expanded by the critique of internet-centrism, which helped to access a spatial perspective. So the world-spanning communication infrastructure seems to make distances disappear. However, if we look beyond the technology, we'll find (capitalistic) ideologies, (commercial) corporate groups and people of the real world – another demystification.

In conclusion, the expanded notion of postdigital, is despite the known linguistic problems a promising starting point to connect spatial questioning with recent cultural, social, and political changes caused by new organisational structures and communications technologies, as Manuell Castells demonstrates with his concept of the network society.[24]
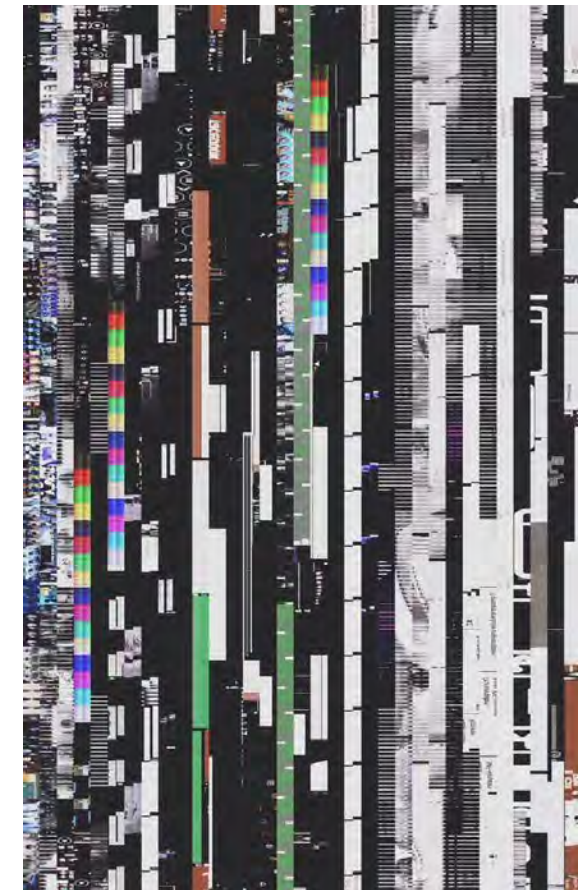
Regarding this thesis, the term postdigital is considered as a paradigm. Following the Italian philosopher Giorgio Agamben, paradigms are more likely tools, rather than determining subjects.[25] It can help to get insights about the consequences of the information age. After a period of digital revolution there is maybe now a chance for the computer-literated society to get beyond technological phantasm and to grasp the underlying tendencies.

In the context of spatiality, the view of postdigital also supports to discuss new spatial conceptions. Although the virtual space itself is negated, the internet helps to identify space as a cultural entity. With the concept of the spatial turn the next chapter will introduce the second pillar for the concept of this thesis, which holds a similar presence regarding potentials and weaknesses.

Fi.6 Glitch during the writing process of this thesis.

[22] Manovich, *Post-media Aesthetics,* 2001.
[23] Cramer*, Post-Digital Media, Post-Digital Research, 2014.*
[24] Castells, *The Rise of the Network Society*, 1996.

[25] Agamben, *What is a Paradigm*, 2002.

Space Disappears

A common proposition within discussions on globalisation implies space not to be an issue. Often bound to the development of transport and communication media, deterritorialisation has always been a specious side effect. For example already Heinrich Heine concluded the death of space and the continuance of time when faced with the spreading of the railway traffic.[26] But there also many others recent farewells, like: *death of distance*[27], *end of geography*[28], *end of space*[29], and the *space-time compression*[30], which was already mentioned in the context of postdigital and consequently McLuhan also stated the *suspension of space*.[31]

However, the idea of the declining power of space is not uniquely one of media theory, but theories of modernity in general. As Markus Schroer deduces, it is a general assumption of modernisation processes that time surpasses space.[32] If the fundamental experience of modernity is constructed by acceleration, then everything which is not able to adapt falls victim to the speed of modern life. If time is a concept of modernity, then space is highly related to postmodern theories. For example Marc Augé states, that the relation to space *gained the mastery*.[33] Foucault announced in his fundamental lecture *Of Other Spaces* the *epoch of space*, which means an epoch of simultaneity and coexistence[34]:

> "The great obsession of the nineteenth century was, as we know, history [...] The present epoch will perhaps be above all the epoch of space. We are in the epoch of simultaneity: we are in the epoch of juxtaposition, the epoch of the near and far, of the side-by-side, of the dispersed. We are at a moment, I believe, when our experience of the world is less that of a long life developing through time than that of a network that connects points and intersects with its own skein."
> – MICHEL FOUCAULT[35]

26   Heine, *Lutetia*, 1854, P.449.
27   Cairncross, *Death of Distance*, 2001.
28   O'Brien, *Global Financial Integration*, 1992.
29   Baudrillard, *Subjekt und Objekt: Fraktal*, 1986, P.5.
30   Harvey, *The Condition of Postmodernity*, 1991, P.240ff.
31   McLuhan, *Understanding Media*, 1964, P.150.
32   Schroer, Bringing Space Back In, 2008.
33   Augé, *Die Sinnkrise der Gegenwart*, P.34.
34-35 Foucault, *Of Other Spaces: Utopias and Heterotopias*, 1984.

Also Latour concludes: "*Space superseded time as fundamental organising principle.*"[36] Eventually, Manuell Castells explains: "*unlike most classical social theories, which assume the domination of space by time, I propose the hypothesis that space organises time in the network society.*"[37]

Summarising, the term of spatial turn provides a concept that proclaims a shift to an emphasis on place in humanities since the 1980s.[38] A change of paradigms exists insofar as not only temporality represents the focus of cultural studies, as it was case in modernity, but now spatiality becomes an equal analytical category. That is also why the spatial turn can be called a *child of postmodernity*.[39] Contrary to modern positions, the reversed idea of a disappearing space doesn't fit here. It is more like an everlasting replacement. The dominance of the space in pre-modern society is followed by the dominance of time in modern society, which now seemingly develops into the renewed dominance of the space[40] – also known as the *spatialisation of the temporal*[41], as Frederic Jameson sums it up.

This is also where the original idea is rooted. The Marxist geographer Edward Soja coined the term in his book *Postmodern Geographies* and identified that the *despatialising historicism* of the 19th century *occluded, devalued, and de-politicised space*.[42] Focusing on the masking functionality of the time-focused discourse of the prewar era regarding underlying spatial relations masking, his critique is based on the major work *the production of space*[43] of French sociologist Henri Lefebvre, who was the first to overcome the spatial obliviousness of the Western *radical thought*. Also Bertrand Westphal, another contributor to the notion of spatial turn, argued that "*the concept of temporality that had dominated the prewar period had lost much of its legitimacy*", and "*the weakening of traditional historicity, alongside the decoupling of time and progess, has made possible the valorising rereading of space.*"[44] Accordingly, we can speak of a re-emergence of space.

36   Latour, *Von der Realpolitik zur Dingpolitik*, 2005, P.74.
37   Castells, *The Informational City*, 1989.
38   Guldi, *What is the Spatial Turn?*, 2014.
39   Bachmann-Medick, *Cultural Turns*, 2014, P.284.
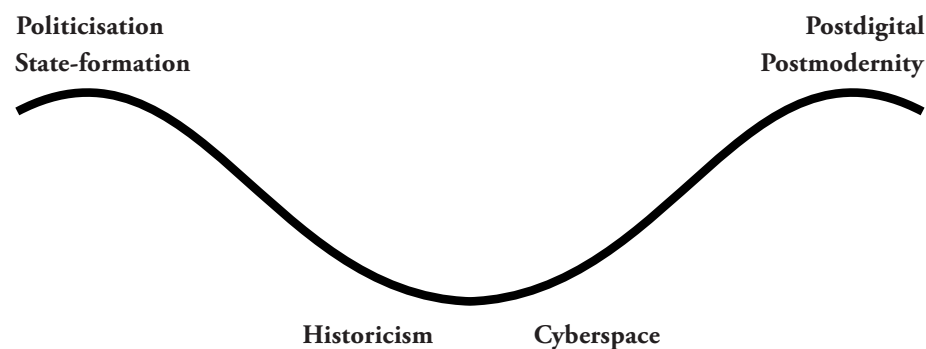40   Stichweh, *Raum und moderne Gesellschaft*, 2003, P.4.
41   Jameson, *Postmodernism*, 1991, P.154.
42   Soja, *Postmodern Geographies*, 1989.
43   Lefebvre, *Production of Space*, 1974.
44   Westphal, *Geocriticism*, 2007.

Politicisation
State-formation

Postdigital
Postmodernity

Historicism   **Cyberspace**

One also has to state that the label of the spatial turn is a quite discussed one. The critique is not so much about the topic, but the fact that the spatial turn belongs to a sheer number of cultural turns, so it is in competition with a iconic turn, performative turn, postcolonial turn and translational turn. Within an inflation like this it seems only logical that the amount of turns is contrary to the impact of each one of those.[45] Nonetheless, Edward Soja has the idea of the spatial turn as a great paradigm that evolves into a master turn[46] and eventually replaces the last master turn of the 1970s, the linguistic turn.

Although the interdisciplinary approach of the spatial turn is a superiority, it is also its greatest weakness at the same time. Since space is a linking element between a variety of disciplines, at least more than the merely linguistically afflicted linguistic turn, there are equally many expectations regarding the substantive focus. However, a great weakness of the linguistic turn is that it couldn't reach non-literary studies. In contrast the spatial turn indicated a redifining of space that originated in physics. Another advantage that could lead to a greater broad effect is the fact that a spatial experience is always pre-linguistic and thus can be immediately perceived. Nevertheless, the existing similarities of both turns are based on the previously deduced skepticism towards the *disappearance of space*.[47]

Thus, it happened, that through a more intense engagement and a discussion about advantages and disadvantages of the spatial paradigm within the culture studies, various concepts have differentiated:

1. topographical turn:
space as form of text which signs can be semiotically decoded[48]

2. topological turn:
topology is about the idendification of similar structures[49]

[45]   Schlögel, *Kartenlesen, Augenarbeit*, 2004, P.265.
[46]   Virilio, *Das dritte Intervall*, 1990, P.348.
[47]   Ibid.
[48]   Weigel, *Zum »topographical turn«*, 2002.
[49]   Günzel, *Raum – Topographie – Topologie*, 2007.

Fi.7   Focus on space in the course of time.

To summarise, there is no consistent agenda within the different shaping of the spatial turn. Thus, it is not helpful to care too much about the certain label similar to the notion of postdigital, but I will point out a specific approach which is promising regarding this thesis.

Therefore, I want to focus on the contradiction of disappearance of space and re-emergence of space, which is basically an opposition of different space concepts. When speaking of disappearing space, it is about the physical space. So it implies a concept of a container, where things and humans have their established place. The space has an impact on the objects placed inside it without having a retroaction. This concept is also called absolute space. A geopolitical element of an absolute and determined space is the nation state.

In contrast, re-emergence of space means a social space. This space is in motion and based on a relational order. The idea of drawing up this notion is that social and historical relevant space is the product of human actions and perception. Examples for relative space are the virtual or transnational spaces. Although the postdigital focus of this thesis negates the virtual space, as explained in the previous chapter, it is still an indicator of longing for a reconceptualisation. As a first sign, the imagery of the internet includes a revealing terminology: *information highway, global village, cyberspace, chatrooms, homepage, portal* and *window*.[50] Thus, space was never really gone. It just became an intermediate state within a techno-positivistic imagined layer, which now needs to brought back into a real socio-cultural environment. As mentioned in the introduction, this thesis for example will deal with geopolitical arrangements.

As a result, one can state that the spatial turn of the 1990s deemed a spatial perception to be necessary, which no longer understands space as a people and culture in a container, but as an effect of social connection that is purely based on individual interests and acting. An updated concept is a postdigital thought one and focuses more on the real space, which is according to Lev Manovich the more important and interesting approach.[51] Therefore, the real space is complemented by a socio-cultural perception of the respective subject. We can say that *physical territory is social-technically reorganised.*[52]

Thus, a new notion of the spatial turn is more about a plurality of space. At a time when different values, cultures, styles, and attitudes congregate at one place, it is hard to keep everything in a determined container. Instead one discovers interlinked and overlapping spaces of different scales that exist equally. On account of these ever less clearly changes from one space to another, it is more about a synchrony instead of diachrony of space. The traditional boundaries of the container model may disappear, but reappear in a different form and someplace else. This becomes important within the geopolitical scope of this thesis. The European Union, for example, established a borderless supranational entity, but the new borders of Europe are visible and momentous. Altogether, space becomes diverse.

To make the spatial turn a valuable concept, one has to think spatial and within spatial categories. This is crucial when remembering that the whole idea is not about space itself but its concepts and perceptions - how to think space. That is why this work deals with concrete cognitions of space, in particular models of space and maps. An increased concern of coherences of space and culture is consequently the crucial point for this thesis.

50   Becker, *Raummetaphern als Brücke zwischen Internet-
       wahrnehmung und Internetkommunikation*, 2004.
51   Manovich, *Geomedien,* 2009, P.390.
52   Döring, *Geomedien,* 2009, P.391.

Fi.8   EU-frontier, Nea Vyssa.

Fin

*"We live in a world, we have not yet learned to look at.
We need to re-learn to think about space."*
— MARC AUGÉ [53]

Both concepts of *postdigital* and *spatial turn* lead to the
humanistic focus of the discussion on space within this thesis.
In particular, a *spatial turn* expanded by the critique of
internet-centrism helps to understand the new necessity for
understanding space.

An exemplary occurrence is the decision of the UNESCO
World Heritage sites to create an *intangible* list next to the *real*
and physical representations of culture. Also within the original
UNESCO World Heritage an increase of power structures,
similar to the stated development of the structures of the internet,
becomes visible: more than 50% of all *world* heritages are located
in the Western world. Thus an Euro-centrism continues.

Altogether, this critical perception regarding power structures
and predefined presumptions is applied to theoretical-
conceptual decisions as well as the resulting design practice.

After this general introduction and explanation of the
underlying theoretical motivation, the following chapter deals
with the concrete theoretical grounding to develop a concrete
understanding of humanistic notion of spaces and their usage
especially within a political context.

Europe / North America

Everybody Else

[53]   Augé, *Non-places,* 1992.

Fi.9   Distribution of UNESCO World Heritage.

Space Is Dead

Introduction

After an introduction that reasoned the spatial motivations of this thesis, the essential question can be asked: what is space? In order to clarify this broad problem, it is necessary to make clear that this work is not about what space actually is. It is about how we think about space and which consequences this has and had regarding resulting theoretical constructions. The ontological *what* question is transferred to a conceptual *how* question.

Thus, this chapter deals with the categorical notions of space and how they interact with each other. The history of theories of space provides an unmanageable amount of concepts, which, however, can be traced back to beginning of Western philosophy and evolving physical theories. Almost any traditional author describes or relates to a specific notion of space that is based on a philosophical or physical concept, as Stephan Günzel states in the introduction of *Raumtheorie.* (Philosophy and physics can be thought of being linked, because at that time both were basically the same subjects.)[54]

A recurrent difference, therefore, identifies a regulative element. The cardinal discourse of absolutistic and relativistic concepts enables to categorisation of history of spatial thinking. In the words of Albert Einstein:

> *"These two concepts of space may be contrasted as follows:*
> *(a) space as positional quality of the world of material objects*
> *(b) space as container of all material objects.*
>
> *In case (a), space without a material object is inconceivable. In case (b), a material object can only be conceived as existing in space; space then appears as a reality which in a certain sense is superior to the material world.*
>
> *Both space concepts are free creations of the human imagination, means devised for easier comprehension of our sense experience."*
> — ALBERT EINSTEIN[55]

[54]   Günzel, *Raumtheorie,* 2006.
[55]   Einstein, *Concept of Spaces,* Foreword, 1954.

During the different ages the ideological dominance of one or the other conception alternated again and again. Following Urry and Pries the conflict of both draws through the history of science for hundreds of years.[56] It can be imagined as a perpetual pendulum seeking for the right term.

While on one side space is quite specific because it can be experienced closely and is so to say our surrounding mantle of life, the macroscopic ordering of space through only imaginable notions of space remains very abstract. This paradox has consequences especially regarding sociological perceptions of space, which will be discussed in the next chapter in detail. The illustration of the roots of the concepts of space in the following will act as a clarification how to understand space.

To start off, the etymological meaning of the word space helps to develop a sense of the conceptual aspect of space. It derived from the verb *to space*, which roughly means *to make room, empty, eject*.[57] The *Duden* explains *to space* as *cultivation, settling and create a clearing in the forest*.[58] From this follows that even the origin of the word space is a constructivist concept of space. Space was never perceived as a given, mundane, and material artefact, instead it always had the idea of being created by mankind included.[59] This becomes important when we have look at the further development of concepts of space.

The history of notions of spaces means a long time period of an unreflected attempt at orientation, that slowly develops to an abstract term of space, as Marcus Schroer describes.[60] The yet quite basic perception of space of indigenous people is described as a random collection of specific orientations that are bound to certain emotional sensations.[61]

Firstly, in ancient times attempts started to find a term of the physical space.[62] These were mostly approaches that dealt with findings deduced from sensory impressions. Heraklit for examples describes that the sun has *the size of the human foot* and is *everyday new*.[63] He also proclaims the world as entirety is limited, *because the being cannot be without end*.[64] The first extensive effort to explain space is to be found at Plato's writing of *Timaeus*.[65] The essential point of the Platonic dialogue is that space as excluded third element lies between being and becoming. Space is an adopting gestalt of the mental and material:

> *"And there is a third nature, which is space, and is eternal, and admits not of destruction and provides a home for all created things, and is apprehended without the help of sense, by a kind of spurious reason, and is hardly real; which we beholding as in a dream, say of all existence that it must of necessity be in some place and occupy a space, but that what is neither in heaven nor in earth has no existence."*
> — PLATO [66]

Aristotle on the other hand recognises the concept of Plato, but developed his own theory about space within his categories of being. Therefore, he defined space as the sum of all places taken by objects. This leads to the question of what constitutes the place. Aristotle describes place as the *border of the comprehensive object*.[67] In summary, his world view of symmetry and arrangement consists of hierarchical system of places (fish *in* water, birds *in* the air, …) that is held together by a superior sphere, which he calls space.[68] Eventually, his notion of space equals the metaphor of a stuffed container and thus constitutes the base of absolutistic notions of space.

Nevertheless, even in the age of antiquity this concept encountered already a counterpart. Aristotle's student Theophrastus concluded that *space itself has no reality, but it is a relation of objects that constitutes their mutual position*.[69] Space in his sense is a *system of interconnected relations*.[70] This can be noticed in a very early example of a relative notion of space. Even if the Aristotelian world view will dominate the following centuries, it is still notable that the pendulum of absolutistic and relativistic notions swings from time to time.

56   Urry, *Social Relations and Spatial Structures*, 1985.
57   *Duden*, German dictionary.
58   Ibid.
59   Schroer, *Räume, Orte, Grenzen*, 2006.
60   Ibid.
61   Jammer, *Concept of Spaces*, 1954.

62–64   Zekl, *Raum. Griechische Antike*, 1989.
65–66   Plato, *Pilebos, Timaios, Kritias*, 1991.
67–68   Aristotle, *Physik. Vorlesung über die Natur*, 1995.
69–70   Jammer, *Concept of Spaces*, 1954.

The next time the pendulum is at least sways are the early Middle Ages. As one of a few, for example, Johannes Scotus Eriugena underlined that all spatial relations must be thought independent of any observer, consequentially relative in the sense of Einstein's theory of relativity. Also Wilhelm von Ockham and Franciscus Suárez criticised the container model of Aristotle and proclaimed relations of distances.[71]

A more lasting shock to the Aristotelian domination was the philosophy of Renaissance. The distinctive approach of this thinking was the removing of things from the term of space. Instead of asking about the essence of things, it was more about their interrelations.[72] As a prominent representative of Renaissance, philosopher Giordano Bruno states that space remains even if any objects are removed from it. This independent existence is neither active nor passive, it permeates everything and doesn't allow emptiness.[73] The absence of determination leads to an infinity of the world: Stephan Otto states that because the variable and contingent being of the world allows no absolute determinations, the world is infinite and in an infinite way scientifically measurable. Furthermore, its being is a being in the mode of an infinity of relations, as he explains.[74]

After a rough discourse regarding the beginnings of the history of conceptions of space, which showed the basic and recurring debate between absolutistic and relativistic concepts, the further historical elaboration will disclose a more precise taxonomy of models of space. This structure will remain the basic system of this thesis and all later theories, analyses and executions will be applied to this arrangement. The following two pages provide an overview of those and give essential informations in advance.

As mentioned in the beginning of this chapter, the discussions about space are various but can be categorised. Naturally, these categories are never objective and always on purpose. In the case of this thesis, the structure of the notions of space is building up on each other but is not chronological. This follows the purpose of a pragmatic consistency regarding a certain logic and tangibility, especially relating to the practical work.

Fi.11 Aristotle and Plato discussing space, *The School of Athens*, Raphael.

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[71] Breidert, *Raum,* 1989 P.84.
[72, 74] Otto, *Geschichte der Philosophie in Text und Darstellung*, 1984, P.50f.
[73] Schubert, *Erlebnis, Anschauung und Begriff des Raumes*, 1987, P.15–44.

Absolute

After a strong relativistic swing in the age of Renaissance, Sir Isaac Newton personalises the even stronger return of the absolute notion of space in the Enlightenment. Contrary to any other notion of space Newton takes the universe not as a self-contained system but as open and infinite, as Marcus Schroer deduces.[75]

The concept of absolute space implies that space stays independently from outer things always identically and unchangingly. Jammer explains Newtons was thinking about an own existence of space and a clear independence of contained objects, so space could exist without any objects included.[76]

Particularly because absolute space, exactly like absolute time, is not observable nor sensible, Newton includes the concept of movable (relative) space to make aware of the only true absolute space.[77] He does that in the beginning of his work *Principia Mathematica,* in detail Newton states:

> *"Absolute space, in its own nature, without regard to anything external, remains always similar and immovable. Relative space is some movable dimension or measure of the absolute spaces; which our senses determine by its position to bodies; and which is vulgarly taken for immovable space; such is the dimension of a subterraneous, an aereal, or celestial space, determined by its position in respect of the earth."*
> — ISAAC NEWTON[78]

Since the absolute space is homogenous and relative space is a part of it, the relative space is a accurate measurement for the absolute space in the sense of Newton.[79]

In the lifetime of Newton, the relation of absolute and relative space had already been questioned, for example, by his ideological competitor and a prominent representative of the relative notion, Gottfried Wilhelm Leibniz.

75   Schroer, *Räume, Orte, Grenzen*, 2006.
76–77   Jammer, *Concept of Spaces*, 1954.
78   Newton, *Mathematische Prinzipien der Naturlehre,* 1963.
79   Freudenthal, *Atom und Individuum im Zeitalter Newtons,* 1982.

There are several reasons related to social and political conditions at that time, why Newton adheres to the construct of absolute space. He explains one quite obviously in *Principia Mathematica*:

> *"It ist he dominion of a spiritual Being which constitutes a God a true, supreme, or imaginary dominion makes a true, supreme, or imaginary God. And from his true dominion it follows that the true God is a living,intelligent and powerful Being; and from his other perfections, that he is supreme or most perfect.* […] *He is not eternity or infinity, but eternal and infinite; he is not duration and space, but he endures and is present. He endures forever and is everywhere present ; and by existing always and everywhere, he constitutes duration and space.* […] *Everyman so far as he is a thing that has perception, is one and the same man during his whole life, in all and each of his organs of sense. God is one and the same God, always and everywhere. He is omnipresent, not virtually only, but also substantially; for virtue cannot subsist without substance."*
> — ISAAC NEWTON[80]

Next to socio-political implications on scientific and philosophical work in the times of absolute monarchy, there is another reason why the absolute notion is still today very popular. As Jammers indicates, absolute space corresponds to human emotions very well. This kind of space provides safety, clarity and accuracy.[81] Questions about external and self (who is inherent, who is foreign) can be answered non-ambiguously. This conception of space leads to a stabilisation of social differences.[82] As Jammers predicts, the absolute space stays as a productive illusion. So productive that this concept always will be the foundation of our every day experience.[83] Especially regarding the geopolitical analysis of space this aspect becomes crucial, which will be pursued in the relevant chapter.

To sum everything up, the notion of absolute thinks space as container, that can be filled. The container is considered as determined, which explains the term *absolute*. Thus, space is just a boundary condition of the content, consequently matter has no influence on space. This situation is called a dualism of space and matter. With its determinations, an absolutistic perception of space removes the possibility to apply spatial categories, which renders this notion of empty space uninteresting for social and cultural sciences analysis regarding spatial relations.

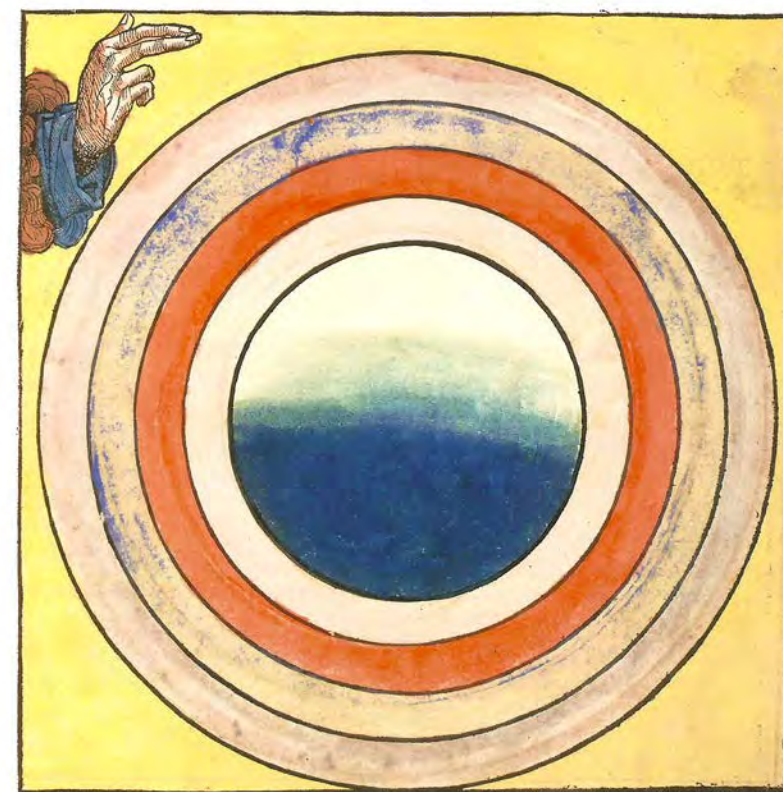80   Newton, *Mathematische Prinzipien der Naturlehre,* 1963.
81, 83   Jammer, *Concept of Spaces*, 1954, P.125,192.
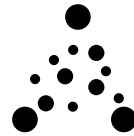82   Schroer, *Räume, Orte, Grenzen*, 2006, P.38.
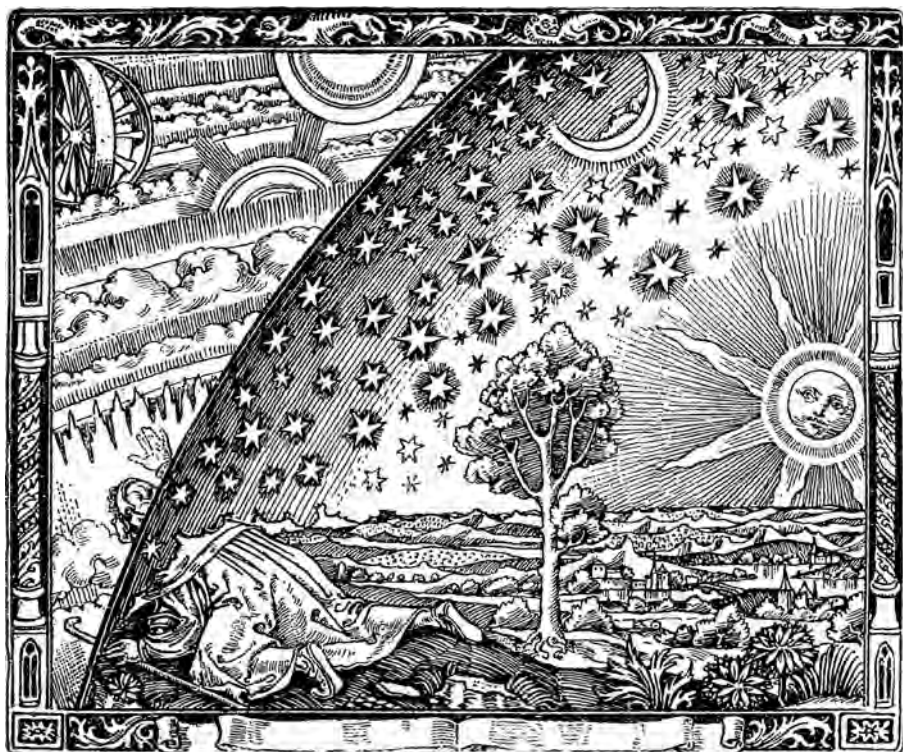
Fi.12 *L'Atmosphère*, Camille Flammarion, 1888.

Fi.13 Liber chronicarum (one of six), Hartmann Schedel, 1493.

Relative

In distance to the absolute notion of space, the relativistic notions were developed through various theorists. Within the relativistic understanding of space one can distinguish between at least two basic concepts: the relational and topical space. Since these two ideas have to be separated because of fundamental differences regarding an order function of space, the structure of this thesis is complemented by a third concept.

The relative space is meant to be an antagonist to the absolute concept within this thesis. It functions like a prototype of a relativistic concepts which focuses on subjects which clearly separates it from the absolute notions of space. As mentioned in the previous section, Newton already introduced to concept of relative space in form of moveable space to reason his absolute concept. Nevertheless, with the help of Einstein's theory of relativity one is able to exclude the pure notion of relative space.

Einstein overcomes the Euclidean notion of space by not separating space from time anymore.[84] Instead of being independently of one another, he thinks space as space-time-structure, what he calls spacetime. He negates the idea of absolute insofar as space and the supposedly contained objects are no separate entities.[85] As already mentioned earlier, he explains that space is no *container of all material objects*, but a *positional quality of the world of material objects* or *relational system of material objects*.[86] Subsuming, space and time can only be thought relatively to the respective frame of reference. Norbert Elias describes the meaning of the theory of relativity regarding the structure of spacetime with the following words:

> *"In brief, every change in »space« is a change in »time«; every change in »time« a change in »space.« Do not be misled by the assumption that you can stand still in »space« while time is passing: it is you who are growing older … The change may be slow, but you are continuously changing in »space« and »time« - on your own, while growing and growing older, as part of your changing society, as inhabitant of the ceaselessly moving earth."* — NORBERT ELIAS[87]

[84-85] Schroer, *Räume, Orte, Grenzen*, 2006, P.43.
[86] Läpple, *Essay über den Raum*, 1991, P.189.
[87] Elias, *Über die Zeit*, 1987.

Regarding the problems related to space, one is able to deduce from Einstein's spacetime that space and matter only occur at the same time. Thus, spatial qualities arise out of social and cultural events. In a nutshell, space equals matter.

This dichotomy towards a consideration of space and matter points out the need of a particular counter concept to the absolute notion of space. Whereas the relational and topological notion of space are focussing on specific systems of ordering, the pure relative concept is able to provide an analysis of the fundamental structure of space. This is a special characteristic which becomes advantageous in relation to geopolitical structures. Since the narrative gap allows to associate the absolute (deterministic) concept with the relational (perspective) concept, the relative concept of space consequently becomes a necessary link.

While emphasising on theories that can be related to a specific notion of space, this classification could give the impression that the whole scientific and philosophical discourse takes place between absolutistic and relativistic representatives. In this case, however, often both position can be found in only work together. For example Immanuel Kant was firstly interested in a reconciliation of the position of Newton and Leibniz.[88]

Although Kant is a good instance of the diversity of the spatial discourse, even he eventually turns away from Newton and states the space as a product of human imagination:

> *"It is therefore from the human point of view only that we can speak of space, extended objects, etc. If we depart from the subjective condition, under which alone we can obtain external intuition, or, in other words, by means of which we are affected by objects, the representation of space has no meaning whatsoever."* — IMMANUEL KANT [89]

[88] Jammer, *Concept of Spaces*, 1954, P.142.
[89] Kant, *Critique of Pure Reason*, 1781, P.62.
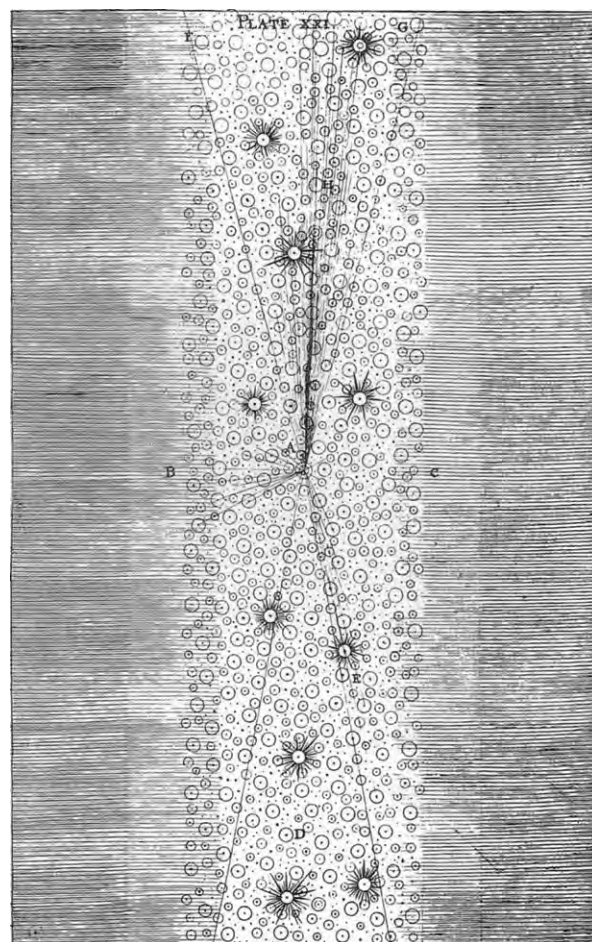
Fi.14 *An original theory or new hypothesis of the universe,*
Thomas Wright Wright, 1750.
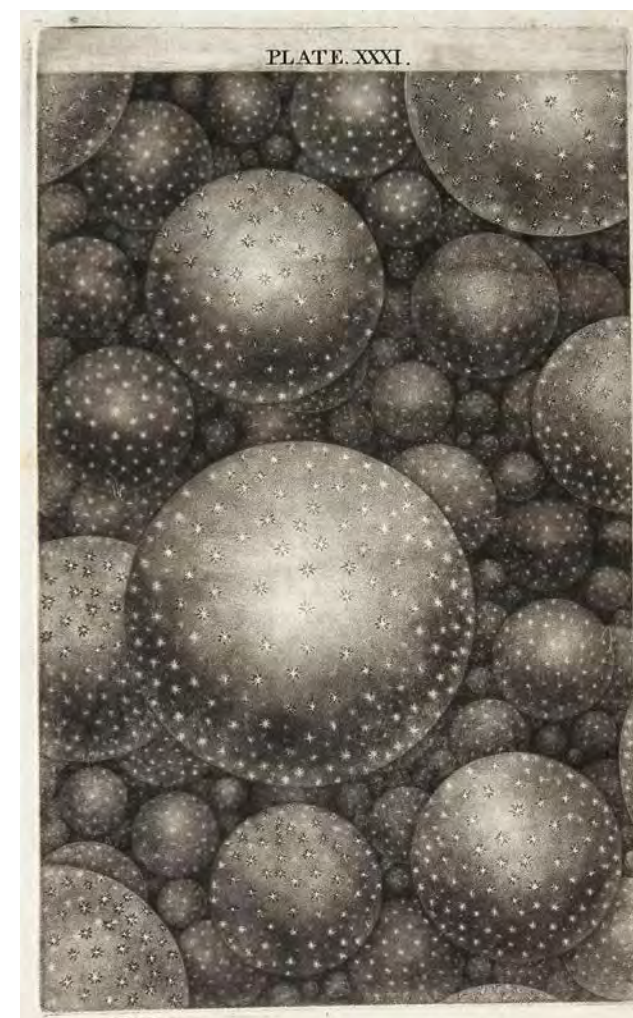
Fi.15 *An original theory or new hypothesis of the universe,*
Thomas Wright Wright, 1750.

Relational

Within the relativistic spatial models, there is a distinction made between different types of constructing spatial formations thr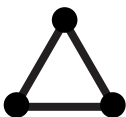ough socio-cultural processes. Regarding this thesis, it will be distinguished between relational and topical concepts of space.

Both have a relativistic perception of space in common, which thinks space as a result of the order of the relative position of objects. Furthermore, both of them combine an understanding of space as a network, which can again be differentiated between polycentric and topical network-models. These abstractions form the basis for the practical work regarding these notions of space and will be elaborated in the specific chapter.

With an understanding of this general separation of relativistic notions of space, one has to recognise that relativistic concepts have always been relational in Western philosophy.[90] Therefore, this fact refers again to the explained scientific controversy of the 17th century. After the hugely popular absolute notion of Newton can now be considered to be over these days, it is possible again to emphasise on Leibniz' criticism of Newtons conception of space.[91] In a time of a renaissance of relational concepts in sociology and culture studies, his thoughts gain in importance again.[92]

Leibniz rejects Newton's idea of absolute notion by claiming that space and time have no substantial reality and thus no material existence.[93] Rather, they should be understood as *ideational system of order of appearances*, that are based on a constructivist inventive force of the human spirit: [94]

space	time
system of togetherness	system of successively

The whole idea of relational space describes the position of an element as a result of its relation to another element and not absolute. Leibniz writes as follows:

> *"I will here show, how men come to form to themselves the notion of space. They consider that many things exist at once and they observe in them a certain order of co-existence, according to which the relation of one thing to another is more or less simple. This order, is their situation or distance. When it happens that one of those co-existent things changes its relation to a multitude of others, which do not change their relation among themselves; and that another thing, newly come, acquires the same relation to the others, as the former had; we then say, it is come into the place of the former; and this change, we call a motion in that body, where in is the immediate cause of the change. […] And that which comprehends all those places, is called space."*
> — GOTTFRIED WILHELM LEIBNIZ[95]

Consequently, following Leibniz the pure relations of position form space.[96] "*One is strictly speaking not allowed to say that an element is in a place, but only that the object is in that place as seen from another element.*"[97] This reveals an important argumentation.

Leibniz consolidates already an idea of multitude of perspectives. Every appearance comes into being because of a certain perspective and thus would be different if the perspective changes.[98] He introduces therefore the contingency of each observation.[99] As a result of his ideas, space is defined as epitome of all experienced relations of position of the simultaneous parallel existence of potential material positions.[100]

In an applied context, this spatial notion give rise to space by a formation and continuous actualisation of a network of relations. When abstracted, Leibniz' understanding of space equates a model of a relative and polycentric system.[101]

90   Latka, *Topisches Sozialsystem*, 2003.
91   Jammer, *Concept of Spaces*, 1954, P.125.
92   Schroer, *Räume, Orte, Grenzen*, 2006, P.39.
93   Ibid.
94   Cassirer, *Newton und Leibniz*, 1969, P.158.

95   Leibniz, *Hauptschriften zur Grundlegung der Philosophie*, 1904, P.182.
96   Schroer, *Räume, Orte, Grenzen*, 2006, P.40.
97   Weizsäcker, *Zum Weltbild der Physik*, 1990, P.138.
98   Löw, Raumsoziologie, 2001, P.28.
99   Schroer, *Räume, Orte, Grenzen*, 2006, P.40.
100 Stekeler-Weithofer, *Hegels Analytische Philosophie*, 1992, P.100.
101 Latka, *Topisches Sozialsystem*, 2003.
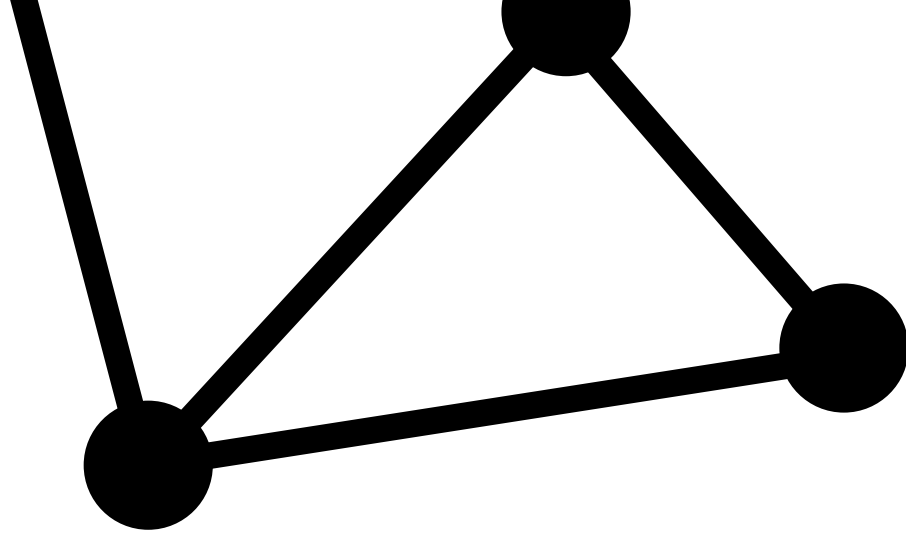
Polycentric means, that the connecting element of the network structure are the many various centres. Relations are composed of direct paths between the different nodes.

From a social and cultural science's perspective, the relational model is applied to network analytical techniques which understand social happenings as the construction of network structures.[102] From this it follows that only the relativistic approach to space provides a reason to ask for a formation of spatial qualities regarding social relations, which especially becomes crucial when looking at recent global political actions, which are intangible within an absolute container perception.
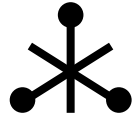

Fi.16 Polycentric relation.

[102]   Latka, *Topisches Sozialsystem*, 2003.

Fi.17 Atomium, Brussel, 1958.

Topological

Besides this relational understanding of space, that is characteristic for Western modernism, a topical notion of space developed in Eastern Asia, especially Japan. One of the most prominent representatives of this thinking is Nishida Kitarō, who combines Western methodology and terminology with an Eastern body of thought.[103]

In contrast to the presented relational conception, space is not mainly perceived as a relational framework, but as a field spanned by the spatial points. This field is called Topos (*basho*, 場所). Thus, topological thinking can be described as the theory of geometrical definition of places and fields within space as sphere of the outer world.[104]

During the already mentioned "topological turn", the topical conception gained an increasing reception at the beginning of the 21st century also in Western philosophy.[105] Therefore, similar to the spatial turn of the 1980s, the *topological turn* considers especially place and field as categories. This also the connection to the modern Japanese philosophy, in which the theory of place (*bashoron,* 場所論) maintains a key role since the beginning of the 20th century notably through Nishida.[106]

The basic concept of this spatial notion is the topical relation. In contrast to the direct and straight connections of spatial points of the relational model, the topical model constructs the connections as running across the field. Therefore, it can be visualised as two crossing lines. Consequently, it is not so much about the relation itself, but the constructing space in between.

polycentric
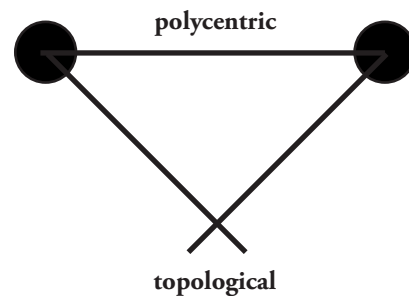
topological

Fi.18 Polycentric and topological models.
103-106 Latka, *Topisches Sozialsystem*, 2003.

The metaphor of the spatial field emphasises on the idea that spatial points can also be permeated by space itself. The connecting is at the same time the permeating.[107] Another graphic metaphor refers to a physical phenomenon. Oscillation describes a process with which oscillations permeate spatial points and thus come into resonance.
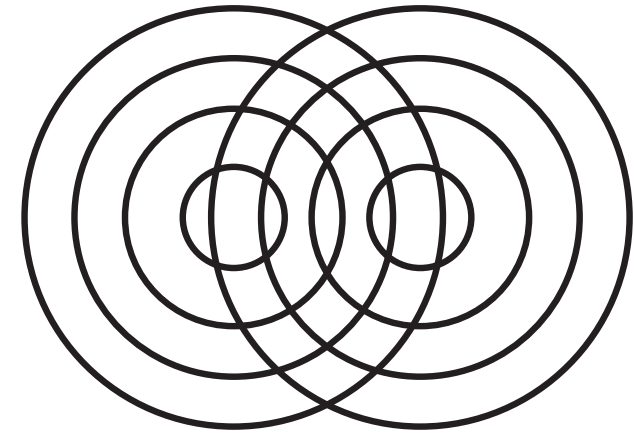
Although the topological notion of space is rooted within Japanese philosophy, we can find a few examples of Western theorists who demonstrate a similar approach regarding spatial notions. For example Gosztonyi sums up his standing with the following words:

> *"space is »pure conductivity«*
>
> *It is - also methodical - not separable from the oscillation, however, it is oscillation.*
>
> *[…] the space […] acts particularly inside itself - and not around - but as tension, that the human is put out permanently."*
> — ALEXANDER GOSZTONYI[108]

Fi.19 Resonance effects.
107   Latka, *Topisches Sozialsystem*, 2003.
108   Gosztonyi, *Der Raum. Geschichte seiner Probleme in Philosophie und Wissenschaften*, 1976.

Also Pierre Bourdieu refers to the term of field and calls for a radical change within social sciences:

"Thinking in terms of fields requires a conversion of one's entire usual vision of the social world, a vision interested only in those things which are visible [...] In fact, just as the Newtonian theory of gravitation could be developed only by breaking away from Cartesian realism, which refused to recognize any mode of physical action other than impact, direct contact, in the same way, the notion of the field presupposes that one break away from the realist representation which leads one to reduce the effect of the milieu to the effect of the direct action that takes place in any interaction. It is the structure of the relations constitutive of the space of the field which determines the forms that can be assumed by the visible relations of interaction and the very content of the experience that agents may have of them."
— PIERRE BOURDIEU[109]

He states that the field has its own relevant quantity and must be the focus of research.[110] Although a few Western theorists have recognised the limits of other conceptions of spaces and try to search their way towards a topical notion of space, they are more an exception than a general rule. As already pointed out in the introduction of this chapter, the antagonism of space and time is still today ubiquitous and can seemingly be spatially organised:

"If Westerners express the world in the form of time, the Japanese tendency toward space is the antithesis of these European concepts. Schematically speaking, it is a way of plotting perception along the axis of »being and space« instead of »being and time«." - KAWAKATSU[111]

However, Nishida, as a founder of the topological thinking, was trained in Western philosophy. Consequently, it remains more conflicted between different efforts towards an abstraction of space rather than spatially distributed schools of thought.

Nevertheless, the topological turn of the 20th century continued unhindered only in Japan.[112] Therefore, this thinking needs to be reimported as a second topological turn of the 21st century, which can connect to recent topological discussions within various scientific communities.

Furthermore, the original spatial turn cannot be accomplished completely when it sticks to its old notion. An update into a new spatial turn or topological is needed because the topos of field enriches the notion of space essentially. It even goes beyond spatial categories and effects fundamental thought structure like our Western logic:

logic of subject	logic of predicate
logic of polycentrism	logic of topos
information of subject	information of field
egocentric self	topocentric self

The topical turn has the potential to be comprehensive based on its coverage of different disciplines. It could be even helpful to understand crucial cultural phenomena of the presence, because of its enhancement of perspectives.[113] Thus, it is important to develop the spatial turn into a topological turn.

Fi.20 *Ryōan-ji*, Kyōto, 1450.

[109]   Bourdieu, *Sozialer Raum und Klassen*, 1985, P.71.
[110]   Ibid., P.139.
[111]   Kawakatsu,1999.

[112]   Latka, *Topisches Sozialsystem*, 2003.
[113]   Ibid.

Absolutistic

Relativistic

Absolute

Relative

Relational

Topological

Container

Quantity

Network

Field

Newton

Einstein

Leibniz

Nishida

38

42

46

50

Fin

In summary, it was demonstrated that space is a medium, which helps to establish order. After a brief but pragmatic outline of the history of notions of space, a basic structure of the major conceptions was deduced. This structure shapes the further proceeding of this thesis, consequently it is used as a conceptional framework.

The fundamental competition of absolutistic and relativistic notions of space was traced back to beginnings of a theoretical debate about space, but was also transferred to recent postmodern discussions. It seems that the theory of space is an ever-lasting and ever-changing (pendulum) search for the *true* meaning. As shown in this chapter, the *true* conception always depended on prevailing theories and schools of thought within the respective epoch.

Due to this, the question is posed, how far social and cultural sciences considered these physical and philosophical concepts into their perceptions of space. On closer inspection, one can state an explicit adoption of these concepts. In any spatial related social or cultural theory one can find ideas of Plato, Aristotle, Kant, Newton, Leibniz, and Einstein. For example, Georg Simmel relates to Kant, Pierre Bourdieu to Leibniz, and Niklas Luhmann to the absolute notion of Newton.

Thus, these physical and philosophical notions can be called the starting base of theoretical examination of space.[114]

However, the difference between absolutistic and relativistic conceptions is still shaping within social and cultural sciences. After the clash of Leibniz and Newton with Newton's absolute notion as winner, Einstein actually replaced the absolute perception with his theory of relativity. Despite the theoretical farewell, absolute thinking is still present because of reasons that are explained in the specific section, like its concrete tangibility.

Accordingly, the dialectic of passivity (absolute) and activity (relative) has found entrance into social theories. Therefore, this debate reappears in the postmodern question of the influence of *society* on *individuals* or *structures* on *actions*.[115]

As suggested in the introduction, the supposed virtual space of the internet demands a spatial concept which negates the absolute space as container of humans and cultures. Instead, a cyber-optimistic perspective perceives space as a pure product of social relations of human entities. The propagated postdigital paradigm on the other hand conquers the conflict of absolute and relational and requires in contrast a focus on the real space combined with a socially and culturally constructed perception of space. At least the topological notions seems to follow these standards. Summarising, a postmodern notion is neither purely absolute nor relational. The point is rather a postdigital thought expanded spatial turn or topological turn, which includes the possibility of a simultaneousness of notion of spaces.

This perspective of an updated spatial turn also helps to make visible that the theory of space finally was never disappeared as often claimed within a spatial turn context. It is more about an implicit and unquestioning takeover of the container concept, which led to the fatal assumption that political and social spaces are the same and end within territorial borders.[116] As a result, the approach of this thesis is also one of deconstruction of prevailing spatial perceptions.

Eventually, is not so much about finding the right term, but how these different notions influence the perception of space and help to explain certain social and cultural discourses. Therefore, the following chapter will deal with the application of conceptions of space within social and cultural studies.

[114-115] Schroer, *Räume, Orte, Grenzen*, 2006, P.44.

[116]   Schroer, *Räume, Orte, Grenzen*, 2006, P.44.

Spatial Turns 1990s — Relational — **Topological Turn (2nd Spatial Turn)**

Absolute - **Diversity**

Cyberspace — Relational — **Postdigital**

Fi.22 Progress of notions of spaces.

I'm Not Interested In Space

Introduction

With the possible notions of space given by physics and philosophy, space is intended to be either absolutistic or relativistic. Although present-day natural sciences might already think about space beyond these notions, social and cultural studies verifiably referred to the concepts introduced in the previous chapter within spatial contexts.

Accordingly, this chapter will broadly show and associate the major theorists of spatiality within the social and culture studies. The aim is to enrich the implemented basic four-part structure with these mindsets. Thus, in the end, it allows a transfer to a concrete exemplary analysis, which will be in the case of this thesis a geopolitical investigation.

The documented fluctuation between absolutistic or relativistic concepts is also finding its way into social and cultural studies. After a long period of orientation along a container principle, they tend to be more and more based on relativistic ideas, in particular relational concepts.[117]

At the same time, the absolute concept and thus the isolation of space from its social implications resulted in an externalisation of the spatial issue.[118] The cause of this is that regarding *all talking and understanding of the social topic an absolute perception of space is inherent.*[119]

From this it follows that specific spaces like geopolitical spaces (nation states) or also equally social spaces (classrooms and living areas) are taken for granted without asking for their condition of social constitution. This is the reason why the category of space was less considered by social and cultural theory construction.[120]

Only with a modern perspective of the end of the 20th century one was able to comprehend that a spatial category is needed to explain recent social changes. Thus, the focus was on how space is constructed by social actions and how space structures cultural systems. This change is a process that was defined as spatial turn or rather topological turn in a previous chapter.

[117]   Schroer, *Räume, Orte, Grenzen*, 2006, P.47.
[118]   Läpple, *Essay über den Raum*, 1991, P.195.
[119]   Pries, *Neue Migrationen im transnationalen Raum*, 1997, P.18.
[120]   Schroer, *Räume, Orte, Grenzen*, 2006, P.47.

Furthermore, one can describe the approach of social and cultural studies on spatiality as interdisciplinary proceeding. Various disciplines are naturally involved when discussing about space. First, there are classic academic disciplines such as geography or more precisely human geography and architecture, which are enriched with different theoretical tendencies like critical theory, Marxism and post-colonialism.

The blooming period for a theoretical occupation with space within social and cultural studies were ideas particularly from French and English-speaking theorists of sociology, philosophy and human geography.[121] Major theorists of spatiality are for example Gilles Deleuze, Michel Foucault, Henri Lefebvre, Edward Soja and Fredric Jameson.

Georg Simmel
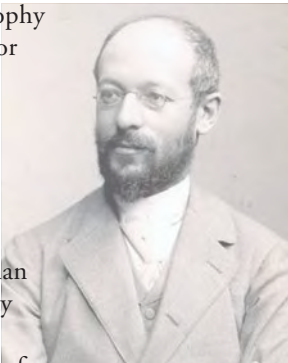
To start with, Georg Simmel represents in contrast a German classical author from the beginning of a sociological activity regarding space. Even before the mentioned thriving times of spatiality within sociology, Simmel dealt with questions of space in a high degree and thus his work is rated as one of the most important classics to this field.[122] His long neglected *The Sociology of Space* and *On the Spatial Projections of Social Forms* both from 1903 are elementary texts and consist of many useful insights regarding space.[123]

Content wise, Simmel rejects the preceding idea of Newton's container notion of space. He states that even the social forming of neutral borderland seems to socially shape the supposed emptiness.[124] Thus, he creates an idea of nature as substrate of the social field. Although he is not completely consequent in this idea, so count abiotic alpine regions as exceptions from a social shaping of space.[125]

Fi.24 Georg Simmel portrait.

[121]   Tally, *Spatiality*, 2013, P.2.
[122]   Urry, *The Sociology of Space and Place*, 2004, P.5.
[123]   Schroer, *Räume, Orte, Grenzen*, 2006, P.60.
[124]   Dünne, *Raumtheorie*, 2006, P.290.
[125]   Simmel, *Die Alpen*, 1919.

Spatial Qualities	Spatial Structures
Exclusivity	Nation State
Decomposability Boundary	Territorial Sovereignty Centrality
Fixation	Localisation (House etc.)
Proximity Distance	Void
Movement	**X**

Fi.25 Spatial qualities, *Räume, Orte, Grenzen,* Schroer.

For him, different kinds of social systems become visible through space, albeit only social organisation itself can create a perceptible organisation of space.[126] These result in an anti-geographical turn because Simmel reverses the causal relation between physical territory and social shaping, later Nigel Thrift would state: *Geography is nothing physiographically given, but is made.*[127]
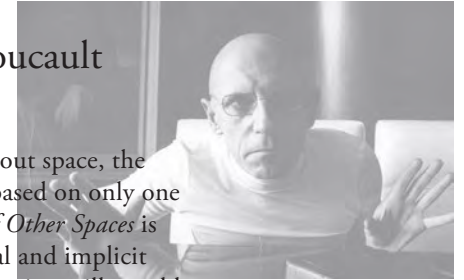
A perspective which later led to a differentiation of geography into physical geography and social or human geography. This is essential insofar as since the presumed *end of geography*[128], geography as the original spatial science could re-discover itself beyond a spatial determinism, so that especially contributors of human geography decisively shaped social and cultural discourses of space, like for example Edward Soja whose *third space* will be explained later in detail.

Through this approach of understanding space as form of perception, Simmel imposes a certain potential of creation of forms. As Martina Löw explains, Simmel's constitution of space is based on the idea that human activity brings objects in a spatial form and thus space is perceived as existing material objects like territories, regions or rooms.[129] However, such materialisation demands an individual and collective effort which is always grounded in socially pre-structured forms.[130] Consequently, Simmel constitutes the changeability of spatial perceptions due to social transformation.

Thereby, he anticipates a notion that Foucault will describe as *historical a priori* 60 years later.[131] If one accepts Foucault's proclamation of the *epoch of space*[132] as a starting point for the spatial turn, Simmel's pioneering role and thus importance can hardly be overestimated.[133]

Michel Foucault

While Georg Simmel wrote several texts about space, the renaissance of space following Foucault is based on only one late rediscovery of a lecture.[134] His work *Of Other Spaces* is nonetheless an indicator of the fundamental and implicit importance of spatiality.[135] Therefore, this section will roughly summarise the main ideas and try to point out the linkages for follow-up theorists.

As already introduced within the chapter of *Space Disappears* (beginning at page 24), Foucaults result of an conflict of space and time is an *epoch of juxtaposition, the epoch of the near and far, of the side-by-side, of the dispersed.*[136]

> *"Structuralism, or at least which is grouped under this slightly too general name, is the effort to establish, between elements that could have been connected on a temporal axis, an ensemble of relations that makes them appear as juxtaposed, set off against one another, implicated by each other – that makes them appear, in short, as a sort of configuration."*
> — MICHEL FOUCAULT[137]

Following Foucault, a social knowledge system is constituted topological by the exclusion of a historically changeable *other*, which means something that is not discussable at a certain time and thus becomes *outside of thinking*.[138] The *outer space* is meant to be the surrounding space that can be filled with qualities like memories etc.[139] He describes this space as follows:

> *"We do not live inside a void that could be colored with diverse shades of light, we live inside a set of relations that delineates sites which are irreducible to one another and absolutely not superimposable on one another."*
> — MICHEL FOUCAULT[140]

[126]   Dünne, *Raumtheorie*, 2006, P.291.
[127]   Thrift et al., *Thinking Space*, 2000.
[128]   Virilio, *Eine überbelichtete Welt*, 1997, P.9.
[129]   Löw, *Raumsoziologie*, 2001, P.62.
[130]   Ibid.
[131]   Foucault, *L'Archéologie du savoir*, 1969, P.183-190.
[132]   Foucault, *Of Other Spaces*, 1984.
[133]   Dünne, *Raumtheorie*, 2006, P.290.

Fi.26 Michel Foucault portrait.
[134]   Defert, *Die Heterotopien*, 2013, P.67-92.
[135]   Dünne, *Raumtheorie*, 2006, P.292.
[136]   Foucault, *Of Other Spaces*, 1984.
[137]   Ibid.
[138]   Dünne, *Raumtheorie*, 2006, P.292.
[139]   Neugebauer, *Von anderen Räumen*, 2007.
[140]   Foucault, *Of Other Spaces*, 1984.

Within these *outer spaces* of relations he is mostly intrigued by sites that are in relation with all the other sites:

> *"But among all these sites, I am interested in certain ones that have the curious property of being in relation with all the other sites, but in such a way as to suspect, neutralize, or invent the set of relations that they happen to designate, mirror, or reflect."*
> – MICHEL FOUCAULT [141]

Foucault introduces therefor two main categories of *other spaces*:

> *"First there are the utopias. Utopias are sites with no real place. They are sites that have a general relation of direct or inverted analogy with the real space of Society. They present society itself in a perfected form, or else society turned upside down, but in any case these utopias are fundamentally unreal spaces."*

> *"There are also, probably in every culture, in every civilization, real places – places that do exist and that are formed in the very founding of society – which are something like counter-sites, a kind of effectively enacted utopia in which the real sites, all the other real sites that can be found within the culture, are simultaneously represented, contested, and inverted. Places of this kind are outside of all places, even though it may be possible to indicate their location in reality. Because these places are absolutely different from all the sites that they reflect and speak about, I shall call them, by way of contrast to utopias, heterotopias."* – MICHEL FOUCAULT [142]

However, only heterotopias are describing real existing places and are thus relevant regarding social analysis.[143] Although there are hybrid forms between utopias and heterotopias. The virtual space of the mirror symbolises the unreal utopian as well as real heterotopian within the existence of the material mirror.[144]

Furthermore, Foucault outlines a short history of the social space that explains the particular function of heterotopian sites in their historical context.[145] To begin with, the dominant type of space in the Middle Ages was the *space of localisation*. Within a contrast of sacred and profane places, only the sacred ones were able to establish a social order.[146] With Galileo Galilei, the localised place was opened by the type of *expansion*. Foucault was not so much interested about heliocentrism, but the consequential theoretical constitution of an infinite space which eventually dissolved the idea of localised places.[147]

Since the modernity, *expansion* is again replaced by the relations of spaces: "*The site is defined by relations of proximity between points or elements; formally, we can describe these relations as series, trees, or grids. […] Our epoch is one in which space takes for us the form of relations among sites*".[148] However, Foucault always thinks space in a causal relation regarding time. He summarises nevertheless that a concern of space and time is rather a spatial problem. In his opinion, it is caused by the missed de-sacralisation of anything spatial[149]:

> *"These are oppositions that we regard as simple givens: for example between private space and public space, between family space and social space, between cultural space and useful space, between the space of leisure and that of work. All these are still nurtured by the hidden presence of the sacred. […] the descriptions of phenomenologists have taught us that we do not live in a homogeneous and empty space, but on the contrary in a space thoroughly imbued with quantities and perhaps thoroughly fantasmatic as well."*
> – MICHEL FOUCAULT [150]

[141]   Foucault, *Of Other Spaces*, 1984.
[142]   Ibid.
[143]   Dünne, *Raumtheorie*, 2006, P.292.
[144]   Neugebauer, *Von anderen Räumen*, 2007.

[145]   Dünne, *Raumtheorie*, 2006, P.293.
[146]   Dünne, *Raumtheorie*, 2006, P.293.
[147]   Neugebauer, *Von anderen Räumen*, 2007.
[148]   Foucault, *Of Other Spaces*, 1984.
[149]   Neugebauer, *Von anderen Räumen*, 2007.
[150]   Foucault, *Of Other Spaces*, 1984.

In summary, with Foucault's notion of heterotopias he established a category to understand space in the light of social change:

> "The space in which we live, which draws us out of ourselves, in which the erosion of our lives, our time and our history occurs, the space that claws and gnaws at us, is also, in itself, a heterogeneous space […] we live inside a set of relations."
> — MICHEL FOUCAULT [151]

His idea of space as *a network that connects points* is therefore a fundamental example for a relational perception of space. Generally, Foucault's spatial analysis of power and knowledge in modern social formations forms a specific methodology of mapping social forces. Deleuze famously named him thus a *new cartographer*.[152] As Robert Tally deduces, Foucault's cartography of power can be perceived as important tool for understanding ways in which cartographic imperative both emerges and exerts power.[153] This presents the fundamental critical approach regarding the chapter of *Maps don't work* within this thesis.

Henri Lefebvre

The social constitution of space becomes precisely describable by theories of spatial practice[notion of human acting mostly referred to Pierre Bourdieu's practice theory which were developed in the 1970s within a mutual dialogue in France.[154] The term of practice is related to Marxist theory construction which builds the foundation for the French philosopher Henri Lefebvre and his work of *production of space*.

Thus, he understands space as a part of production means and therefore related to economic infrastructure.[155] However, next to the analysis of Fordist-capitalistic space, he also dissolves his perception of space from a traditional Marxist theory and perceives space at the same time as a product of social practice. Three certain issues arise in this connection:

Fi.27 Henri Lefebvre portrait

[151] Foucault, *Of Other Spaces*, 1984.
[152] Deleuze, *Foucault*, 1988, P.44.
[153] Tally, *Spatiality*, 2013, P.121.
[154] Dünne, *Raumtheorie*, 2006, P.297.
[155] Ibid.

1.
> "Even the powerful myth of nature is being transformed into a mere fiction, a negative utopia: nature is now seen as merely the raw material out of which the productive forces of a variety of social systems have forged their panicular spaces. True, nature is resistant, and infinite in its depth, but it has been defeated, and now waits only for its ultimate voidance and destruction." — HENRI LEFEBVRE [156]

The physical and natural environment remains the original source of social production but even though as a evading passivity. Space of nature is more a resource that was only used for a social production of space and left it *voided and defeated*.

2.
> "I say each society, but it would be more accurate to say each mode of production, along with its specific relations of production." — HENRI LEFEBVRE [157]

Following Lefebvre, each society is producing its own space. He emphasises on the difficulty of analysing of social space because of its diversity:

> "Social space contains- and assigns (more or less) appropriate places to - (1) the social relations of reproduction, i.e. the biophysiological relations between the sexes and between age groups, along with the specific organisation of the family; and (2) the relations of production, i.e. the division of labour and its organisation in the form of hierarchical social functions."
> — HENRI LEFEBVRE [158]

Both production and reproduction are inextricable but a distinction helps to distinguish. Especially capitalism complicated the state of affairs and therefore he declares three interrelated levels must be taken into account:

> "(1) biological reproduction (the family)
> (2) the reproduction of labour power (the working class per se)
> (3) the reproduction of the social relations of production that is, of those relations which are constitutive of capitalism and which are increasingly (and increasingly effectively) sought and imposed as such." — HENRI LEFEBVRE [159]

[156-159] Lefebrve, *Production of Space*, 1991, P.31-32.

3. Lefebvre appreciated then the role of space within this tripartite ordering of things. The difficulty lies for him in the space that includes certain representations of this triplicate overlapping of production-reproduction-relations. The result of these representations is the maintenance of these social relations in a state of coexistence and cohesion. At the same time these resulting symbols or symbolisation have a obscuring function because they build their own symbolic spaces.

Summarising the above, he states an occurrence of a multitude of intersections with specific assigned locations. In addition, the representations of relations of production also occur in space in form of buildings, monuments and works of art. He consequently judges these spatial representations as accomplices of an expression of the power.

Lefebvre brings everything together with the idea of a dialectical interaction of the showed three issues. Thus, his constitution of space consists of three levels:

> *"perçu (perceived) - material aspect*
> *Spatial practice, which embraces production and reproduction, and the particular locations and spatial sets characteristic of each social formation. Spatial practice ensures continuity and some degree of cohesion. In terms of social space, and of each member of a given society's relationship to that space, this cohesion implies a guaranteed level of competence and a specific level of performance.*
>
> *conçu (comprehended) - meaning aspect*
> *Representations of space, which are tied to the relations of production and to the »order« which those relations impose, and hence to knowledge, to signs, to codes, and to »frontal« relations.*
>
> *vécu (lived) - spatiality of representations*
> *Representational spaces, embodying complex symbolisms, sometimes coded, sometimes not, linked to the clandestine or underground side of social life, as also to art (which may come eventually to be defined less as a code of space than as a code of representational spaces)."*
> — HENRI LEFEBVRE [160]

In the end, Lefebvre breaks with the common division of social and physical space. Rather, his perception of space is about the dialectic of all three productions of space. Space is both a physical and symbolic construction. Thus, space is not the container which includes the social life, but a product of social processes itself. Eventually, society doesn't appear in a given space, but society produces space on its own (social and political practice) which is an essential contribution to a relativistic perception of space. Lefebvre summarises his theory and states a certain incompleteness:

> *"I would argue, for example, that representations of space are shot through with a knowledge (savoir) – i.e. a mixture of understanding (connaissance) and ideology – which is always relative and in the process of change. Such representations are thus objective, though subject to revision."* — HENRI LEFEBVRE[161]

He also criticises that mostly not all three forms of spatial production are considered. Lefebvre states a predominance of the visual or geometric register thus the perceived space (*perçu*).[162] With a homogenous appearance of space, both lived experience and perceptions of space become antiquated. His approach of critique and analysis of capitalism contemplates this form as spatial production as late-capitalistic mode.

Lefebvre hopes for a synthesis of spatial practice and representations of space to mediate between daily life spaces and conceptual spaces within a *differential society*.[163] He particularly anticipates an artistic intervention, which was for example achieved with Jameson's aesthetic of cognitive mapping and is also an essential element of the grounding for the practical work within this thesis.

Generally, Lefebvre is a crucial initiator for a whole generation of neo-Marxist human geographers, like David Harvey, Manuel Castells and Edward Soja. What all of these theorists have in common is a postmodern variation of Lefebvre's thinking into a deconstruction of objective truth within geography.

[160]   Lefebrve, *Production of Space*, 1991, P.33.

[161]   Lefebrve, *Production of Space*, 1991, P.41.
[162]   Tally, *Spatiality*, 2013, P.118.
[163]   Lefebrve, *Production of Space*, 1991, P.54.

Next to Marxist theories of space, which focus on the capitalist impacts on spaces, thus a threatening homogenisation of space and the biased construction of space, there are also theoretical perceptions with different emphases. For example post-colonial theories got greater attention recently. Nevertheless, the focus of this thesis will remain on neo-Marxist approaches. Beside the purpose of focusing, neo-Marxist perceptions more so support the critical approach of this thesis and thus the conceptual framework.

After this outline of important theorists in the history of an occupation with spatiality in social and culture studies, this chapter wants to apply recent forms of the retraced theories on the developed structure of spatial models. Because the foundations of these theorists were previously explained in detail, the following overview will roughly concentrate on the essences regarding the notion of spaces of each theorist.

Absolute

Within Niklas Luhmann's theory of social systems, space is no particular issue. Similar to many theories before the spatial turn, he prefers time to space as an analytical category.[164] Therefore, this section will pragmatically and roughly examine his systems theory about this presumed omission in times of a renaissance of space and how it is grounded in an absolute perception of space.

Firstly, one has to comprehend how space occurs in Luhmann's texts when it occurs at all. Although he never wrote a theory about space, it seems that a spatial category became more and more necessary in his last works, especially regarding topics like regionalisation, globalisation and global society (*Gesellschaft der Gesellschaft* (1997) across from *Soziale Systeme* (1984)).[165]

Luhmann explicitly expresses a renunciation of old schools of thought and terminology.[166] This includes the notion of societies being independent from national boundaries.[167] Following him, the aim of systems theory is defining society, so that the borders of society are not dependent on space and time.[169] Consequentially, he demands a term of society that doesn't rely on physical borders at all, which follows in a theory of social systems that has no spatial references.[170]

He describes how boundaries in general are continual sociological occurrences, that are rarely spatial.[171] Society is the most comprehensive form of all social systems which includes all communications.[172] Communication happens only within society. Thus, communication constitutes society and is basically not limited to space – cosmopolitan – and, thus, completely separated from nature.[173]

[164] Schroer, *Räume, Orte, Grenzen*, 2006, P.132.
[165] Filippov, *Der Raum der Systeme und die großen Reiche*, 1999, P.353.
[166] Schroer, *Räume, Orte, Grenzen*, 2006, P.132.
[167] Weber, *Wirtschaft und Gesellschaft*, 1972.
[169] Luhmann, *Die Gesellschaft der Gesellschaft*, 1997, P.30.
[170] Luhmann, *Soziale Systeme*, 1984, P.555f.
[171] Schroer, *Räume, Orte, Grenzen*, 2006, P.132.
[172] Ibid.
[173] Ibid.

Luhmann describes a radical anti-humanistic, anti-regionalist and constructivist notion of society which he, however, does not assess to be universal.[174] He understands the aspatial notion of society as a result of a long process of emancipation from space over various epochs. Therefore, he analysed steps of differentiation with an increasing de-spatialisation. Due to the focus of this chapter regarding an absolute notion of space, these executions are not taken into consideration.

Clearly, spatiality is a problematic topic regarding Luhmann's systems theory. Mostly space is ignored, but if considered, space is related to the real physical space thus space as container. Consequently, Luhmann's taking over of Newton's notion of space let him become an appropriate representer of an absolute conception. Although this is a good example how an absolute notions of spaces comes about, one also has to mention Luhmann's apathy regarding space:

Hans Dieter Huber

The breadth and versatility of your topics is indeed amazing. There is hardly anything more than that you have not written about. Are there certain subjects that you are not interested in?

Niklas Luhmann

*I do not want to apodictically say **no interest**, but I always have difficulty with spatial orders for example. As much as I am interested in Brazil and the political situation there, but Brazil as a whole doesn't interested me. Or take the city of Bielefeld, this is no system. So all spatial, regionalising units do not interest me so much. How you think about space in relation to communication, that is, for example, such a topic.*

[174]   Luhmann, *Die Gesellschaft der Gesellschaft*, 1997, P.35.

[174]   *Texte zur Kunst*, Vol I. No. 4, 1991, P.121-133 (transl.)

Relative
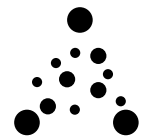
As mentioned the investigations of spatiality in the work of Michel Foucault and Henri Lefebvre inspired a whole range of neo-Marxist theorists. One of these gained particular significance. Edward Soja is a political geographer who initially coined the term of spatial turn in a headline of his work *Postmodern Geographies* from 1989 called *Uncovering Western Marxist's spatial turn*.[176] Seven years later he stated then the paradigmatic importance of the notion in *Thirdspace*:

"Contemporary critical studies have experienced a significant spatial turn. In what may be seen as one of the most important intellectual and political developments in the late twentieth century, scholars have begun to interpret space and the spatiality of human life with the same critical insight and emphasis that has traditionally been given to time and history on the one hand, and to social relations and society on the other."
— EDWARD SOJA[177]

The title of the book is also the name of the theory on which this section will focus. His well-known theory of *thirdspace* is a crucial contribution within human geographies.[178] Basically, Soja's idea of *thirdspace* combines aspects of the *real* and the *represented* spaces while also going beyond them: "*Simultaneously real and imagined and more (both and also …), the exploration of Thirdspace can be described and inscribed to »real-and-imagined« (or perhaps »realandimagined«?) places.*"[179]
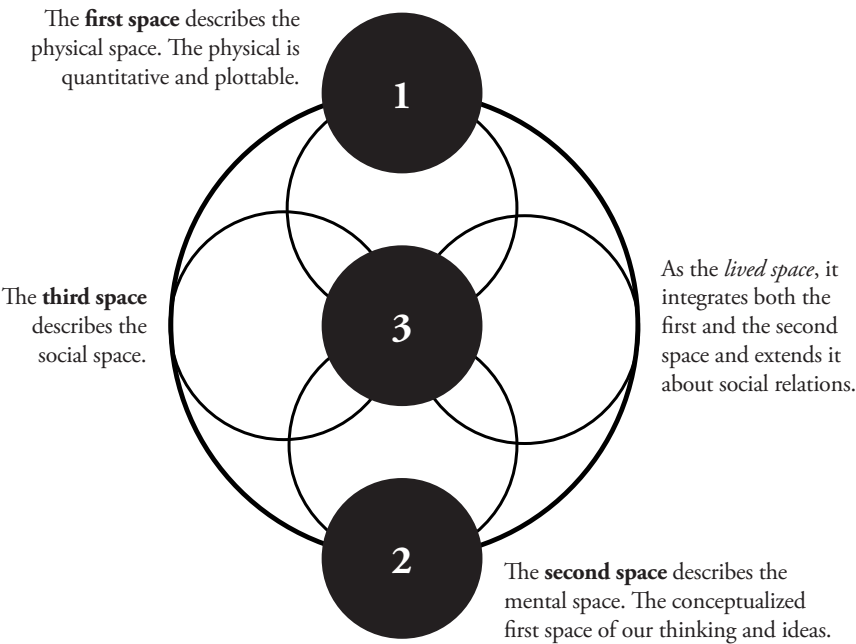
Further he explains that "*everything comes together […] subjectivity and objectivity, the abstract and the concrete, the real and the imagined, the knowable and the unimaginable, the repetitive and the differential, structure and agency, mind and body, consciousness and the unconscious, the disciplined and the transdisciplinary, everyday life and unending history.*"[180]

176   Soja, *Postmodern Geographies*, 1989.
177   Soja, *Thirdspace*, 1996.
178   Smith, *Society-Space*, 1999, P.12-22.
179   Soja, *Thirdspace*, 1996, P.57.
180   Ibid.

Thirdspace is explained as a concept that tries to overcome dualisms of space (materialism and idealism) and wants to imply *an-Other*:

I define Thirdspace as an-Other way of understanding and acting to change the spatiality of human life, a distinct mode of critical spatial awareness that is appropriate to the new scope and significance being brought about in the rebalanced trialectics of spatiality–historicality–sociality."
— EDWARD SOJA[177]

In summary, it is a comprehensive concept that tries to include spatial notions in *an-Other way* to appeal against determining boundaries and to promote an unrestricted flow of cultural existence. Soja's thirdspace refers to Michel Foucault's heterotopia but also in particular to Henri Lefebvre's tripartite production of space. He constructs his thirdspace from Lefebvre's triad of production of space:

The **first space** describes the physical space. The physical is quantitative and plottable.

The **third space** describes the social space.

As the *lived space*, it integrates both the first and the second space and extends it about social relations.

The **second space** describes the mental space. The conceptualized first space of our thinking and ideas.

Fi.28 Thirdspace explanation.
181   Soja, *Thirdspace*, 1996, P.57.

Summarising, he assumes that an traditional perception of space (first and second space) doesn't help to understand a modern globalised society. Following Soja, first and second space are bound to a particular social category, but his perception of space should include a variety of facets of social categories. A following hybrid third space can be thought as a dialectic of first and second space. Elemental values of both spaces are taken out and emerge into a new space with new values and perspectives.
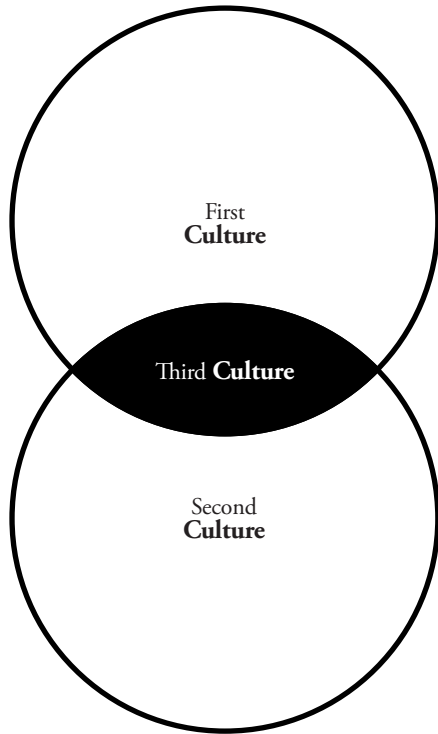
Essentially, the thirdspace is defined by a quantity of social values that cannot be contained in an absolute notion of space. Thus, this space corresponds to a relative notion of space. Eventually, the thirdspace theory could be able to explain complex phenomena regarding social processes. This is why the this theory creates the framework for a concrete geopolitical analysis regarding a relative notion of space later on in this thesis.

Fi.29 Thirdspace culture graph.

Relational
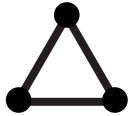
Manuel Castells is a Spanish sociologist and known for his work on the network society. As a student of Henri Lefebvre, he is naturally influenced by his work and thus also considered as a pioneer of the spatial turn.[182] Castells' work will be roughly examined by focussing on recurring spatial issues.

His concept of the *space of flows* describes the information society as a society in which places are organised as flows. (financial flows, information flows, image flows etc.) The term was originally coined 1989 in his work *The Informational City*. As Castells states it is an approach to *reconceptualise new forms of spatial arrangements under the new technological paradigm.*[183] With its demand for topicality, this approach seemed fitting regarding a modern perception of spatiality - to such an extent that this thesis is as a subtitle, a linguistic variation.

Furthermore, the network forms the spatial structure of the space of flows. The network distinguishes between here and there, however the distinction is relational.[184] Therefore, the *space of flows* links social contiguousness with a material basis. It consists both of communication systems, which interconnects cities, and transport systems like airports, train connections and highways: "*The material arrangements that allow for simultaneity of social practices without territorial contiguity. It is not purely electronic space* […] *It is made up first of all of an technological infrastructure of information systems, telecommunications, and transportation lines.*"[185]

The *space of flows* is dependent from technical developments and thus situated in a constant iteration. Thus, the structure of the networks is flexible and has fluid shape.

[182]   Soja, *The Socio-Spatial Dialectic*, 1980.
[183]   Castells, *The Informational City,* 1989, P.146.
[184]   Ibid.
[185]   Castells, *Grassrooting the Space of Flows,* 1989, P.19.

The nodes of the network are the interface which connects the network with the physical place. However, not the whole place offers a touchpoint for a global interconnection. It is only about the part of the places that supply values that are part of the network. An example is the networking of globally involved urban areas:

> *"For instance, financial networks – which is an easy example to understand – are made up of bits and pieces of different cities across the globe. The financial districts of New York, London and Tokyo are all part of the same city. They work symbiotic-ally. They connect with each other but also with Frankfurt and Amsterdam and so on. And to a large extent even La Paz, Bolivia, is part of it. A little bit of La Paz is in that global city because that is how lots of money (they do some good trading) circulates in these global networks."*
> — MANUEL CASTELLS[186]

Within Castells' notion one can recover the known conflict of space and time. As previously explained, space is perceived as a passive element, contrary to time as active element. Castells negates the replacement of space by time, because space is *the material support of time-sharing social practices that work through flows.*[187]

> *"Unlike most classical social theories, which assume the domination of space by time, I propose the hypothesis that space organises time in the network society."*
> — MANUEL CASTELLS[188]

He understands space as the material backing of the way people live within time, which also rejects the position of his teacher, Lefebvre, of a production of space through practises of conscious actors.[189]

Eventually, we can state that the *space of flows* is still bound to materiality like the real space that thus doesn't disappear.[190]

All in all, the space of flows forms the proven transnational (virtual) space. Additionally, with its network philosophy it is a suitable application of a relational notion of space.

The global flows also affect the spatial hierarchies of society. Following Castells' theory, spatial structures represent and manifestate social structures.[191] This is is property that regarding a critical neo-Marxist perspective which will be important regarding a geopolitical examination of notion of spaces.
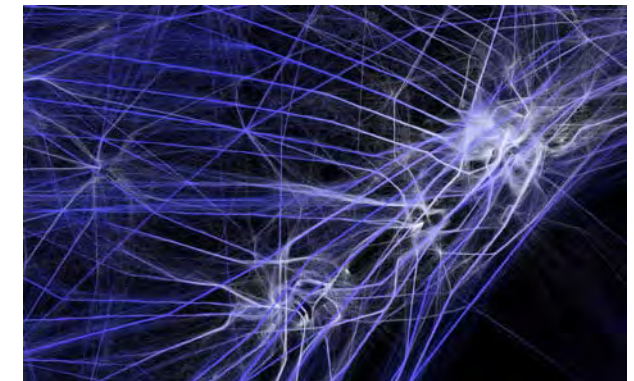
[186] Castells, *Local and Global*, 2003, P.54.
[187] Castells, *The Informational City,* 1989, P.138-149.
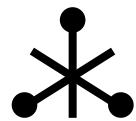[188] Castells, *The Informational City,* 1989, P.431.
[189] Hamedinger, *Raum, Struktur und Handlung als Kategorien der Entwicklungstheorie,* 1997.

Fi.30 Koblin, *Flight Patterns*.
[190] Döring, *Spatial Turn*, 2008, P.15.
[191] Hamedinger, *Raum, Struktur und Handlung als Kategorien der Entwicklungstheorie,* 1997.

Topological

As mentioned within the section of the topical notion of space, there are very few Western theorists that indicate a similar perception of space. One exception is the French sociologist Pierre Bourdieu with his theory of social spaces. Thus, this section especially wants to examine his notion of field regarding a topical perception of space.

His theory of social spaces consists of the two keywords of *field* and *habitus*. Habitus as a connection of individual actions and social structure, that organises individual actions under the rules of the collective.[192]

Thus, social space is the field that is constituted by differentiating habitual type of actions. Although not mentioned previously this social space can be better understood with Bourdieu's differentiation from the physical space. Again not the spatial structures determine social ones, but social conditions shape the physical space.[193] Following Bourdieu, such shapes to read the social structures from the physical space, like the prominent position of teacher represented by his podium.

Consequentially, he focuses on the relationship of space, power and social disparity. This distinction leads him to an analysis of the Marxist theory of class conflict.[194] He states that "*control over the space forms one of most privileged types of exercise of power.*"[195]

However, Bourdieu's social space as field remains quite abstract. Martina Löw's *Raumsoziologie* then again is based on his theory of field. Only by the complete overcoming of the physical base of nature as in the case of Bourdieu, it is possible to develop a social theory of space.[196] She emphasises on an overcome of the dualism of space (nature versus social space) in favour of a monism of social interaction space.[197]

Furthermore, a combination of modern Japanese philosophical theories, like the already introduced Nishida, to refine a topical notion of space could be gainful and will be tried by the application of Bourdieu's theory of field on the geopolitical analysis. Following his remarks that the field cannot be reduced to the containing interactions, instead it must be considered as a own quantity and *focus of research operations*.[198]

192   Bouveresse, *Praxis und Ästhetik. Neue Perspektiven im Denken Pierre Bourdieus*, 1993, P.14-32.
193   Schroer, *Räume, Orte, Grenzen*, 2006, P.89.
194   Bourdieu, *Sozialer Raum und Klassen*, 1985, P.7-46.
195   Bourdieu, *Physischer, sozialer und angeeigneter physischer Raum*, 1991, P.30.
196   Löw, *Raumsoziologie*, 2001, P.263-273.
197   Ibid.

Fi.31 Fischer, *A Week in the Life.*
198   Bourdieu, *Reflexive Anthropologie,* 1996, P.139.

Absolute

|

System Theory

Luhmann

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Relative

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Thirdspace

Soja

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Relational

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Space of Flows

Castells

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Topological

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Social Spaces

Bourdieu

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Fin

...this »national sociology'«is beset by a failure to recognise – let alone research – the extent to which existing transnational modes of living, trans-migrants, global elites, supranational organisations and dynamics of the world risk society determine the relations within and between nation-state repositories of power." – ULRICH BECK [201]

To sum up, this chapter illustrated a return of spatial theories in social and cultural sciences. Following Bertrand Westphal, this variety of theories that understand space as complex and heterogeneous phenomenon related to a postmodern world can be subsumed to the term of *geocriticism*.[199]

Focus of Geocritcism
1 – multifocalisation (multiple perspectives)
2 – polysensoriality (not only visual)
3 – stratigraphic vision (deterritorialised and reterritorialised)
4 – intertextuality (unbiased)

Obviously shaped by recent processes like globalisation, these theories break with the idea of unity of territory, identity and culture. As Ulrich Beck states, globalisation represents the message that society and state cannot be thought, organised and lived congruently.[200]

The development of global society is perceived as the reason for spatial categories to become superfluous. Instead only time can measure the global traffic of humans and data, thus space is dismissed. However, as shown with the spatial analysis of Luhmann's system theory, these who state a rejection from space follow rather the paradigm of nation states. With the exposing of this thinking as an absolute notion of space, a renunciation of space is a renunciation of nation states in reality. Again Ulrick Beck:

"My point involves the critique of methodological nationalism in the social sciences. My thesis is: »the zombie science« of the national that thinks and researches in the categories of international trade, international dialogue, national sovereignty, national communities, the »nation-state› and so forth, is a »science of the unreal« ...

But if the nation state is not the container then there is the question of another spatial perception which arranges social actions. Therefore, the relativistic theories of Soja, Castells and Bourdieu were introduced. From them, it can be concluded that the apparent devaluation of space is more a replacement of regional places through a perception of transnational spaces. However, one cannot talk about an atopic society because places can be part of the global space, too.

Nevertheless, it was also clearly shown that there is not a pure dominance of the relativistic notions and a total irrelevance of absolute notions of space. For example Georg Simmel relates to both perceptions and Bourdieu tries to combine them. Both of them are useful in specific cases. The absolute notion can be potentially used to analyse phenomena related to power and is also able to reduce complexity like how spatial and territorial metaphors are used to describe and order a fleeting present. (Metaphors within internet context: chatroom etc.) The relativistic notions of space with their action-theoretical approach emphasise on the creative chances and possibilities to produce space.

Eventually, one has to overcome the idea of the one right notion of space. Neither a determinism of space related to absolutistic notions or a voluntarism of space related to relativist perceptions is gainful. "*Depending on the task, the one or the other is suitable to understand certain sensuous experiences.*"[202] Following Schroer, Foucault's spatial principle of simultaneity obtained space itself. Within spatial theory it is about a parallel existence of different notions and perceptions of spaces.

To conclude, this thesis will apply this diversity of notion of spaces to exemplarily analyse social actions. In particular, the next chapter will deal with the understanding political spaces with the help of a spatial examination.

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[199]   Tally, *Spatiality,* 2013, P.113.
[200]   Beck, *Was ist Globalisierung?,* 1997, P.115.

[201]   Beck, *Cosmopolitan Sociology,* 2007.
[202]   Sturm, *Wege zum Raum,* 2000, P.87.

End Of Geopolitics

Introduction

The previous chapter dealt with the relation of physical and social spaces in general and thus remains quite abstract. Therefore, this chapter applies a specific and more tangible perspective. With a focus on political relations, the interplay between politics and space is examined.

Particular emphasis is put on how political artefacts locate in the physical space on the one hand, but also on which physical circumstances political artefacts are based. As reproduced in the last chapter, an irrelevance of space is often stated regarding the globalisation of economic and communication systems. A certain relevance of space is instead related to political appearances. However, the only mentioned political primitive of a nation state is not sufficient for this scope.

Another approach therefore is to explore how political thinking in form of "permanences of space" affects regarding physical effects.[203] After centuries of conquering and occupation, eventually the earth was purely covered by political spaces in form of nation states.[204] Besides this, there has always been spatial formations of political power: "*As to strongholds, what is suitable to different forms of government varies: thus acropolis is suited to an oligarchy or monarchy, but a plain to democracy; neither to an aristocracy, but rather a number of strong places.*"[205]

There are a variety of spatial elements that can be traced back to a particular political reign and their spatial representations. This can be illustrated with regard to architectural decisions of government buildings.[206] Transparent buildings present a transparency of a democratic model and fortified buildings rather dictatorial tendencies.

[203] Werber, *Permanenzen des Raums,* 2002, P.7-30.
[204] Schroer, *Räume, Orte, Grenzen*, 2006, P.185.
[205] Aristotle, *Politik*, 1996, P.235.
[206] Schroer, *Räume, Orte, Grenzen*, 2006, P.185.

Fi.34 Representation of power in Germany.

Fi.35 Representation of power in Northkorea.

Furthermore, political power is associated, almost identified, with a certain place. The White House or even just names of places like Berlin are synonyms for centres of power. The act of a revolutionary occupation of government buildings therefore gains a symbolic level.[207] Thus, places make politics tangible.

Additionally, political places can also be constructed. One knows constitutions like *Western world* or third *world*. This differentiation alone makes known specific forces of power which are implied within political spaces.

The theory of political thinking was always related to spatiality. From the question of how political actions are linked with an occupation of territory in ancient times, to the described territorial expansion and thus the appearance of a spatial imperialism in the modern era.[208] Moreover, with an increasing disentanglement of human actions from spatial conditions, a explicit discussion about how recent political action relate to geographical conditions arised in the 19th century.[209] This discussion led to the beginnings of the notion of geopolitics in the early 20th century.

The expression *geopolitics* was coined by Rudolf Kjellén in 1900.[210] In general geopolitics states an immediate relation between politics and space.

In detail, two contrary approaches can be derived. On the one hand geopolitics perceived as a *theory of political geography, that is based on a theory of environmental determinismism.*[211] Consequently the idea refers to a causal (pre)determination of human actions by space or nature. However, space determines the political events not directly, but conveys by its influence of the state.[212] Therefore, then again the state was understood as *organism* regarding Friedrich Ratzel.[213] Thus, Ratzel's social-Darwinistic thinking patterns within his political geography lead to a *geo-Darwisnism*.

[207]   Schroer, *Räume, Orte, Grenzen*, 2006, P.185.
[208]   Agnew, *Geopolitics*, 1998.
[209]   Dünne, *Raumtheorie*, 2006, P.372.
[210]   Kjellén, *Der Staat als Lebensform*, 1900.
[211]   Werlen, *Sozialgeographie*, 2000, P.383.
[212]   Werber, *Geopolitik*, 2014, P.9.
[213]   Werlen, *Sozialgeographie*, 2000, P.383.

Fi.36 Occupied government building Donetsk, Ukraine.

Although, Friedrich Ratzel, actually zoologist and defined as the *founder of discursivity*[214] of geopolitical thinking, stated that a perspective that is limited to *predefined programs of nature* [215] falls short. Determinism is not Darwinism. Indeed, Ratzel explains that the historical development of political lifeforms are constituted by biological laws of nature, but is thus not predetermined.[216] The political organism needs to adopt to space to prevent a collapse. Thus, space *itself* doesn't determine, otherwise a permanent *reshaping* of states while unchanging borders would not be possible.(For example island states)[217]

His concept of a dynamic use of geographical conditions already distinguished between place and space, thus introduced a relational notion of space. However, his notion of place was purely bound to states which brought him the criticism of determinism of later geographers and historians.[218] But still Ratzel is rated as a pioneer of human geography.[219] Even though Ratzel stated a concept of states as organisms that demand space, he denied an instrumentalisation of his spatial *laws* for politics that reduce an occupation of space beyond the state to a racial superiority.

Nevertheless, with Karl Haushofer, who was a co-founder of geopolitics and therefore referred to Ratzel, a direct impact on the policy of expansion of Hitler can be stated.[220] Although Haushofer regards geopolitics as a science in the service of politics and not passive observation, his historical appraisal is controversial.[221]

Furthermore, the time of 1915 to 1944 states an extensive geopolitical discourse of a imaginary political legitimacy of a German expansion explicitly related to a theory of racial superiority of *People without Space*.[222] As Haushofer describes the topic of lebensraum:

214   Foucault, *Was ist ein Autor?*, 1969, P.24f.
215   Werlen, *Sozialgeographie*, 2000, P.95.
216   Werber, *Geopolitik*, 2014, P.10.
217   Ratzel, *Politische Geographie*, 1903, P.210f.
218   Dünne, *Raumtheorie*, 2006, P.375.
219   Ibid.
220   Ebeling, *Karl Haushofer und seine Raumwissenschaft, 1919-1945*, 1994.
221   Korinman, *Quand l'Allemagne pensait le monde*, 1990, P.157.
222   Grimm, *People without Space*, 1926.

"In the big question of assembly of Blood and Soil in space to state, it is crucial that, despite all primacy of the blood, that the carrier of the blood and Volkstaat's will recognise the stage on which they have to play." – KARL HAUSHOFER[223]

Fi.37 Blood and Soil ilustration.

223   Haushofer, *Staat, Raum und Selbstbestimmung*, 1934, P.63–65.

Consequently, the foundations of a political thinking regarding space can be traced back to Germany. After its academisation and popularisation, geopolitical theories were abused by the Nazis with the known consequences. Therefore, geopolitical is connected to ethnical stereotypes, enemy images and a consequent reduction of complexity. [223] That is also the reason why geopolitic was discredited till the 1980s in Germany. [224] In general, geopolitics texts were often racist, sexist, nationalist, imperialist, bellicistic and propagandistic, but don't have to be exclusively.[225]

Next to the obvious renaissance of geopolitics, it developed further beyond a German academic context. Within a mode of Anglo-Saxon deconstruction, a ideology-critical and discourse theoretical approach of *critical geopolitics* was developed.[226] It represents a reflection of geographical restriction of any political actions within space.

In general, politics relate to space as a task of a collective connection. Certain decisions affect inhabitants of cities of regions of states. Geopolitic is thought in terms of nation states. Consequently, with the disappearance of (absolute) space examined in the last chapters, one can state the seeming disappearance of (geo)politics. A death of space means the synchronous death of politics.

The previously documented confusion of notion of spaces of course also happens in the context of political spaces. A conflict between absolutistic and relativistic notions of space receives components of real implications. Thus, this chapter will deal with the consequences of dis- and reappearing spaces on politics. Geopolitical thoughts still or more than ever influence today's acts of politics, which becomes significant with the example of Europe and related questions of belonging and rejection.

[224] Werber, *Geopolitik*, 2014, P.12.
[225] Dünne, *Raumtheorie*, 2006, P.372.
[226] Werber, *Geopolitik*, 2014, P.12.
[227] Ó Tuathail, *Critical Geopolitics*, 1996.

More specifically, the chapter is organised into three phases of a development of political spaces. Firstly, territorialisation as the process of forming nation states. Then, events that lead to a deterritorialisation of nation states and thus to a proclaimed end of space and politics. And finally, reterritorialisation as a term for a divers recompilation of spaces with different notions. The focus will be on the last phase, therefore the quadripartite structure of notions of spaces will be enriched with an appliance of new geopolitical theories related to thinking of critical geopolitics: Huntington's *Clash of Cultures*, Schivelbusch's *Seasteading in Cyberspace*, Negri and Hardt's *Empire and Multitude*, and Latour's *Facing Gaia*.

Territorialisation

(Origin of Nation States)

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Deterritorialisation

1. Economic Globalisation
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Reterritorialisation

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Fi.38 Progress of political spaces.

Territorialisation

To begin with the political order of the Middle Ages, which had not yet introduced the nation state, but consisted of many scattered centres of power (earl, nobility, classes and church) which existed side by side.[228] There was no central political power that held everything together.[229] Even after the appearance of the first states, they did not replace all previous forms of political organisation, instead the tribes and clans were competitive models.[230] On the whole, political entities were not that close together. In that time tribes had the need that their borders were not directly adjacent. A certain no-man's-land was intentionally kept which functioned like a neutral interspace.[231]

With the beginning of the modern era in Europe about 1500, also the modern state was also established. For this reason, the actual place of politics extracted. All space on earth became structured by the states.[232] Therefore, the occurrence of states is a development that transforms the scattered and selective political centres into adjoining and strictly delimited spaces of states.[233] Thus, the interspace became void and the territory stated the characteristic of states.[234]

Next to territoriality, another criteria is important: the monopoly on violence of states. On account of this exclusivity, a necessity of borders occurs regarding a variety of states. Eventually, every state sets itself apart from other states and thus rules a certain state territory.[235] Following Max Weber, the crucial components of states are state territory, state authority and constitutive people.[236] None of this components could be absent, otherwise it is just about a nation or ethnic group.[237]

Common to each component is the rule by a monopoly. The monopoly on violence regarding the state authority promises protection from violence and thus only the state is allowed to exercise force.[238] Through this expropriation, pacified spaces originate.[239] However, the national power that is saved within the states is used as violence to protect the external borders. Therefore, the nation state keeps peace inside and fights potential enemies at the external borders.[240] Altogether, this absolute notion of national spaces led to new dimension of brutality and, thus an unknown scale of human sacrifices.[241]

As the state has a monopoly on violence, it also has a monopoly on state territory. Following Georg Simmel, every territory belongs to only one state, thus every occupied national space is perceived exclusively.[242] Next to this, there is also a monopoly on the third component. Citizenship is also exclusive and therefore every citizen belongs to a specific state. Luhmann reveals the curious paradox of this relation. One should live, kill and die for the nation, but one cannot even know who is meant in particular.[243] One can speak of an *idealisation of the absent* [244] that must be made visible to make this *community of destiny* [245] imaginable.

Max Weber refers to the nature of construction of state, when he explains that nations are related to a bearable sense of solidarity with other people.[246] Indeed *bearable* is revealing. Thus, the idea of a state is not organic and not based on needs of citizens, instead it is a construction that seems attractive because of its approach of unity that differentiates between associated and foreign.[247] As a result, the state replaces variety with unity in terms of language, religion and other cultural elements and supports so homogeneity.[248]

[228] Schroer, *Räume, Orte, Grenzen*, 2006, P.189.
[229] Elias, *Über den Prozess der Zivilisation*, 1976, P.274f.
[230] Elias, *Die Gesellschaft der Individuen*, 1987, P.275f.
[231] Simmel, *Soziologie*, 1992, P.784.
[232] Breuer, *Der Staat*, 1998, P.119.
[233] Anderson, *Die Erfindung der Nation,* 1998, P.25.
[234] Schroer, *Räume, Orte, Grenzen*, 2006, P.190.
[235] Ibid.
[236] Weber, *Wirtschaft und Gesellschaft*, 1972, P.822.
[237] Schroer, *Räume, Orte, Grenzen*, 2006, P.190.

[238] Schroer, *Räume, Orte, Grenzen*, 2006, P.190.
[239] Elias, *Über den Prozess der Zivilisation*, 1976, P.320f.
[240] Schroer, *Räume, Orte, Grenzen*, 2006, P.190.
[241] Giddens, *The Nation-State and violence*, 1985.
[242] Simmel, Soziologie, 1992, P.784.
[243] Luhmann, *Die Politik der Gesellschaft,* 2000, P.211.
[244] Ibid.
[245] Schroer, *Räume, Orte, Grenzen*, 2006, P.192.
[246] Weber, *Wirtschaft und Gesellschaft*, 1972, P.528.
[247] Schroer, *Räume, Orte, Grenzen*, 2006, P.192.
[248] Ibid.

Furthermore, the state as a closed system also creates the opportunity of a direct national observation. Michael Mann explains that the new transport- and communication structures increase the ability of national surveillance and controlling.[249] Already in 1997 he noticed tendencies regarding a decreasing privacy as part of the development of the modern state, which were realised meanwhile. Nevertheless, this media is necessary to reach all citizens of a nation state and to maintain the *idealisation of the absent*.[250]

However, this exact media developed beyond national borders meanwhile. As stated in the previous chapters, the globalised infrastructures detached from the nation state and now even eliminates the notion of states. In general, the processes of globalisation generate problems that act inside a certain nation state but were created outside of it and thus are not solvable for the model of national sate.[251] Eventually, globalisation conquers the territorialisation of politics developed through nation states. Once more the equation of state and society and thus also of politics and state is declared as inappropriate.[252]

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[249] Mann, *Hat die Globalisierung den Siegeszug des Nationalstaats beendet?*, 1997, P.135f.
[250] Creveld, *Aufstieg und Untergang des Staates*, 1999, P.416.
[251] Schroer, *Räume, Orte, Grenzen*, 2006, P.194.
[252] Luhmann, *Die Politik der Gesellschaft*, 2000, P.14.

Deterritorialisation

Globalisation, the headword of the 1990s, describes a process of fading borders. This arises from an expansion and increase of communication structures on a global level and beyond national borders. It is "*a process (or set of processes) which embodies a transformation in the spatial organization of social relations and transactions - assessed in terms of their extensity, intensity, velocity and impact - generating transcontinental or interregional flows and networks of activity, interaction, and the exercise of power.*"[253]

Thus, the worldwide interchange evades from a control and design by states. Instead of remaining the believed *gatekeeper*, states become increasingly *gateways* for global expansions that are meant to be excluded.[254] In particular, three strings of a loss of importance and political reorganisation will be inspected in the following: economic globalisation, global migration, and new media and transport technologies.

Economic Globalisation

The most visible part of globalisation is targeting economic affairs, therefore Perraton describes the previously unknown dimension of global economic transactions.[255] However, international trading is not a new invention, so Brock states that there possibly were times when a global trade was even more distinctive than today.[256]

Although, the new geographical scales and quantitative densities combined with a global network result in political implications. Consequently, economic acting is getting highly independent from national frames, so that *national economies* become *ghost economies*.[257] Hence, it is not only a quantitative change but also a qualitative one, because the new transport- and communication structures enable a much cheaper progression in time and space.

Even though the apparent problem is the the developing globalisation, the actual issue is the decoupling of economy and politics. While the economy becomes non-territorial and expands globally, the sate remains territorial and thus immobile.[258] Commercial companies spread their activities across different countries that offer suitable (cheap) conditions, whereas states are still bound territorially and have to run after global events. Harvey therefore describes that the serious loss of power of states regarding financial politics found no balance in an appropriate internationalisation of politics.[259]

Once capitalism was able to free itself from the shackles of national boundaries, politics has two possibilities to react: either become global too, or get capitalism back into boundaries.[260] On the one hand, politics should dissolve the current unnecessary differentiation between internal foreign politics to be able to focus on a global scale, but a self-abolition of national politics seems unrealistic. On the other hand, states have to chum up to commercial companies to place them on their territory, what Baumann circumscribes as function of nation states that comes close to one of a interior decorator.[261]

Eventually, the economic globalisation is only the most visible example of a decreasing influence and framework for action regarding the nation state and thus an absolute notion of space.

[253]   Perraton, *Die Globalisierung der Wirtschaft*, 1998, P.167.
[254]   Schroer, *Räume, Orte, Grenzen*, 2006, P.195.

[255]   Perraton, *Die Globalisierung der Wirtschaft*, 1998, P.167.
[256]   Brock, *Die Grenzen der Demokratie*, 1998, P.275f.
[257-258] Schroer, *Räume, Orte, Grenzen*, 2006, P.196.
[259]   Harvey, *Die Postmoderne und die Verdichtung von Raum und Zeit*, 1989, P.75.
[260]   Schroer, *Räume, Orte, Grenzen*, 2006, P.197.
[261]   Baumann, *Ansichten der Postmoderne*, 1995, P.208.

Migration

Furthermore, the occurrences of migration processes, especially the recent popularised examples concerning the illegal migration to EU member states, pose the question about a belonging to certain states. Territorial state borders symbolise the claim of the state to control border crossing.[262] If the state loses this ability, it is equal to a loss of sovereignty.[263]

Despite all efforts of immigration laws and expansion of borders like the external borders of the EU, the outflows of refugees and thus the mixing of cultures cannot be prevented. However, if the territorial borders are unreliable, then the state needs to develop alternative possibilities that exclude migrants even if they manage to enter the state. Therefore, with the politicisation of opposites, a state can marginalise migrants on a cultural, political and social level.

Eventually, the territorial borders transform into borders of tolerance, legal recognition, political participation and cultural acceptance that turn an official inclusion into a factual exclusion.[264] In the end, this approach already gives an outlook on how absolute thought spaces can change within post-territorial circumstances.

[262]   Schroer, *Räume, Orte, Grenzen*, 2006, P.198.
[263]   Sassen, *Zur Einbettung des Globalisierungsprozesses*, 1998.
[264]   Schroer, *Räume, Orte, Grenzen*, 2006, P.198.

Fi.39 *Migration Flows*, New York Times.
Fi.40 Migration Mediterranean Sea.

New Transport and Communication Media

A particular part of the infiltration of nation states includes the new transport- and communication media. They are generally considered to be *space slayers*.[265] Although the transport- and communication before the late 20th century already had an influence on the density of space and time perceptions, and they never touched the idea of nation states.[266] However, newer quantitive developments like satellite technology, airship aviation and digital communication question this notion.[267] Also Niklas Luhmann describes the overlapping of lokal and global events:

> *"In principle, everyday one can see what happens elsewhere and indeed almost simultaneously in any case, regardless of the time you would need to travel to the scene. Spaces are thus visually and acoustically (and in this sense: private) understood from everywhere."* — NIKLAS LUHMANN [268]

Because of the now possible simultaneity of events and their coverage there is no *time-lag* anymore. Everyone experiences events immediately when they happen. Therefore, information doesn't know any borders and penetrates everywhere even without permission.[269] Thus, informations are even more unstoppable than migrants. For example, Giddens explains that radio and tv stations had a significant influence on the overthrow of East European regimes.[270]

It is possible to speak of a certain trend of dissolution of boundaries: "*The imagination of living in a closed and lockable place becomes everywhere experienceable fictional.*"[271] Thus, came the possibility of comparing and therefore a certain *visibility of living situations* raised in the age of globalisation.[272]

> *"In the past two decades, as the deterritorialisation of persons, images, and ideas has taken on new force, this weight has imperceptibly shifted. More persons throughout the world see their lives through the prisms of the possible lives offered by mass media in all their forms. That is, fantasy is now a social practice; it enters, in a host of ways, into the fabrication of social lives for many people in many societies."* — ARJUN APPUDAREI [273]

The opportunity of comparableness, here explicitly pointed out by Appudarei, could also lead to a stronger dissatisfaction and thus again to the already stated migration processes.

Eventually, there is also an endless list of influencing factors that proclaim an idea of the end of the nation state. However, all have a specific time-space-compression in common: McLuhan's global village. Eventually, there is only a presence (near) which eliminates the outer (far).[274] With regard to nation states, spaces become optical and acoustic visible from any position: a national violation of the right to privacy or a trespass of national scale.[275]

Consequentially, all internal policy matters become one of foreign policy. In the end, it constitutes a global right for intervention. Bill Clinton draws the conclusion:

> *"There is no longer a clear division between what is foreign and what is domestic. The world economy, the world environment, the world AIDS crisis, the world arms race: they affect us all. Today, as an older order passes, the new world is more free but less stable."* — BILL CLINTON [276]

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[265] Schroer, *Räume, Orte, Grenzen*, 2006, P.199.
[266] Anderson, *Die Erfindung der Nation*, 1998, S.179f.
[267] Ibid.
[268] Luhmann, *Die Politik der Gesellschaft*, 2000, P.220.(transl.)
[269] Schroer, *Räume, Orte, Grenzen*, 2006, P.200.
[270] Giddens, *Jenseits von Links und Rechts*, 1994, P.156.
[271] Beck, *Was ist Globalisierung?*, 1997, P.132.
[272] Schroer, *Räume, Orte, Grenzen*, 2006, P.201.

[273] Appudarei, *Globale ethnische Räume*, 1998, P.22.
[274] Schroer, *Räume, Orte, Grenzen*, 2006, P.202.
[275] Ibid.
[276] Clinton, *Inaugural Address*, 1993.

For this reason, it reasonable to state an assertion of Foucault's panoptic principle.[277] A subsequent global surveillance refers to a great weakness of the current status of states. If the nation state is not able anymore to protect all material things included and is also not able to control when it is observed. Then the state cannot promise safety, which is what its sovereignty is based on. Already 40 years ago Karl W. Deutsch stated this failure of the nation state:

> *"In spite of its triumphs, the nation state failed. It [...] failed to what the founders of the American republic and John Locke perceived as the most natural and most fundamental function of its government: to safe the life of its inhabitants. In case of a global war no state is able to protect its capital, big cities and families of the ruling elite."*
> — KARL W. DEUTSCH[278]

Particularly because safety cannot be guaranteed, it is staged in media-effective actions of symbolic politics.[279] Finally, these are *deflection tactics* which distract from the fact that governments are not able to guarantee secure existences within a democratically constituted society.[280] Apart from states which want to transform into a totalitarian surveillance state, but even for them safety is of course not achievable.[281]

The crucial factor regarding the spatial approach of this thesis is the tendency of politics to search for spatial solutions for social problems. For example, crime fighting happens often in a particular stereotypical part of a city, and inappropriate slums are getting physically framed.

In the end, the phenomenon is not fought but territorial arrangements are created that isolate the problem spatially.[282] To conclude, the nation state responds to an increasing deterritorialisation with a obviously helpless adherence on spatially absolute solutions.
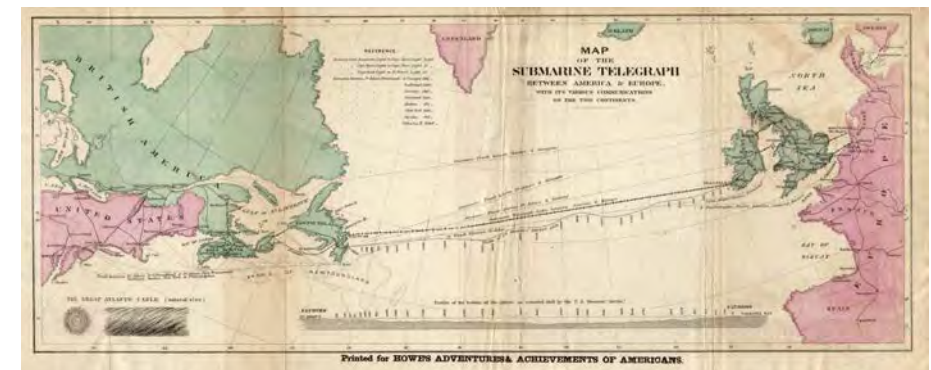
Fi.41 Trans-Atlantic Cable Route 1858.

277   Schroer, *Räume, Orte, Grenzen*, 2006, P.203.
278   Deutsch, *Nationenbildung, Nationalstaat Integration*, 1972, P.214. (transl.)
279   Schroer, *Räume, Orte, Grenzen*, 2006, P.203.
280   Baumann, *Die Krise der Politik*, 2006, P.203.
281   Ibid.
282   Schroer, *Räume, Orte, Grenzen*, 2006, P.205.

All executions can be summarised as an extensive failure and helpless actionism of nation states. Nevertheless, there is no sight of an abolition of the state either. Instead it has to handle a relativisation of its sovereignty.[283] The state has no unrestricted authority of its borders anymore and, thus, the state is more so in the role of reacting to occasions. It develops from a decision-maker to being affected.[284]

Although, a strict *farewell to the state* goes far beyond the realistic circumstances to an obvious loss of sovereignty is.[285] As usual within an absolutistic mindset, a hasty connection of space and territory is the case here as well. Because of a combination of politics and state, the disappearing concept of states seems equal to the end of (geo)politics. Geopolitics as political geography loses ground regarding a global communicating and transnational global society.[286] As an example, Guéhenno cannot imagine politics without the nation state:

> *"Everything changed when human activity liberates itself from space; when the mobility of the population and the economy makes nonsense of geographical demarcations. The spatial solidarity of territorial communities is disappearing, to be replaced by temporary interest groups. Now, the nation-state, in its pretension to combine in a unique framework the political, cultural, economic, and military dimensions of power, is prisoner to a spatial conception of power, even as it tries to redistribute its competences according to a federal principle. Space has ceased to be the pertinent criterion. Will politics survive a similar revolution?"*
> — JEAN-MARIE GUÉHENNO[287]

Another comment from Berger: "*The nation is about to return to the historical stage, as it is still widely identified as the most powerful community in memory. But what is returning is significantly different from the national self-definitions that dominated the scene in the late 19th and early 20th centuries.*"[288] Rather following Ingnatieff, states could be integrated in a transnational political and economic world order which is structured by international human rights and environmental organisations like the United Nations, World Trade Organisation or the International Criminal Court.[289]

283 Schroer, *Räume, Orte, Grenzen*, 2006, P.205.
284 Ibid.
285 Albrow, *Abschied vom Nationalstaat*, 1998.
286 Werber, *Raumvergessenheit oder Raumontologie, Latour oder Luhmann?*, 2012.
287 Guéhenno, *Das Ende der Demokratie*, 1996, P.37.
288 Berger, *A Return to the National Paradigm*, 2005, P.673.
289 Ignatieff, *Empire Amerika?*, 2003, P.29.

Altogether, the concept of deterritorialisation ignores the fact that borders, after an actual disappearance, are reconstructed again. Indeed, old absolute notions of space are removed, but there are new relativistic forms of political spaces which are located above and below the nation states. Therefore, the next section will deal with this reorganisation of political structures in particular.

In addition, new tendencies of geopolitics support a notion of a construction of spaces. In detail, movements like the *critical geopolitics* state a social construction of geopolitical entities.[290] An old geopolitics with a positivistic approach of space determinism loses its meaning.[291] The notions of new geopolitics overcome the *trivialisation* of absolute space and develop relativistic ideas like transnational network and help how to think of this reorganisation of political structures.[292]

> *"The world has become a placeless atopical sea."*
> — HELMUT WILKE[293]

290 Dalby, *Geopolitics, Knowledge, and Power at the End of the Century*, 1998, P.312.
291 Werber, *Raumvergessenheit oder Raumontologie, Latour oder Luhmann?*, 2012.
292 Luhmann, *Die Gesellschaft der Gesellschaft*, 1997, P.166.
293 Wilke, *Atopia*, 2001, P.175.

Reterritorialisation

After the previous section documented an irrelevance of space and a consequent identity crisis of politics, however the circumstances of delimitation allow new approaches to experience occurring borders and real spaces. Deterritorialisation is followed by reterritorialisation, thus despatialisation becomes a (re)spatialisation.[294]

Once more the emerging spatial implications can be classified according to the already known differentiation of absolutistic and relativistic systems of space. The current fragile situation of the nation state arises from the fact that it is caught in between the two concepts of space.[295]

Furthermore, the shift towards reterritorialisation can be related to a particular geopolitical event:

> *"America did not change on September 11.*
> *It only became more itself."*
> — ROBERT KAGAN[296]

Following Robert Kagan, the September 11 attacks arrange the United States idea of themselves as the one power of the world and thus to *solve the problems of the world*.[297] The instruments, therefore, are found in a *revolution in military affairs, that could change the very nature of the way wars are fought*.[298] This turn can be outlined by Carl Schmitt's term of *spatial revolution* which changes the notion of geopolitical for organisational and technical reasons.[299]

Fi.42 *9/11* Brooklyn waterfront.

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[294]   Schroer, *Räume, Orte, Grenzen*, 2006, P.207.
[295]   Schroer, *Räume, Orte, Grenzen*, 2006, P.208.
[296]   Kagan, *Of Paradise and Power*, 2003, P.85.
[297]   Ibid., P.94.
[298]   Ibid., P.92.
[299]   Schmitt, *Land und Meer*, 1942, P.103.

Following, the attacks of the terrorist network of *al-Qaeda* at September 11, 2001 highlight within the semantics of space a historical turning point.[300] They are considered as an example that the transnational networks didn't make space obsolete and that the question of location and tracking is still existential, as executed with the targeted killing at the *global war on terror*.[301]

Especially, with the example of drone wars, the avant-garde of *revolution in military affairs*, one could assume that this new technologies and media confirm the de-spatialisation and removal of political distinctions (outside/inside or policy/military).[302] On the other side, every drone usage requires localisation of enemies, which is done by the help of the civil infrastructure of a *global search network*.[303] Neither the weapons (drones), nor the targeting (global networks) are limited by the nation state.

Similar to the terrorist networks, secret services also fight *secret wars* with drones and command units beyond national laws.[304] Consequently, on the basis of a mutual global scale and approach of *hors-la-loi*, Schmitt states a *total war*.[305] *Total* in the sense of a global reachability for all attacks on all places and materiality from both sides, which ends in a global confrontation with no places of safety.[306] Thus, if no state can assure a protection from terrorists, then all efforts of prevention against terroristic danger go together with a decrease of national sovereignty.[307]

Altogether, in a *post-9/11* scenario the idea of deterritorialisation is regarded as obsolete.[308] Kleinschmidt therefore says that it is not possible to state a loss of importance of space, instead the relevance of space cannot be derived from a notion of territorial states, but has to be newly identified.[309] As an example, the geopolitical interpretation of the asymmetrically, globally led and regionally manifested confrontations:

"Geographical framing is an essential element of this form of geopolitical discourse and has arguably become more so following 9/11, as the world is divided into zones (for instance, the axis of evil) and dangers identified and located therein. Those acts of identification and location contribute more generally to the production of identity/difference and help secure particular national identities."
— DITTMER AND DOODS[310]

Nowadays, the global data networks, which were thought as the redemption of geopolitics and space in general by intellectuals in the 1990s, are used to identify threats like terrorists, specifically global threats.[311] In conclusion, new geopolitical circumstances affirm the concept of a reterritorialisation and, thus, offer an approach to frame the (re)appearance of concurrent notion of spaces.

In general, the following section will use the quadripartite structure of this thesis to identify the underlying perceptions of space by documenting abstracts of each phenomena of reterritorialisation. Then, each part is enriched with popular forms of recent geopolitics which will function later as fundamental bases for the visual abstractions.

[300] Werber, *Geopolitik*, 2014, P.151.
[301] Schneckener, *Transnationaler Terrorismus*, 2006.
[302] Schmitt, *Der Begriff des Politischen*, 1932, P.11.
[303] Krishnan, *Gezielte Tötung*, 2001, P.82f.
[304] Werber, *Torture or only Mistreatment?*, 2008, P.152.
[305] Schmitt, *Der Begriff des Politischen*, 1932, P.34,43,65.
[306] Ibid., P.34.
[307] Werber, *Torture or only Mistreatment?*, 2008, P.153
[308] Dalby, *Geopolitics, Knowledge, and Power at the End of the Century*, 1998, P.308.
[309] Kleinschmidt, *Politische Räume, Großräume und Weltgesellschaft*, 2008, P.73.

[310] Dittmer et al., *Popular Geopolitics Past and Futute*, 2008, P.438.
[311] Krishnan, *Gezielte Tötung*, 2012, P.95-105.

Renaissance of Space
– Absolute

Starting with the phenomenon of a renaissance of the container model. Despite all implications of globalisation, one can still, or directly because of it, identify attempts to obtain or reconstitute an absolute notion of space. Global interactions and a constant confrontation with the foreign lead to the need of delimitation and isolation.

There are two opposing approaches with a mutual origin of the loss of the nation state. One way to overcome the weakness is to strengthen sovereignty by merging intended groups of states to *supranational* states like the European Union. The different direction is to focus on regional and local forces by dividing states through secession movements like events that happened around the group of Catalans. Eventually, the question of spatial safety is also addressed on a very private level. Through gated communities an apparent sense of security is developed for the smallest possible and thus self-manageable space.

1. Fortress Europe

Europe is an exemplary appearance for a recent reterritorialisation based on an absolute notion of space. Instead of the original nation states, an alliance of states to a supranational state constitutes the hope of problem resolution. The basic idea behind a group like the European Union is that a democratic policy is also adaptable beyond the nation state.[312] This perspective also includes solidarity towards foreigners that ended with the *national garden fence*.[313]

In the case of a supranational state this solidarity has to expand over the constituted area and citizens[314], but still ends at another border, in the case of an even bigger one, the European Union. Eventually one can state that the stronger the delimitation from outside, the greater the apparent solidarity inside.

2. Aggressive Localism

On the contrary, the are tendencies regarding an isolation and delimitation, while focussing on the local and regional become visible. In the face of distance and unknown, the desire of communitarianism rises. Although the invoked regional traditions and identities mostly don't exist anymore, people cultivate and synthesise their homogenous society.[315]

Eventually, in contrast to the combining supranational states, these secession movements try to divide the container into at least two other containers, similar to a cell division.[316]

Fi.43 EU-frontier South Spain.
Fi.44 *PEGDIA* demonstrations.

[312] Habermas, *Jenseits des Nationalstaats?*, 1998, P.95.
[313] Krishnan, *Gezielte Tötung*, 2012, P.14.
[314] Habermas, *Jenseits des Nationalstaats?*, 1998, P.150.

[315] Anderson, *Die Erfindung der Nation*, 1998, P.182.
[316] Schroer, *Räume, Orte, Grenzen*, 2006, P.217.

3. Gated Communities

Following the idea that control over a certain territory constitutes a way to exert influence or power[317], there are tendencies of turning public territorial space into a private space. The so-called *gated communities* disconnect from society and state institutions, and thus, dissolve the nation state from the inside.

In this way escape and retreat spaces come into being and shelter homogenous and manageable communities which want to be protected from unpredictable encounters with foreigners.[318] The missing safety of the state is compensated by a private territory, private houses or even the tries to surveil import and export processes of the individual body.[319]

Similar to the fortress Europe, eventually every armament of borders will be confronted with even greater efforts to cross borders. Therefore, the image of Europa, as well as smaller fortresses of gated communities, fail due to reality.[320] The crucial factor is however not success, but the pure fact that such isolation attempts are undertaken.

The politics of isolation result in the creation of an absolute notion of spaces. Although they are doomed to fail within an all through relativistic and intertwined world, absolute spaces are the concrete resistance to globalisation.

Fi.45 Gated Communty, California.

[317]   Lacoste, *Geographie und politisches Handeln*, 1990, P.29.
[318]   Schroer, *Räume, Orte, Grenzen*, 2006, P.217.
[319]   Ibid.
[320]   Ibid.

Absolute – Theory – Huntington

A fitting geopolitical theory to the concept of a renaissance of the container model forms this thesis of Samual Huntingtons's *clash of civilisations* from 1993. It states a classical neo-geopolitical, but very successful discourse. For example, George W. Bush was heavily influenced by Huntington's thesis regarding his *war against terror*. [321]

Huntington negates the idea of a de-spatialised topology of a network, but predicts a worldwide *war* of *geopolitical* entities.[322] He calls these entities *major civilizations*[323], which Carl Schmitt coined with the term of *Großraumordnungen*.[324]

In the post-Cold War world, his world order is organised along *cultural lines of battle*, which separate a few spacious *spheres of influence* that again are dominated by *core states of civilisations*.[325]

Huntington's theory is thus a consequent further development of the previously reproduced German geopolitics, which is grounded in his approach of naturalisation of these conflicts.[326] Consequently, Huntington states that is a *natural result* of an *expansion* of a certain power to grasp at *hegemony*.[327]

[321]   Salter, *The Clash of Civilisations and the War on Terror(ists)*, 2003.
[322]   Hardt et al., *Empire*, 2003, P.50f.
[323]   Huntington, *The Clash of Civilisations*, 1998, P.28.
[324]   Schmitt, *Völkerrechtliche Großraumordnungen mit Interventionsverbot für raumfremde Mächte*, 1991.
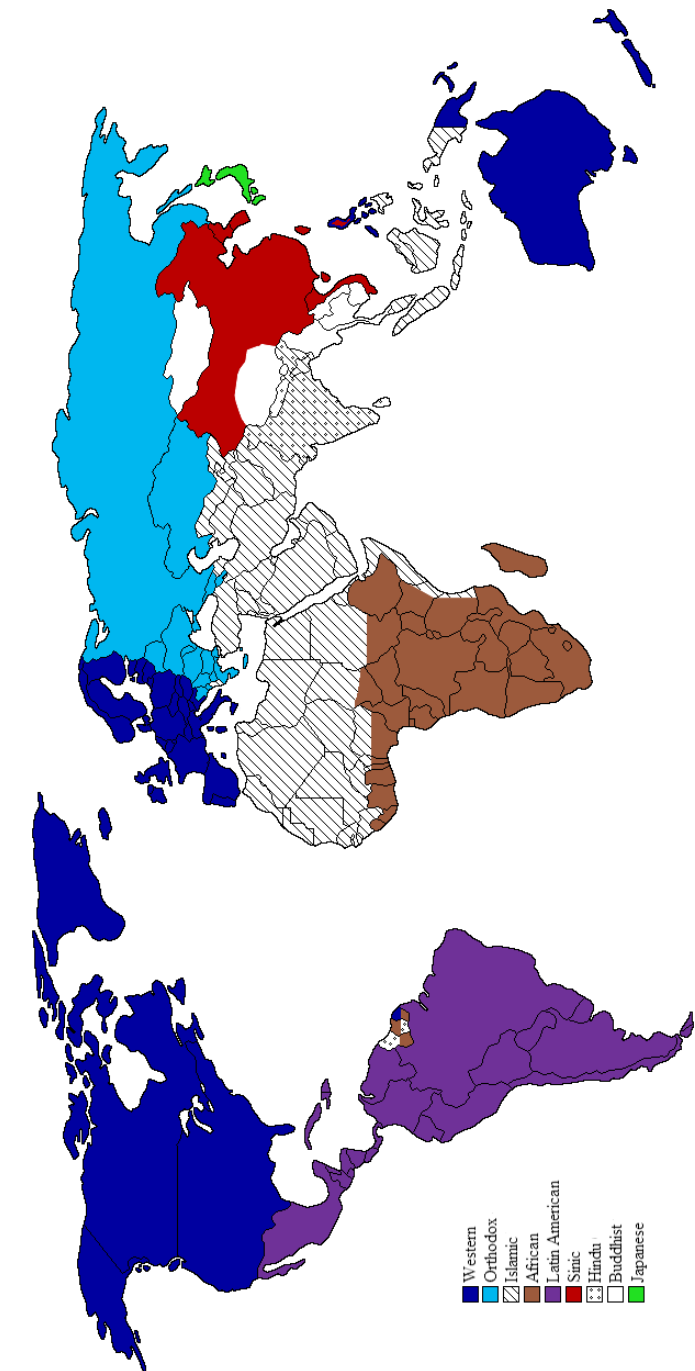[325]   Huntington, *The Clash of Civilisations*, 1998, P.247.
[326]   Haushofer, *Kulturkreise und Kulturkreisüberschneidungen*, 1934.
[327]   Huntington, *The Clash of Civilisations*, 1998, P.370.

They against *us* states a seemingly simplistic explanation.[328] All other political, economical, cultural, historical and social factors are ignored.[329] Eventually, it follows an exculpation of political acting, which not only justifies the *war on terrorism* as fair but also as indispensable.[330]

In conclusion, Huntington's notion expands the initial nation state into spacious civilisations. On the basis of this spatial determinism, modern global conflicts are reduced through an ignoring perspective to a simple *we*-against-*them*-notion. As a characteristic example for an absolute geopolitical notion, Huntington's clash of cultures will be updated with recent *civilisations* within the practical work.
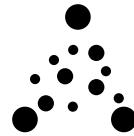

Fi.46 Clash of Civilisations following Huntington.

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328 Ervand, *The US Media, Huntington and September 11*, 2003, P.541.
329 Werber, *Geopolitik*, 2014, P.168.
330 Ervand, *The US Media, Huntington and September 11*, 2003, P.533.

Farewell to Space – Relative

The next section deals with the phenomenon of a farewell to the container model. The following appearances of spaces break with the absolute notion and are rather relativistic forms of space. In particular, global cities, transnational and virtual spaces are considered.

1. Global Cities

The occurrence of *global cities* counters the assumption of an irrelevance of space and the end of cities.[331] Saskia Sassen states that significant parts of the information economy are stationary.[332]

Although, global cities are located within nation states, they create with other global cities a multinational network of the incorporated companies, which are not dictated by national politics.[333] Global cities are *strategic places* that control and organise the international financial markets and thus create several local stations within an otherwise virtual economy.[334]

However, not all parts of a city belong to the global city. Only relevant places and their inhabitants are important. Thus, a global city is also a *dual city* that lost its middle class.[335] On the one side, this cities support processes of gentrification and secession, which leads to a separation of city dwellers.[336] Following Castells, one part continuously travels between the global parts of cities, while the other part is getting stuck: "*The elites are cosmopolitan, the masses are place bound*".[337] Nevertheless, this duality uncovers at least the situation of the powerless and therefore Saskia Sassen hopes for help for minorities and homeless people through this new presence.[338]

[331]   Schroer, *Räume, Orte, Grenzen*, 2006, P.208.
[332]   Sassen, *Wirtschaft und Kultur in der globalisierten Stadt*, 1994, P.73.
[333]   Schroer, *Räume, Orte, Grenzen*, 2006, P.208.
[334]   Sassen, *Wirtschaft und Kultur in der globalisierten Stadt*, 1994, P.73.
[335]   Schroer, *Räume, Orte, Grenzen*, 2006, P.209.
[336]   Albrow, *Auf Reisen jenseits der Heimat*, 1997, P.310f.
[337]   Castells, *Die zweigeteilte Stadt*, 1991, P.69.
[338]   Sassen, *Wirtschaft und Kultur in der globalisierten Stadt*, 1994, P.24.

Eventually, these social circumstances have the potential to polarise political conflicts.[339] Baumann's split of the world society into the residents of time and the residents of space is becoming very clear by the structure of global cities.[340]

Fi.47 Global City Incheon, South Korea.

[339]   Schroer, *Räume, Orte, Grenzen*, 2006, P.209.
[340]   Baumann, *Schwache Staaten*, 1997.

2. Transnational Social Spaces

The international flows of migration reach not only quantitative, but also qualitative, a new dimension.[341] So far, migration was the process of decanting of some humans from one container to another. As of late, the changes for the arrival and origin region are displaced by a third transnational and social space.[342]

According to Pries, the previous social interrelations of arrival and origin region span new social spaces between and above them.[343] On the one hand, migrants move spatially-geographically to another state, but on the other hand they are culturally bound to their home state: transmigrants lead a life that takes places here and there.[344]

This approach of interchange would not be possible without the new transport- and communication structures.[345] They support an unending relationship between arrival and origin regions by helping to exchange traditional and cultural values through the internet, television, telephone etc. Thus, media not only overcomes space, but also creates space.[346]

However, transnational social spaces are not about an explicit import of cultural fragments, but a formation of a *thirdspace*, in the sense of Edward Soja, based on this exchange. This *thirdspace* consists of elements of arrival and origin spaces and hence builds a new combination of a hybrid space. Regarding the migrants: they live in two worlds at the same time, without really belonging to one in their entirety.[347] Another status description of what it means to live in a post-national society.

3. Virtual Spaces

Another new space presents the cyberspace, which expands a spatial notion beyond the nation state as well. As introduced in the beginning, the postdigital focus of this thesis negates the cyberspace as a conception of the internet-positivistic theorists of the 1990s, however virtual spaces always relate to the *real* world in a specific way, which are the focus of this section.

The basic point of internet-critiques like Morozov is that the internet doesn't create a new virtual space, but purely follows the laws of the *real* world. One can rather talk about an additional layer of spaces of perception, communication and acting.[348]

This concludes in a perceived *double existence* of spaces. Indeed, the *virtual* and the *real* space remain connected. All digital activities are never detached from the geographical space. A virtual perception always requires material resources as well as the human body as an interface between *real* and *virtual*.[349]

Eventually, the *virtual spaces* shouldn't be regarded as alternate opposite to *real* world, instead the decisive factor is the increasing overlapping of *real* and *virtual* reality, which can be deduced to a concurrence of absolutistic and relativistic notions of space.[350]

[341] Schroer, *Räume, Orte, Grenzen*, 2006, P.210.
[342] Ibid.
[343] Pries, *Transnationale Räume*, 1998, P.63.
[344] Beck, *Was ist Globalisierung?*, 1997, P.58.
[345] Pries, *Transnationale Räume*, 1998, P.77.
[346] Schroer, *Räume, Orte, Grenzen*, 2006, P.210.
[347] Ibid.

[348] Schroer, *Räume, Orte, Grenzen*, 2006, P.212.
[349] Ibid.
[350] Ibid.

Relative – Theory – Schivelbusch

This section relates the general farewell of the container model to a relative notion of space. Since the pure relative perception is a less dominant model within the relativistic models because it originated from the separation of an absolute notion, a significant geopolitical interpretation of a relative perception can hardly be found. Nevertheless, Wolfang Schivelbusch's work *Perfidious Albion* therefore provides at least some indications.

He states that after the already mentioned pacifistic and post-souverain fantasies of the internet, a worldwide war of secret services is happening now 100 years after the outbreak of the First World War, which he claims with the term of an Anglo-Saxon *seasteading of the cyberspace*.[351] Instead of an approach of global *networking of informations flows* which concludes in the statement of "*the threat of war [...] becomes a thing of the past*"[352], Schivelbusch emphasises the *importance of geopolitics*.[353]

His term of seasteading is based on Carl Schmitt's notion that seasteading as an equivalent to the spatial conquest of land seizure.[354] Schmitt wrote that sea power is also global power because it dominates the global transportation regarding the British Empire.[355] Schivelbusch's next step is to replace the world seas with the new virtual and comprehensive space of cyberspace and the British Empire with the United States.[356]

The United States as the creators of the internet have a strong technological advance which let him summarise that as long as the cyberspace stays a sea, it will "*despite all European efforts [...] remain American.*"[357] Eventually, he declares two opponents in the recent post-Snowden era: on one side the global power of *WASP* (White Anglosaxon Protestants) and on the other side the European *universal helplessness*.[358] However, he doesn't take the final step of a declaration of enmity.[359]
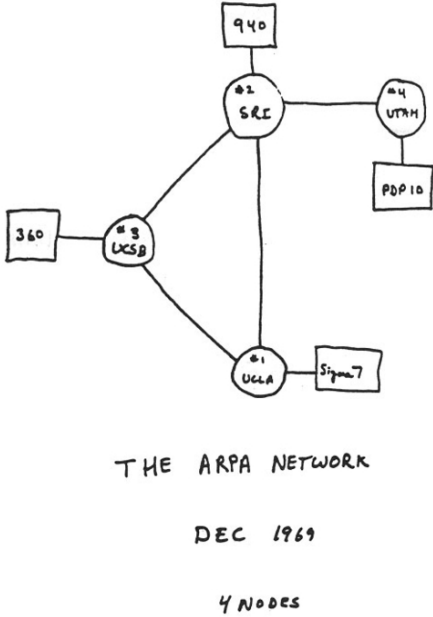
In the end, Schivelbusch's deduction of Schmitt's notion of seasteading to an emergence of a clear friend-foe mindset within times of global surveillance disclosures stays quite individual. However, it is essential to point out that in times *post 9/11* the relative structures of the internet are consequently power structures. Therefore, a relative notion of space is crucial to understand the recent forms of modern geopolitics.

Altogether, all presented types of spaces have in common that they don't fit into an absolute perception of space. Instead of an irrelevance of space, the reorganisation was pictured to some degree. They work both global and local, are embedded in certain nation states but are globally active beyond them.[360] Thus, this interaction leads to *hybrid spaces*.
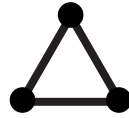
However, such spaces are not determined, rather constructed through social actions. Despite the perception of *virtual spaces*, they are still bound to a territorial embedding.

The development of these spaces result in new forms of politics. Questions of identity, publicity and spheres of influence occur. Detailed answers are related to a more concrete formation of this new spaces, which are concerned in the next two sections.

Fi.48 First Internet Map, *ARPANET*, 1969.

[351] Schivelbusch, *Perfides Albion*, 2014, P.32-37.
[352] Dalby, *Geopolitics, Knowledge, and Power at the End of the Century*, 1998, P.308.
[353] Schivelbusch, *Perfides Albion*, 2014, P.32-37.
[354] Ibid.
[355] Schmitt, *Land und Meer*, 1942, P.87.
[356] Schivelbusch, *Perfides Albion*, 2014, P.35.
[357] Ibid, P.37.
[358] Ibid, P.33-34.
[359] Werber, *Geopolitik*, P.163.
[360] Schroer, *Räume, Orte, Grenzen*, 2006, P.213.

The Future of the Nation State
– Relational

This section deals with the possible future of the nation state. After showing its farewell and renaissance, which resulted in a parallel existence of various spatial notions, the nation state is therefore still relevant.

One can state a decreasing of the claim to sole representation, instead the relational aspects of politics increases: next to nation states, there are occurring different actors like social movements, non-governmental organisations or human rights organisations.[361] Thus, the situation of the nation state equals the described historical beginning, when states were in competition with tribes, alliances and the nobility.

However, the discussion of a loss of sovereignty of states and thus of a loss of influence of politics is bound to the notion of a primacy of politics.[362] Only with this notion of primacy, a replacement of the nation state is necessary. Furthermore, sovereignty of states has never been endless, thus recent losses should not be overestimated.[363]

On the contrary, in many cases the nation state remains topical. For example, in the case of creating legal rules on areas that were perceived as private matter for long time[364], whether it be violence in partnership, child abuse or public smoking etc. Additionally, the possibilities of data retention and surveillance programs of nations were never that far developed.[365]

Altogether, the nation state is by no means at its end, however the question therefore is in which form the state will continue. Whether it remains the old container (classical state) or it adopts to the new spatial orders and becomes an equated component (new state). Both variants are possible.

[361]   Schroer, *Räume, Orte, Grenzen*, 2006, P.219.
[362]   Schwengel, *Die Globalisierung mit europäischem Gesicht*, 1999, P.103.
[363]   Bernauer, *Staaten im Weltmarkt*, 2000, P.64f.
[364]   Mann, *Hat die Globalisierung den Siegeszug des Nationalstaats beendet?*, 1997, P.136.
[365]   Schroer, *Räume, Orte, Grenzen*, 2006, P.220.

Relational – Theory – Hardt and Negri

In the first case, the container space becomes one of many spatial formations. A prominent example is the formation of classical states in Israel. Consequently, the arising conflict is one of two different models of space. The second model considers space as overlapping entities which enable a simultaneous multiple use. In the example of Israel Rabbi Frumans suggested to constitute "*two states on the same territory. Israel in Palestine and Palestine in Israel.*"[366] Indeed, reality shows that the practice of such a notion of space is a far cry from its realisation.

Nevertheless, one can implement a geopolitical rereading of Michael Hardt's and Antonio Negri's study *Empire* as a foundation of a relational perception of political spaces. Their theory in turn relates to the already explained concept of *space of flows* from Manuel Castells, which focuses on effects of urbanisation, rather than focusing on a concrete political prediction.

They claim that Huntington's theory is locked into *the old paradigm of world orders*; *9/11* especially disproved his *clash of civilisations*.[366] Within a new world order of *global vision* his notion of *civilisations* doesn't matter anymore.[368] Their perspective of an *empire* reaches further than Huntington would ever have expected.[369]

The term of *empire* describes neither the United States, United Kingdom nor any cultural spheres, but a global, post-sovereign, governmental, neo-liberal and capitalistic regime.[370] Following them, the empire cannot be framed with relied *evaluation criteria of modernity*, just like *global civil wars* or the antagonist of the empire: the multitude.[371]

The definition of Negri's and Hardt's *multitude* is similar to what the *United States Department of Defense* determines as the *post 9/11* situation: "*The Westphalian world order is being challenged by a new form of insurgency - transnational, distributed, networked.*"[372] The opponent of the *empire* is no state, rather it can be described as changing phases of a *nebulous-structured, transnational, militant,* […] *terrorist,* […] *stateless insurgent enemy*.[373]

[366]   Broder, *Alles oder nichts*, 2000, Spiegel.
[367]   Hardt et al., *Empire*, 2003, P.52.
[368]   Ibid.
[369]   Ibid.
[370]   Werber, *Geopolitik*, 2014, P.168.
[371]   Hardt et al., *Empire*, 2003, P.48,54,371f.
[372]   Bureau of Political-Military Affairs, *Counterinsurgency in the 21st Century*, 2006.
[373]   Kraner, *Al Qaeda in Iraq*, 2005, P.14.

Thus, both empire and multitude can be perceived as transnational spread networks, which Negri and Hardt abstract in a cybernetic and entomological metaphor of *swarm (intelligence)*.[374] Next to the multitude, also the global counterinsurgency forms up under the name of *revolution in military affairs* (RMA) as a distributed network and opposes the multitude.[375]

Finally, the diagnosis of Negri and Hardt is one of a heading towards a state of war in which network forces of the imperial order are confronted with hostile networks.[376] They speak of an *epoch of network battles of the multitude*.[377] This *postmodern warfare* [378] integrates every social sector, every technology and can neither spatially nor temporally be limited.[379]

Altogether, Negri and Hardt proclaim a *permanent and general state of emergency*.[380] In a spatial context, the notion of networks or swarms removes spatial differences on both sides of the global antipodes: empire (counterinsurgency) and multitude (opposition).[381]

> *"It has in fact become a general condition in this era of asymmetrical conflicts that enemies and threats to imperial order tend to appear as distributed nerworks rather than centralised and sovereign subjects."*
> — MICHAEL HARDT AND ANTONIO NEGRI[382]

Hence, geopolitics as a *theory of borders* is not necessary anymore, but an *imperial geopolitics* which focuses on network-like structures of power is particularly relevant.[383] "*All wars today tend to be netwars.*"[384] In the end, the geopolitical conflict of empire and multitude represents the differentiation of friend and enemy and thus the essentials of politics.[385]

374   Hardt et al., *Empire*, 2003, P.371.
375   Ibid., P.77.
376   Ibid., P.80.
377   Ibid., P.101.
378   Ibid., P.57.
379   Ibid., P.22.
380   Ibid., P.22.
381   Kraner, *Al Qaeda in Iraq*, 2005, P14.
382   Hardt et al., *Empire*, 2003, P.72.
383   Ibid., P.356.
384   Ibid., P.73.
385   Werber, *Geopolitik*, 2014, P.172.

> *"Political, economic, and social crises accumulate one on the other and link to each other in insolvable knots. They send ripples, waves, and monsoons of crisis and rupture across the oceans: across the North Atlantic from North America to Europe, across the South Atlantic from Latin America to Africa, across the Indian Ocean from the Arab world to South Asia, across the Pacific from East Asia to the Americas."*
> — MICHAEL HARDT AND ANTONIO NEGRI[386]

To summarise, the theoretical part of the section of relational spaces showed that most conflicts today arise from a conflicting notions of spaces. The container model is still used to determine absolute spaces, albeit the relativistic models are more relevant regarding new social and political structures. Thus, one can state that most conflicts are *spatial-use conflicts*.[387]

> *"The attempt of an inclusive nation-building is almost always doomed to failure in post-imperial space."*
> — HERFRIED MÜNKLER[388]

Eventually, with the geopolitical theory of *empire and multitude* by Negri and Hardt, a way was introduced how such new global non-national conflicts can be thought by an abstraction into networks. This explicit relational model of geopolitical space constitutes therefore the concrete template of the practical execution of this thesis.
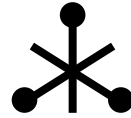

Fi.49 Paglen, *Predator*, 2010.

386   Hardt et al., *Empire*, 2003, P.388.
387   Hammerich et al., *Freizeit – oder ein Beispiel für fast beliebige Problemzuschreibungen*, 1999, P.393.
388   Münkler, *1914, 2014*, 2014, Die Zeit.

Not Space, but Spaces
– Topological

The previous sections showed that theories of deterritorialisation and globalisation enthusiasts falls short regarding their prediction of an end of space and politics. Wherever a border disappears, another is established elsewhere. Similar to a law of entropy, borders don't vanish, instead they change places and their appearance to less evident borders.[389]

Thus, borders and consequently spaces are not determined, but elements of a constant discussion and processes. One can state a diversification of spaces instead of an end. Spaces become an option rather than a specification.[390] Spaces, themselves, have to become the analytical category as well, not only what exists or happens inside them.

Furthermore, with a loss of importance of geographical distance, the possibility of a choice of places increases. Thus, it was concluded that an element which is selectable automatically diminishes in value.[391] However, there is no relation of eligibility and irrelevance.[392] Instead, the space, due to its comparability with other spaces, gains in importance. Companies search for adequate locations within states and cities and travellers increase their awareness for the essential.[393] Next to the diversification there is furthermore a specialisation of space.

Consequently, this eligibility is strongly perspective. How borders are perceived is depending on the individual situation: for example, migrants or refugees possibly sense borders like insuperable walls, whereas mostly tourists or ambassadors estimate the crossing of borders as pure formality.[394]

Additionally, the new transport- and communication structures don't compensate space but lead to a mutual increase of range and spatiality. Because one is able to communicate and travel everywhere, the question of the actual location becomes increasingly significant.

Moreover, in a globalised world the question of the origin occurs more frequently. In a way of perceiving, everyone could live and comes from everywhere.[395] Places of origin become hardly definable and thus increasingly important within communications.[396]

YOU ARE HERE

[389-392] Schroer, *Räume, Orte, Grenzen*, 2006, P.223.
[393] Harvey, *Die Postmoderne und die Verdichtung von Raum und Zeit*, 1994, P.60,63.
[394] Balibar, *Grenzen und Gewalten*, 1997.

Fi.50 You Are Here.
[395] Schulze, *Milieu und Raum*, 1993, P.196.
[396] Schroer, *Räume, Orte, Grenzen*, 2006, P.225.

Topological – Theory – Latour

In a purely geopolitical perception, this diversity of spaces can be related to the topological notion of space. Therefore, this section applies Bruno Latour's theories of geopolitics to the idea of diversity. Since the topological model is another network-related variation within relativistic notions, Latour's theory is also differentiated from the polycentric model of Negri's and Hardt's notion of *empire and multitude*.

Negri and Hardt stated the perception of "*our planet as diseased object and the global crisis* [...] *as its symptom.*"[397] Thus, the whole world becomes a *political object* following Ratzel.[398] This metaphorical layer ends with Bruno Latour, when he proclaims that the planet earth is actually shocked by a *geopolitical conflict* which could end its destruction.[399]

He refers to the notion of Anthropocene which describes radical changes of the conditions of life on Earth by processes like global warming. Following Latour, the upcoming war is about these conditions and the geopolitical spaces will distinguish between *enemy and friend*.[400] The new geological era of Anthropocene is defined according to the *Subcommision Quaternary Stratigraphy*:

> *"... in which many geologically significant conditions and processes are profoundly altered by human activities. [...] The beginning of the »Anthropocene« is most generally considered to be at c. 1800 CE, around the beginning of the Industrial Revolution in Europe (Crutzen's original suggestion) [...] The »Anthropocene« has emerged as a popular scientific term used by scientists, the scientifically engaged public and the media to designate the period of Earth's history during which humans have a decisive influence on the state, dynamics and future of the Earth system. It is widely agreed that the Earth is currently in this state.*" — BRUNO LATOUR[401]

Latour's connection of historical geology and geopolitics is quite unfamiliar. In his *Grifford Lectures*, he constructs this notion from epistemological questions to political questions in several steps. In the sense of a symmetrical anthropology, the earth develops from an object of sciences (nature) to an actor who is connected with humans and non-humans (Gaia).[402]

As Latour states based on the *Actor-Network Theory*, that it has been seen that the scientific expertise of thousand of researchers could not help to stop the looming ecological cataclysm, because they are affected by several influences. Moreover, on a political level almost no efforts have been made, which is fittingly called the *climate weirding*:

> *"Climate weirding is probably the best documented, most objectively produced piece of knowledge."*
> — BRUNO LATOUR[403]

He describes that necessary decisions cannot be expected from the sciences. Instead, it is only a political task. Therefore, he quotes Carl Schmitt, who said that a truly poltical question never could be solved by *remarks of uninvolved or impartial third*. Instead, it could only be decided politically, in times of the world society through a war against the political enemy.[404] The necessary decisions cannot be expected from the sciences, but from politics, in detail geopolitics.[405]

If the own being is at stake, then it comes to the differentiation of friend and enemy, and potentially a war becomes a *real possibility*[406]:

> *"People no longer fight for or against science: they decide for themselves where, with whom and with which agencies they wish to live, which oikos they are ready to defend against which other oikos."*
> — BRUNO LATOUR

In contrast to Negri and Hardt, Latour's geopolitical opponents are not networks, but collectives which gather and mobilise their agents.[408] In detail he asks three questions to clarify the circumstances of a war which should save the earth (Gaia): what is the threat to our existence? who are the enemies? which geopolitic is necessary to win the war?[409]

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397   Hardt et al., *Empire*, 2003, P.388.
398   Ratzel, *Politische Geographie*, 1903, P.409.
399   Latour, *Facing Gaia*, 2013, P.97,118,120.
400   Ibid., P.3,12.
401   Ibid.
402   Werber, *Geopolitik*, 2014, P.175.

403   Latour, *Facing Gaia*, 2013, P.132.
404   Schmitt, *Der Begriff des Politischen*, 1932, P.20f.
405   Latour, *Facing Gaia*, 2013, P.100,132f.
406   Schmitt, *Der Begriff des Politischen*, 1932, P.21.
407   Latour, *Facing Gaia*, 2013, P.131.
408   Werber, *Geopolitik*, 2014, P.177.
409   Ibid.

The *threat* is the earth itself:

> *"Whereas Gaia could be taken as having a somewhat leisurely pace, to the point of being considered as some sort of homeostatic system maintaining equilibrium over immensely long geological time spans, it has taken on — because of this sudden change in ‚human dimension — a feverish form of palsy, falling catastrophically from tipping point to tipping point, from one positive feedback to the next, in a rhythm that frightens climatologists even more with the publication of each new data set."*
> — BRUNO LATOUR[410]

However, the earth is no large-scale technology, so that positivistic *geo-engineering* approach would end in a nature dominated by technology and sciences.[411] Gaia is in danger, but the way of dealing with this problem is not scientific but political:

> *"If Nature known by the sciences is no longer the ultimate referee able to settle conflicts, then politics has to take over and the common world has to be progressively composed."*
> — BRUNO LATOUR[412]

Latour takes over the differentiation of friend and enemy from Carl Schmidt's definition as outermost level of intensity of *relation or division, association or dissociation*.[413] Latour understands *associations* in the sense of the Actor–network theory: "*associations between humans and »non-humans« in a continous way!*"[414] On the other hand, he understands *dissociations* as: "*what distinguishes friends from foes*"[415], which thus leads to a confrontation of *masses of agencies*.[416] Eventually, actor–networks, which are collectives of human and non-human agents[417], wage war against each other. Even the earth is involved, whether as Gaia (collectives of human and non-human agents) or as nature (object of sciences).[418]

410 Latour, *Facing Gaia*, 2013, P.80.
411 Ibid., P.66.
412 Ibid., P.8.
413 Schmitt, *Der Begriff des Politischen*, 1932, P.14.
414 Latour, *Facing Gaia*, 2013, P.125.
415 Ibid., P.136.
416 Ibid., P.137.
417 Ibid., P.137.
418 Werber, *Geopolitik*, 2014, P.177.

One who wants to save the world has to take sides:

> *"Schmitt's choice is terribly clear: either you agree to tell foes from friends, and then you engage in politics, sharply defining the borderlines of real enough wars – »wars about what the world is made of« – ; or you shy away from waging wars and having enemies, but then you do away with politics, which means that you are giving yourself over to the protection of an all-encompassing State of Nature that has already unified the world into one whole, a State that should thus be able to resolve all conflicts from its disinterested, neutral, over-arching third party view – sub specie aeternitatis, sub specie Dei, sive Naturae, sive Spherae. […] The second solution would of course be better, I agree – I am not a bellicose person myself – but only providing that such a State exists."*
> — BRUNO LATOUR[419]

Altogether, not only humanity but the whole earth takes part in conflicts for the *new geopolitics of the Anthropocene*.[420] "*This is where geo-politics takes a new meaning: masses of agencies are given a voice.*"[421] This multitude of voices is what Latour means by Gaia. They got to war as collective of collectives, network of networks.[422]

Those who deny the concept of Gaia relates Latour to the enemy: "*those who, having denied Gaia's sensitivity, listen to the call of the Devil*".[423] This symbolic charge of goddess (Gaia) and her enemy the devil (evil) leads to suggestion of a *political theology* and thus a *secular power* of Gaia.[424] Following Schmidt, when he describes that all concise terms of a modern state theory are secularised theological notions.[425]

Finally, Latour's vision of a new geopolitics implies that there is no neutrality. Every actor, human and non-human agents, is whether friend or enemy. Therefore, the whole world is politicised: "*a new form of non-national power having a stake in geopolitical conflicts*".[426] This conflict that involves the whole space and all life on earth leads to the essential question of life and death and thus includes the *real possibility of the physical death* in *war*.[427]

419 Latour, *Facing Gaia*, 2013, P.105.
420 Ibid., P.3.
421 Ibid., P.137.
422 Werber, *Geopolitik*, 2014, P.180.
423 Latour, *Facing Gaia*, 2013, P.96.
424 Ibid., P.8.
425 Schmitt, Politische Theologie, 1934, P.43.
426 Latour, *Facing Gaia*, 2013, P.120.
427 Ibid., P.102.

As a result of this global war, the space itself (*soil*) is attributed with a power to act.[428] The network of agents mobilises also telluric forces: "*Far from being the »land-appropriation«, the Landnahme celebrated by Schmitt, it is rather the violent re-appropriation of all Humans titles by the land itself.*" [429]

To conclude, Latour's notion of Gaia's geopolitics helps to perceive space as a network-formation of friends and enemies. However, his notion of network is based on a actor-network theory, instead of purely polycentric opposition of political actors. The space itself gets a political influence. Thus, his model fittingly describes a topical notion of space, whereby the political structures consist of human as well as non-human entities and hence act as an affecting spatial field.

Fi.51 Feuerbach, *Gaia*, 1875.

428   Latour, *Facing Gaia*, 2013, P.120.
429   Ibid., P.134.

Absolute	Relative	Relational	Topological
Clash of Civilisations	Seasteading in Cyberspace	Empire and Multitude	Facing Gaia
Huntington	Schivelbusch	Hardt and Negri	Latour
121	*128*	*131*	*136*

Fin

Instead of considering the space as obsolete, the multi-level aspect, the plurality, of spatial relations should be more focused. There is a constructed localisation for every element in space, whether it be persons, political/economical organisations or non-human elements. Thus, it is not the end of space, but a constant reinvention of space.

The epoch of modernity concentrated on time and thus a permanent replacement and overcoming of epochs by another.[430] The epoch of space changes this diachrony to a synchrony. There is a parallel existence of culture, governments, values and norms that cannot be framed into an absolute container, but produce spaces themselves.[431] These spaces are overlapping, closely intertwined and coexisting spatial formations of different sizes. The principle of parallel existence thus also effected space itself, hence space cannot be thought singular but only plural anymore.[432]

From this, neither a spatial determinism (container) nor a spatial voluntarism (virtual space) are expedient. As long as nationalism dominates, no political problems will be solved. Absolute spaces always entail a certain passivity, which is characteristic for recent politics like the European politics and result in various movements of right-wing populism that are based on an absolute notion of space, for example the *PEGIDA* movement in Germany. Famously, also Nietzsche addressed the problem of determinism of absolute political space in the section *The New Idol* of his work *Thus Spake Zarathustra*:

430   Schroer, *Räume, Orte, Grenzen*, 2006, P.226.
431   Ibid.
432   Ibid.

"Somewhere there are still peoples and herds, but not with us, my brethren: here there are states.

A state? What is that? Well! open now your ears unto me, for now will I say unto you my word concerning the death of peoples.

A state, is called the coldest of all cold monsters. Coldly lieth it also; and this lie creepeth from its mouth: »I, the state, am the people.«

It is a lie! Creators were they who created peoples, and hung a faith and a love over them: thus they served life.

Destroyers, are they who lay snares for many, and call it the state: they hang a sword and a hundred cravings over them.

Where there is still a people, there the state is not understood, but hated as the evil eye, and as sin against laws and customs.

This sign I give unto you: every people speaketh its language of good and evil: this its neighbour understandeth not. Its language hath it devised for itself in laws and customs.

But the state lieth in all languages of good and evil; and whatever it saith it lieth; and whatever it hath it hath stolen.

False is everything in it; with stolen teeth it biteth, the biting one. False are even its bowels.

Confusion of language of good and evil;

this sign I give unto you as the sign of the state. Verily, the will to death, indicateth this sign! Verily, it beckoneth unto the preachers of death!

Many too many are born: for the superfluous ones was the state devised!

See just how it enticeth them to it, the many-too-many! How it swalloweth and cheweth and recheweth them!

»On earth there is nothing greater than I: it is I who am the regulating finger of God.« — thus roareth the monster. And not only the long-eared and short-sighted fall upon their knees!
Ah! even in your ears, ye great souls, it whispereth its gloomy lies! Ah! it findeth out the rich hearts which willingly lavish themselves!

Yea, it findeth you out too, ye conquerors of the old God! Weary ye became of the conflict, and now your weariness serveth the new idol!

Heroes and honourable ones, it would fain set up around it, the new idol! Gladly it basketh in the sunshine of good consciences,- the cold monster!

Everything will it give you, if ye worship it, the new idol: thus it purchaseth the lustre of your virtue, and the glance of your proud eyes.

It seeketh to allure by means of you, the many-too-many! Yea, a hellish artifice hath here been devised, a death-horse jingling with the trappings of divine honours!

Yea, a dying for many hath here been devised, which glorifieth itself as life: verily, a hearty service unto all preachers of death!

The state, I call it, where all are poison-drinkers, the good and the bad: the state, where all lose themselves, the good and the bad: the state, where the slow suicide of all – is called »life«.

Just see these superfluous ones! They steal the works of the inventors and the treasures of the wise. Culture, they call their theft – and everything becometh sickness and trouble unto them!

Just see these superfluous ones! Sick are they always; they vomit their bile and call it a newspaper. They devour one another, and cannot even digest themselves.

Just see these superfluous ones! Wealth they acquire and become poorer thereby. Power they seek for, and above all, the lever of power, much money – these impotent ones!

See them clamber, these nimble apes! They clamber over one another, and thus scuffle into the mud and the abyss.

Towards the throne they all strive: it is their madness – as if happiness sat on the throne! Ofttimes sitteth filth on the throne.- and ofttimes also the throne on filth.

Madmen they all seem to me, and clambering apes, and too eager. Badly smelleth their idol to me, the cold monster: badly they all smell to me, these idolaters.

My brethren, will ye suffocate in the fumes of their maws and appetites! Better break the windows and jump into the open air!

Do go out of the way of the bad odour! Withdraw from the idolatry of the superfluous!

Do go out of the way of the bad odour! Withdraw from the steam of these human sacrifices!

Open still remaineth the earth for great souls. Empty are still many sites for lone ones and twain ones, around which floateth the odour of tranquil seas.

Open still remaineth a free life for great souls. Verily, he who possesseth little is so much the less possessed: blessed be moderate poverty!

There, where the state ceaseth – there only commenceth the man who is not superfluous: there commenceth the song of the necessary ones, the single and irreplaceable melody.

There, where the state ceaseth – pray look thither, my brethren! Do ye not see it, the rainbow and the bridges of the Superman? –
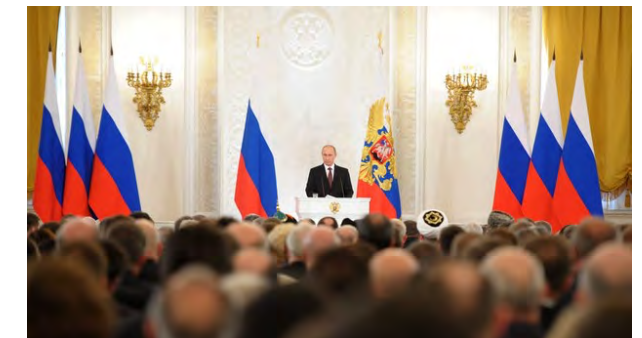
Thus spake Zarathustra."
– FRIEDRICH NIETZSCHE[433]

[433]   Nietzsche, *Thus Spake Zarathustra*, 1891.

Nevertheless, the fragile condition of spatial multiple references (region-state-Europe-world society) strengthen increasingly. From a political perspective, new geopolitics occurred which critically deal with the dialectical interleaving of spatialisation and despatialisation. Through this diversity, the simultaneity of notion of spaces leads to political conflicts, where no neutral position is possible, following Latour. However, every notion of space has its justification and is reasonable in a certain way.

"Over the last twenty years, European politics have ignored classical geopolitics – the battle for seas and rivers, pipelines and nuclear power plants, ships and tanks. Now we are paying the bill for such neglect. True, the world has changed, it has gone beyond the rift between East and West, Communism and Democracy – and maybe also beyond Fundamentalism and Laicism. These conflicts are now pervasive within national states and across geographical boundaries. They have become global issues; they are cultural conflicts rather than political ones."
– FEDERICO CASTIGLIONI [434]

Since the approach of geopolitics is one of the explained consequent reduction of complexity, the glance at the map, the distribution of resources, topographies and demographies should simplify and lead to a certain evidence.[435] Subsequently, the leading medium of a practiced geopolitics has always been the map. Thus, a particular discipline of *critical cartography* questions the dominant paradigm of maps regarding hidden power relations. By applying these methods to the practice of this thesis, it represents the key to understand the concurrent spatial notions of the 21st century. Therefore, the next chapter will deal with the method of mapping.

Fi.53 Putin, Moscow, 2014.
[434]   Castiglioni, *Divide and rule*, 2014, The European.
[435]   Dodds, *Geopolitics, A very short introcuction*. 2007, P.21,110,115.

Maps Don't Work

"It is not down in any map; true places never are."
— MOBY DICK[436]

The *renaissance of space* of the last twenty years was demonstrably important for research of cultural and social science, but also to a critical geography and cartography. Next to its revival after a national-socialist confiscation through the *spatial turn*, the notion of space is also notably influenced by a movement that will be later explained in detail as *visual turn*.

Maps were never definite representation of the real world, instead through a critical perspective they are considered as expressions of space-related imagination, for example as a result of a creative process of cartographers, politicians or journalists. The critical cartography investigates the map-making process regarding the emphasis and covering of certain aspects through the psychology of color, the arrangements and the relation of the textual and visual (Icono-texts are also discussed later.) etc.[437] Thus, cartographic and medial representations are always expressions of certain power relations, intentions and imaginations.

As the most popular cartographic application, *Google Maps* brought the service of a map to everyone. Simultaneously, curious anomalies occurred. Buildings or whole streets disappeared, mountain ranges and beaches distorted and highways were buckled. The reason of course was faulty software and thus problems of pictorial combination. Nevertheless, this phenomena is not a particular 21st century twist, instead it reveals an essential aspect of all maps. "*Maps don't work, they never have.*", as Tom McCarthy sums up.[438]

Fi.54 Quin, E., *An Historiacl Atlas*, 1830.
[436] Melville, *Moby Dick*, 1851.
[437] Haslinger et al., *Digital Atlas of Political Images of Space in East Central Europe in the 20th Century*, 2011.
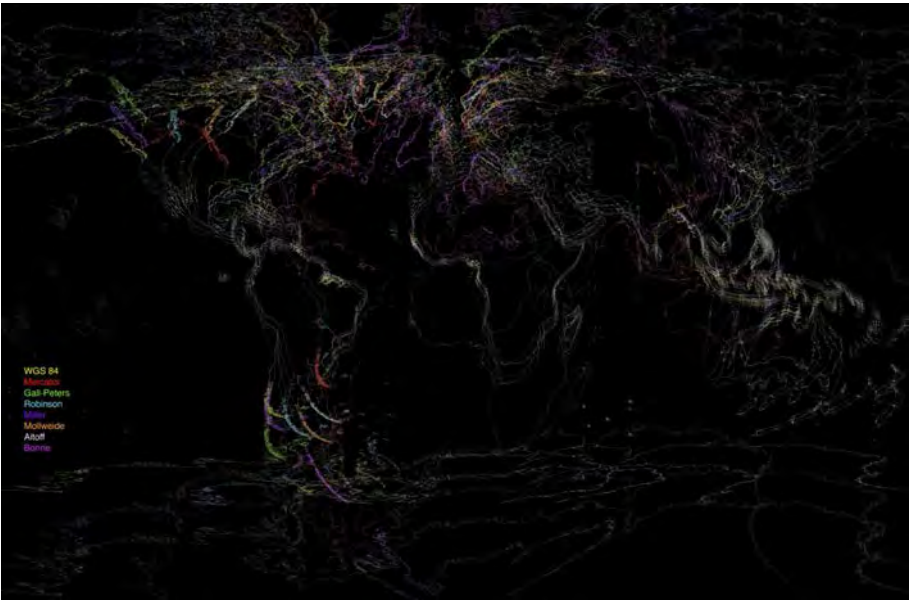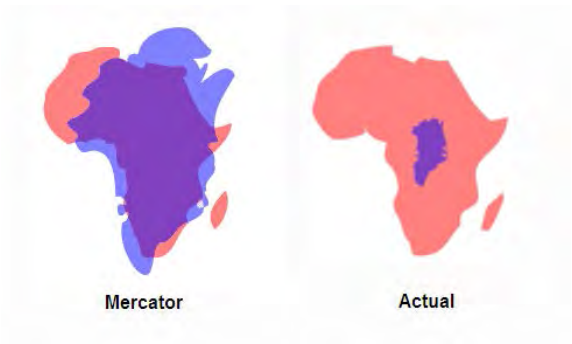[438] McCarthy, *Mapping It Out,* 2014, P.6.
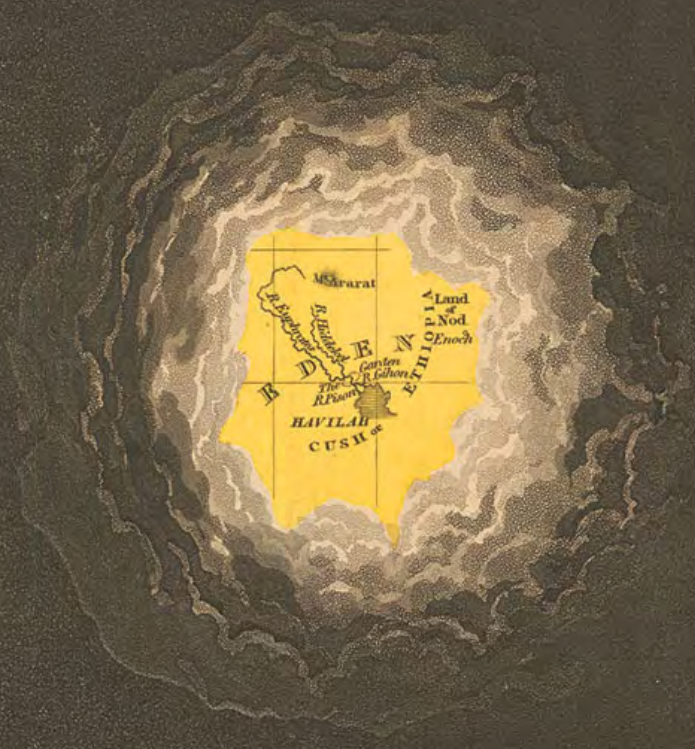
The fault is word-for-word in the nature of things. The earth is a spherical object, but, following Steers introduction of map projections of 1927, paper is flat: "*as is it impossible to make a sheet of paper rest smoothly on a sphere, so it is impossible to make a correct map on a sheet of paper.*"[439] Thus, maps are not replica, but projections or *means of representing the lines of latitude and longitude of the globe on a flat sheet of paper.*[440]

Consequently, projections are not neutral or preexisting. They are purposely constructed and therefore pervaded by ideological conventions. A cartographer has to choose between a various of modes of projections which all have certain assets and drawbacks.

The projection that was used for centuries as the standard in atlases is Mercator's projection.[441] For this projection, the equatorial areas are balanced, but the maps then bloats extraordinary as it reaches the polar regions, so that Greenland looks even bigger than Africa.[442] Since especially countries of the Western World appear bigger due to their distance from the equator, this modus is especially criticised by represeters of critical geography for its Eurocentrism.[443] This problem will be a crucial point later in the chapter.

The described discrepancy is eventually a problem of perspective which is also the everlasting challenge for drawing artists. This is why artists from Dürer, Leonardo and Boetti among others were fascinated by maps.[444] Holbein's *The Ambassadors* from 1533 shows that the problems of perspective were understood quite early. The painting shows two statesmen surrounded by cartographic equipment (globes, quadrant, …) and an occupying space between them, a *proto-Googlish blur* where the image goes all wrong.[445] From a certain perspective a visitor at London's National Gallery can transform the blurred space into a skull, albeit the two men and their instruments then become fuzzy. Thus, Holbein confronts the spectator with the meaninglessness of not only riches and status, but also of perspective itself: Eventually, both are condemned to a formlessness and disappearing, in the end to the skull or decoded death.[446]

439   Steers, *An Introduction to the Study of Map Projections*, 1927.
440   Ibid.
441   McCarthy, *Mapping It Out,* 2014, P.6.
442   Ibid.
443   Kahane, *Großes Taschenlexikon*, 2001, P.256.
444   McCarthy, *Mapping It Out,* 2014, P.6.
445   Ibid.
446   Ibid.

Mercator   Actual

WGS 84
Mercator
Gall-Peters
Robinson
Miller
Mollweide
Altoff
Bonne

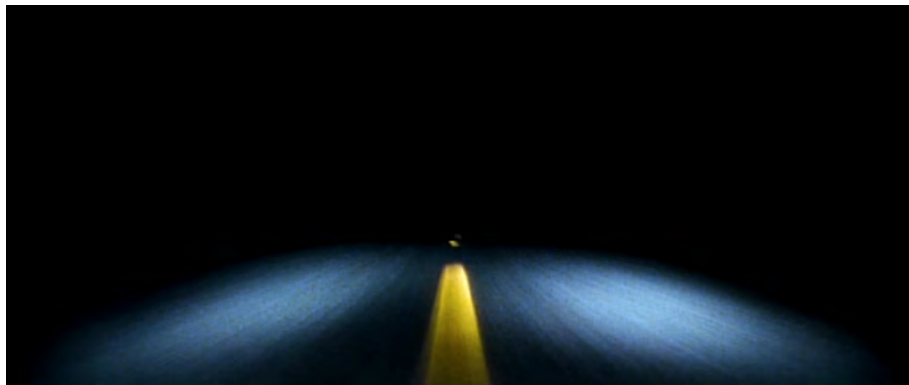Fi.55 Mercator comparison.
Fi.56 Eight world views.

Fi.57 *Google Earth* glitch, 2013.

Fi.58 Holbein the Younger, *The Ambassadors*, 1533.

Holbein's painting of *The Ambassadors* is of course a political painting. The two statesmen are forming political states and empires out of territories and oceans. Mapping always involves violence.[447] The shaping geopolitical force of maps therefore will be another essential part later in the chapter.

However, if maps are suppressors, then naturally a counter-movement develops. In the case of cartography, one speaks of more artistically oriented counter-maps. Various forms will be demonstrated as well. What all approaches criticise is the supposed truth of maps: *this* particular map is *truer* than the others. There is a certain phantasm of cartography that sees space as deep, total and *real*.[448] This is also the misconceptions the main character *Fred Madison* of David Lynch's *Lost Highway* is defeated by.

He has to go *outside* the space to perceive it totally, thus he breaks into his own house and films it. Consequently, he has to go *outside* himself, which if of course both ontologically and physically impossible and leads to main subject of the movie: psychosis.[449]

Fi.59 David Lynch, *Lost Highway*, 1997.

[447]   McCarthy, *Mapping It Out,* 2014, P.6.

[448]   Ibid.

Fi.60 David Lynch, *Lost Highway*, 1997.

[449]   McCarthy, *Mapping It Out,* 2014, P.6.

Cartopsychosis is McCarthy's diagnosis for geography but also for the human identity, thus human being.[450] In times of relativistic spaces, ever-changing perspectives of regimes and a general uncertainty, *we live in the gaps*.[450] Therefore, the only real map is the one that is handed out in Lewis Carroll's (author of *Alice's Adventures in Wonderland*) poem *The Hunting of the Snark*: (Incidentally, the Bellman's map came four decades earlier than Kasimir Malewitsch's *Black Square* .)

"*The Bellman himself they all praised to the skies –*
Such a carriage, such ease and such grace!
Such solemnity, too! One could see he was wise,
The moment one looked in his face!

He had bought a large map representing the sea,
Without the least vestige of land:
And the crew were much pleased when they found it to be
A map they could all understand.

»What's the good of Mercator's North Poles and Equators,
Tropics, Zones, and Meridian Lines?«
So the Bellman would cry: and the crew would reply
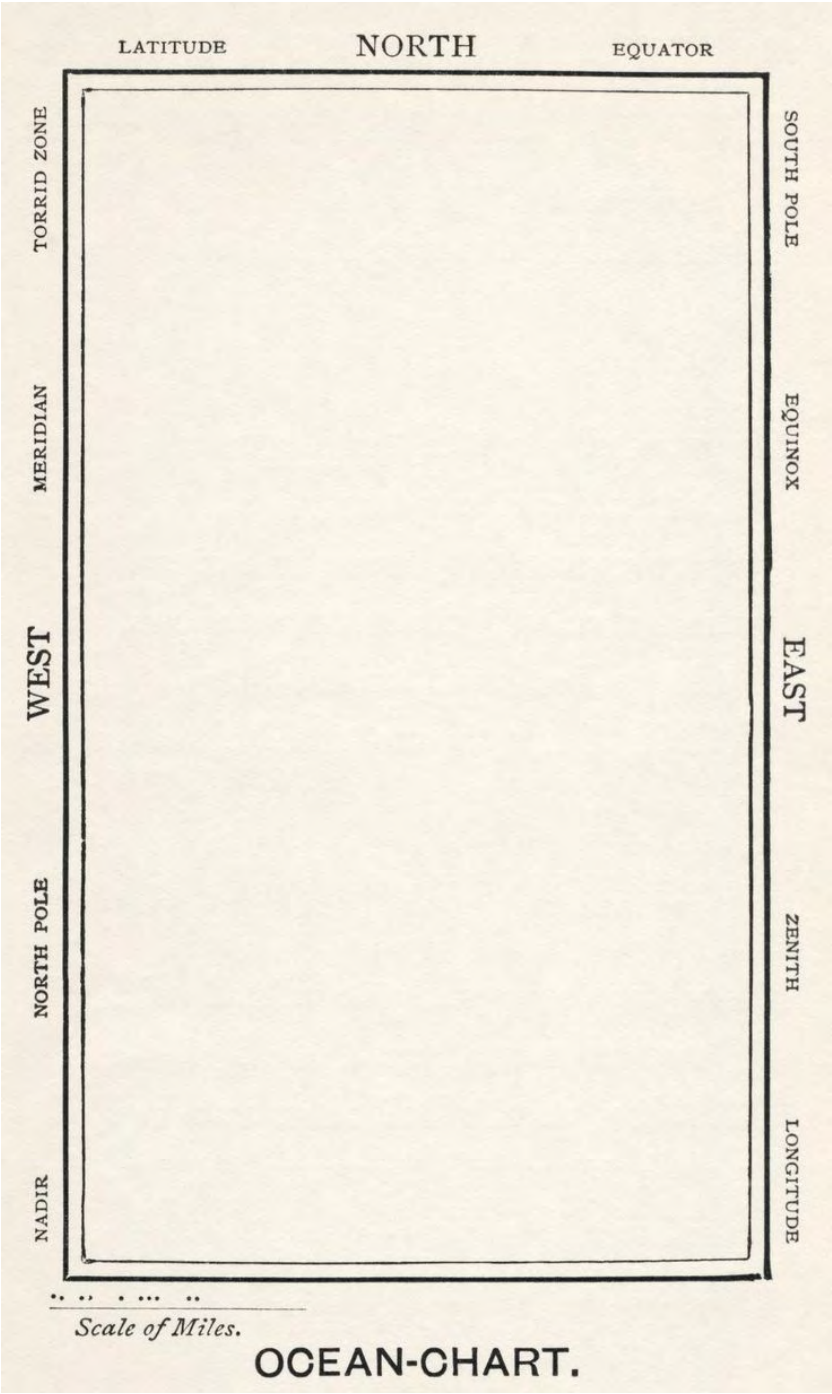*»They are merely conventional signs!«*

»Other maps are such shapes, with their islands and capes!«
But we've got our brave Captain to thank:
(So the crew would protest) »that he's bought us the best –
A perfect and absolute blank!«"
— LEWIS CAROLL[452]

Fi.61 Caroll, *Bellman's Ocean Chart*, 1876.

450 McCarthy, *Mapping It Out,* 2014, P.6.
451 Ibid.
452 Caroll, *The Hunting of the Snark*, 1876.

Critical Cartography

Eventually, the discipline of critical cartography administers to the positivism of cartographical methods and artefacts. Besides a theoretical approach based on critical social theories of Marx and Frankfurt School, this discipline leads also to new mapping practices such as counter-mapping and geospatial media.

A critical access to mapping is needed, because firstly it is often ignored in its entirety. As Jeremy Crampton states, if one opens a book about cultural, political or social geography it is likely that there is no or little discussion of mapping, cartography or GIS (geographic information systems).[453] Secondly, cartographers themselves didn't care much about geographical topics like politics, power, discourse or post-colonialism.[454] For example, there are no journals of cultural or political cartography. Altogether, contrary to a seemingly neutral and positivistic and thus less self-reflexive academic perception of cartographies, critical cartographies tries to embed concerns regarding influential and shaping political forces on mapping.

However, there have always been critical tendencies in the field of geographical thinking. Next to the almost inflationary used term of *critical* since the 1980s[455], there have been critical traditions which connected mapping and geography since many years.[456]

An additional factor is that the practice and theory of cartography was basically split over its history. The profession of drawing maps or simply *mapmaking* (term of *cartography* has its origins in early 19th century and *map* is much older)[457] led to a differentiation from an academic geography that didn't actually *do* geography, but *studied* maps.[458] Nevertheless, today with occurrences like geo-visualisations or climatology this distinction is no longer sustainable, which again shows that the understanding of the function of maps has changed over time.
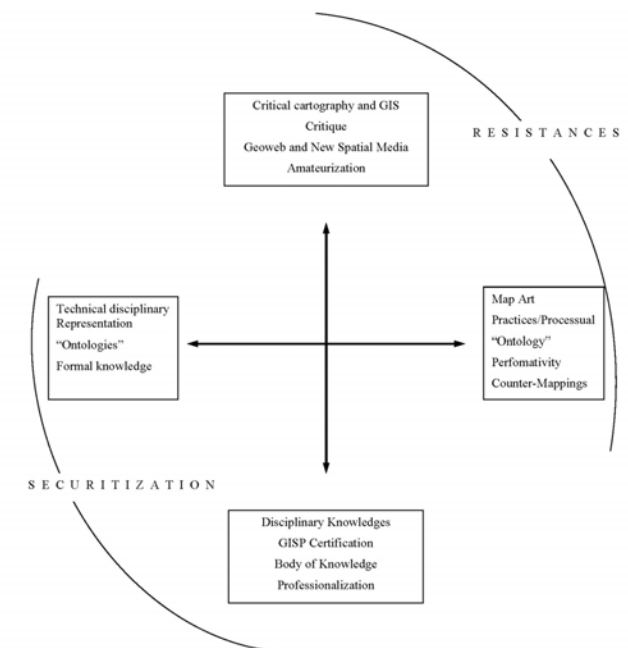
There are two big myths of cartography that induced its scientific character. Firstly, as a scientific discipline it was posed in opposition to art and secondly, its perception as something *post-political* and thus Swiss-like neutral.[459] These myths of paradigms are addressed negated by theorists of critical cartography. Eventually Wood states:

> *"Cartography is dead (thank God!)."*
> – DENIS WOOD

Of course he meant the scientific (technological) notion of academic cartography, which conflicts with actual mapping. Maps themselves are surely alive, maybe healthier than ever when looking at newer geospatial technologies and GIS.[461]

Therefore, the following diagram summarises the recent tendencies within the field of mapping:

Fi.62 Crampton, *Field of tension in mapping*.

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453   Crampton, *Mapping,* 2010, P.1.
454   Ibid.
455   Blomley, *Uncritical Critical Cartography?*, 2006.
456   Crampton, *Mapping,* 2010, P.2.
457   Krogt, *Kartografie or Cartografie?*, 2006, P.11-12.
458   Crampton, *Mapping,* 2010, P.2.

459   Crampton, *Mapping,* 2010, P.3.
460   Wood, *Cartographic Perspectives*, 2003, P.4.
461   Crampton, *Mapping,* 2010, P.3.

It illustrates mapping as a field of power/knowledge relations.[462] On the y-axis, the critical approaches, like the *one-two punch* of theoretical critique and geomedia, faces the professional and expert-related mapping. On the x-axis, the typical clash of *two cultures* of C.P. Snow with experts versus artistic interventions as processes of knowledge production appears. Altogether, it is a confrontation of tendencies of securitisation and resistances. Following Heidegger:

> *"The essence of technology is by no means anything technical."*
> — MARTIN HEIDEGGER[463]

The focus of the practical work of this thesis is in contrast to the post-political and technical dominated securitisation located to the more socio-political oriented tendency of resistances. Although maps are a neutral medium per se, they can be used for good and bad purposes. Nevertheless, a critical perception focuses on the usage of maps for capitalist expansion and exploitation, thus affairs of politics, propaganda and imperialist boundary-making.[464] Thus, mapping has politics, consequently mapping is a political act.

> *"How are people made up?"*
> — IAN HACKING[465]

Maps are knowledge producers which form certain categories that have essential consequences.[466] The process of categorisation leads to a certain action of consolidation and excluding. Next to statistics, maps are technologies that are used in a political context to detect risks and threats to a state, thus in the context of *9/11*, maps were used to inspect *at-risk* targets or to surveil *risky* populations.[467] Thus, the deterministic approach of *we* and *them* is supported or executed by maps. This overlaps with the absolute notion of geopolitical spaces, albeit mapping can also be used to produce relativistic notions, which will be the focus of the practical part of this thesis. Altogether, the relation between mapping and politics is obvious, consequently this leads to also to the relation of knowledge and power.

Mapping is on the advance. Firstly, by emphasising as *geographic visualisation* in the 1990s and secondly, through the role of map hacking and geomedia it gained in importance.[468] The use of maps and mapping tools and hence cartographers both on professional and amateurish level has never been higher.[469] Eventually, we can ask for the state of maps today or as Vasiliev questions: *what is a map?* [470]

Thus, the process of mapping is leading the concept of this thesis as well and will therefore particularly be interpreted.

Critique

This thesis follows a critical perception of cartography. Therefore, one has to understand what is the exact aim of critical thinking. As Foucault describes, critique is not about claiming mistakes, but an observation on assumptions of certain categories of knowledge:

> *"A critique does not consist in saying things aren't good the way they are. It consists in seeing on what type of assumptions, of familiar notions, of established, unexamined ways of thinking the accepted practises are based."*
> — MICHEL FOUCAULT[471]

Thus, these *unexamined ways of thinking* shape the way we understand our world. For example, books about cartography often emphasise on a map design which includes *figure-ground* separation, although such perceptions of figure-ground are proven to be different for non-Western viewers.[472] Due to this generalisation of cultural differences, a critical approach rather tries to show origins and alternatives to such categories than completely deny them.

462 Crampton, *Mapping,* 2010, P.4.
463 Heidegger, *The Question Concerning Technology*, 1977, P.4.
464 Crampton, *Mapping,* 2010, P.3.
465 Hacking, *Historical Ontology,* 2002.
466 Crampton, *Mapping,* 2010, P.9.
467 Isikoff, *The FBI Says,* 2003.

468 Wood, *Cartographic Perspectives*, 2003, P.4.
469 Crampton, *Mapping,* 2010, P.4.
470 Vasiliev, *What is a Map?,* 1990.
471 Foucault, *So Is It Important to Think?,* 2000, P.456.
472 Chua et al., *Proceedings of the National Academy of Sciences,* 2005.

Fi.63 Gilbert, *All is Vanity*, 1892.

This perspective was particularly developed by Immanuel Kant in his *Critique of Pure Reason* from 1781. Kant's notion of critique is an examination which involves *laying out and describing precisely the claims being made, and then evaluating such claims in terms of their original meanings.*[473] Consequently, questions of power emerged, for example *what is an authority?* and *who shall have authority?*[474] Thus, a critical perception is a highly political one, which enables to overcome unreflected presumptions and leads to different accesses. As Crampton summarises: "*well, we seem to be doing it this way, but do we have to? Isn't there an alternative?*"[475] or eventually Foucault:

> "*I will say that critique is the movement by which the subject gives itself the right to question truth concerning its power effects and to question power about its discourses of truth. Critique will be the art of voluntary inservitude, or reflective indocility. The essential function of critique would be that of desubjectification in the game of what could call, in a word, the politics of truth.*"
> — MICHEL FOUCAULT[476]

Altogether, critique is not something that rejects certain notions, instead it is a political practice of questioning and resisting prescribed facts in order to clear for other ways of thinking in the tradition of Frankfurt School.[477] In the context of cartography, a critical questioning of maps should spatially and temporally locate knowledge and examine relations to power with the aim of the fundamental challenge of thinking patterns.[478]

Eventually, knowledge is always socially constructed and later divided into truth and false by certain instances. Such instances determine rules, which can be related to geographic centres or to specific points in time. Critique can uncover these rules and the times and spaces in which they occur.[479] In this way, critical cartography becomes a powerful tool to challenge existing power structures and therefore a fitting approach to map political spaces in the sense of this thesis.

[473]   Christensen, *Geography as Human Science*, 1982, P.39.
[474]   Crampton, *Mapping,* 2010, P.15.
[475]   Ibid.
[476]   Foucault, *The Politics of Truth,* 1997, P.32.
[477]   Crampton, *Mapping,* 2010, P.15.
[478]   Glasze, *Kritische Kartographie,* 2009, P.187.
[479]   Crampton, *Mapping,* 2010, P.15.

To summarise, the basic principles of critique according to
Crampton are:

> *"1. examination of (often unexamined) grounds*
> *of decision-making knowledges*
> *2. localisation of knowledge in specific historical periods*
> *and geographic spaces*
> *3. uncovering of the relation between knowledge and power"*
> — JEREMY CRAMPTON[480]

> *"Critical theory is a large and fractured discursive space, by no*
> *means confined to the Frankfurt School and its legatees, but it*
> *is held in a state of common tension by the interrogation of its*
> *own normativity."*
> — DEREK GREGORY[481]

Basics

In the context of critical cartography, Blomley identified three
general characteristics:

> *"1. It is oppositional: it targets dominant forms of oppression*
> *or inequalities*
> *2. It is activist and practical: it wishes to change the world*
> *3. It is theoretic: it rejects positivist explanations and*
> *embraces critical social theory"*
> — NICHOLAS BLOMLEY[483]

Then, Crampton combined his taxonomy with the basic
principles of critique into four principles of critical cartography:

> *"1. maps are useful ways of organising and producing*
> *knowledge, but these orders of knowledge incorporate*
> *unexamined assumptions*
> *2. historicisation/spatialisation of knowledge to challenge*
> *old orders of knowledge*
> *3. maps as politics are the relation between power*
> *and knowledge*
> *4. activistic and emancipatory approach of mapping"*
> — JEREMY CRAMPTON[484]

Although, practical and theoretical approaches especially in the field
of critical mapping are compulsorily intertwined, the following
section will pragmatically split critical cartographic theories and the
practice of counter-mappings. The theoretic paradigms of critical
cartography can basically be differentiated into maps as expressions
or producers of social power relations. For example, John Pickles
represents a notion that belongs to the latter idea:

> *"Instead of focusing on how we can map the subject …*
> *[we could] focus on the ways in which mapping and*
> *the cartographic gaze have coded subjects and produced*
> *identities."*
> — JOHN PICKLES[485]

He thinks maps as active actors of production of space and thus
are as executioner of power and of powerful means regarding
promoting social change.[486]

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[480]   Crampton, *Mapping,* 2010, P.16.
[481]   Gregory, *Geographical Imaginations,* 1994, P.10.

[483]   Blomley, *Uncritical Critical Cartography?*, 2006, P.91-92.
[484]   Crampton, *Mapping,* 2010, P.17.
[485]   Pickles, *A History of Spaces,* 2004, P.12.
[486]   Pickles, *Ground Truth,* 1995.

Denis Wood

In contrast, Denis Wood's *Power of Maps* from 1992 understands maps as indicator of power and thus as supporter of dominant political structures.[487] He showed that maps represent interests of certain groups without being definitely. However, instead of creating conspiracy theories, he had an actively liberating idea of maps beyond governmental interests, which made his work something like the manifesto for counter-mapping.[488] Wood's argumentation was clearly inspired by Roland Barthes' notion of myths (*Mythologies* from 1972), which took everyday objects to reveal their hidden meanings.[489]

He showed that maps don't compulsorily have to serve a certain nation state, although they apparently did so in the past and certainly will endure in this function.[490] Consequently, mapping is a factual way for *the people* to conquer notion of nation states. In the end, this understanding of mapping is also an understanding of political power.[491]
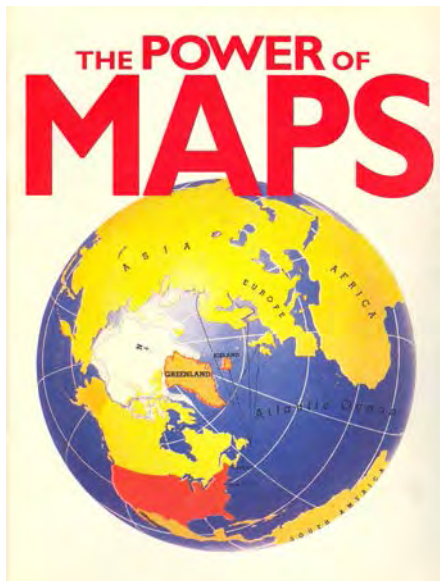
Fi.64 Wood, *Power of Maps,* 1992.

[487]   Crampton, *Mapping,* 2010, P.18.
[488]   Ibid.
[489]   Ibid..
[490]   Buisseret, *Monarchs, Ministers and Maps,* 1992.
[491]   Crampton, *Mapping,* 2010, P.19.

Brian Harley

Another important theorist regarding this post-structuralist and constructivist approach of critical cartography is Brian Harley. He states that no understanding of power, ideology and surveillance is complete without regarding the discipline of mapping.[492] Again influenced by the French theorists Barthes and Foucault, he developed his notion of *external power* in the 1980s, especially in his essay *Deconstructing the Map*.[493]

He proclaims an *external power* of maps, which means that an external institution, like nation states or the church, significantly influences the artefact of the map.[494] Eventually, all maps express the social structures of the places and times of their creation. Furthermore, Harley describes the *internal power* of maps which describes that maps display obviously not reality, but they constitute a specific reality instead.[495] Thus, every map produces and sustains notions of power by its method of generalisation or, in sense of Barthes, naturalisation.

Harley states that the cartographical practice standardises the perception of political structures and in the end our world, which can be examined by the application of a discourse analysis.[496] He suggests a reading of maps as texts to explore their visual hierarchies.[497] The study of their visual appearance, in detail the geometries (projection or centring) and the impact of the imageries, should reveal what maps hide.[497]

[492]   Crampton, *Mapping,* 2010, P.20.
[493]   Glasze, *Kritische Kartographie,* 2009, P.187.
[494]   Harley, *The New Nature of Maps*, 2001, P.165.
[495]   Kitchin et al., *Rethinking Maps,* 2009.
[496]   Harley, *The New Nature of Maps*, 2001, P.166.
[497]   Ibid., P.33.
[498]   Ibid., P.83.

Eventually, maps are more than just symbolism, thus the practical element of maps should be the focus of a critical cartography.[499] In addition, Harley rejects the classical oppositions of cartography, like art/science, objective/subjective and scientific/ideological, which will be later revived as grounding element for practical executions of critical cartography. He sums it up in his *discourse of opposites*, which serves as basic concept regarding the conceptional elaboration of the practical work in terms of visualise these opposites:

Artistic Maps	**Scientific Maps**
Aesthetic	Non-aesthetic
Autographic	Anonymous
Imaginative	Factual
Subjective	Objective
Inaccurate	Accurate
Manual	Machine
Old	Modern
Place	Location

Altogether, he states that mapmakers themselves are ethically responsible for the effects of their maps, which lead him derive the seemingly neutral and scientific mapping process as in fact influenced by political interests of nation states.[500] This highly relates to the described notion of Bruno Latour regarding the actor-network theory which negates the neutrality of researchers because of several (also political) influences that cannot be ignored.

Bruno Latour

The same notion of actor-network theory is applied to cartographical artefacts by Latour. For him cartography is yet another example how Western scientific knowledge became hegemonic and thus claimed truth about universal knowledge.[501] In detail, maps as scientific artefacts produced by various practices let them become actors within scientific relations.[502] This concept of scientific artefacts Latour calls *immutable mobiles* and will appear again later in this chapter.

Consequently, cartography is understood as practice. Due to its framing in the actor-network theory, maps are actors of complex relations with other actors, which in the end constitute and change reality. In Latour's non-representational notion, maps per se have no meaning, but are part of an arrangement of material and social relations.[503] Thus again, whether the method of cartography nor its product, the map, are the subject, instead rather cartography as human practice as a tool for orienting oneself in the geographical reality is crucial.[504]

Fi.65 Harley, *Discourse of Opposites,* 1989.

[499] Michel, *Für eine poststrukturalistische Perspektive auf das Machen und die Macht der Karten*, 2010.

[500] Harley, *Cartography, Ethics and Social Theory*, 1990.

[501] Michel, *Für eine poststrukturalistische Perspektive auf das Machen und die Macht der Karten*, 2010.

[502] Ibid.

[503] Glasze, *Kritische Kartographie*, 2009, P.186.

[504] Crampton, *Mapping*, 2010, P.12.

Political Cartography

"Cartography is not what cartographers tell us it is."
— BRIAN HARLEY

Harley's quote sums up the previous introduction to critical cartography. Next to a technological and scientific paradigm, there have always been contrary reactions, which *questioned maps, questioned cartography, questioned cartographers*.[505] Thus, as examined the idea of critical cartography is related to the relation of knowledge and power. Rationalities (natural assumptions) shape and form the subjects of maps, which is how they help to *oppress, subjugate or subjectify individuals and populations*.[506]

Eventually, the relation of power and knowledge demonstrates that *truth* or preferred ways of thinking are dependent from the specific time periods, today the scientific mode is predominant.[507] Especially, Shannon's cybernetic approach to communication forms the basis for this mode of cartography:
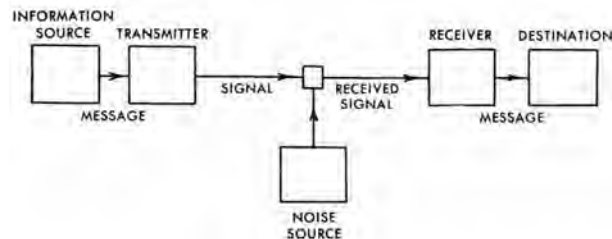
Although it's an everlasting discussion, a critical approach does not deny scientific knowledge modes, but tries to ask for roots and implications of these. However, knowledge is never unpoliticised.[508]

Fi.66 Shannon's 1948 schematic of general communication.
[505]   Edney et al., *Questioning Maps, Questioning Cartography, Questioning Cartographers*, 1992.
[506]   Wood et al., *Critical Cartography*, 2009.
[507]   Crampton, *Mapping,* 2010, P.39.
[508]   Ibid.

As mentioned in the beginning of this chapter, mapping tools like *Google Maps* are ubiquitous and thus almost everyone with computer and internet access is able to produce maps. Contrary to an elitist group of map experts, the great map houses of the West and national/local governments, the people themselves are undermining their dominance.[509] This occurrence combined with the social theoretical critique led to a new understanding of mapping (mapping is involved in what we choose to present, how we choose to present and what decisions are made): mapping is in and of itself a political process. [510]

The official definition of maps as *graphic representations of space* [511] fails quite short. It is not so much about the question of what the map actually is, but how it is understood and used. Through is researches Roger Downs proved that the concept is variant across cultures, age and sex.[512] One can speak of a cultural dependent literacy of maps, which the Iranian poet fittingly summarises as: "*Speak a new language, so that world will be a new world.*" [513] For example describes the maps of the *Nuttall Screenfold* in this sense:

"*... does not look like a map to 20th century eyes. Yet as a picture history telling the story of an early conqueror of Southern Mexico it is fixed in space as much as time. When we crack the code it reveals that are map-like in purpose and content.*"
— BRIAN HARLEY[514]

Fi.67 Nuttall Screenfold Pre-Conquest Mixtec map.
[509]   Crampton, *Mapping,* 2010, P.39.
[510]   Ibid.
[511]   International Cartographic Association Mapping.
[512]   Downs, *Being and Becoming a Geographer*, 1944.
[513]   Rumi.
[514]   Harley, *Maps and the Columbian Encounter*, 1990, P.29.

Maps are part of cultural knowledge, thus their appearance (how they look - wood, sand, rock, paper, computer screens and work - interactions) and production of knowledge are deeply related to shape of that culture and its perception of power.[515]

Furthermore, the original definition of maps includes the idea of *(graphical) representations*.[516] The question of representation is already well discussed in philosphy, culture studies, and geography.[517] The process of *representation* implies always ignorance on a certain degree. In the case of maps, of course they don't equal the real territory, but *represent* specific essential elements. Consequently, Monmonier states: "*not only is it easy to lie with maps, it's essential.*"[518]

The argumentation of critical cartography is that this creation of a specific spatial knowledge is done by identifying, naming, categorising, excluding and ordering.[519] This suggests that maps don't create real physical space, but new perceptions and ideas about space. Thus, mapping is not just a reflection of reality, but also the production of a certain truth.[520]

Knowledge

Space   **Power**
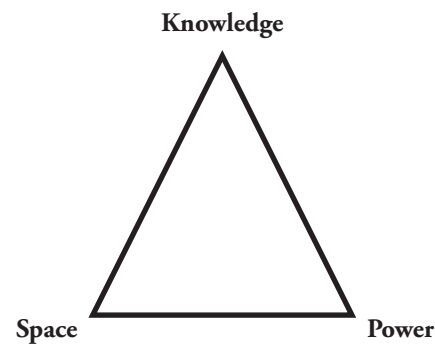
A prominent example therefore is Christopher Columbus, known for his landfall in 1492. In detail, Harley examined that Columbus renamed places with Christianised terms that were already named by the indigenous Sarawak Indians.[521] So the place of arrival became *San Salvador* (the savor) or the islands became *Santa Maria de La Concepíon* (Holy Conception), *Trinidad* (holy trinity) and even his ship was called *Santa Maria* (Virgin Mary).[522] His cartographer Juan de la Cosa, made a map of Columbus' renaming:

Fi.68 Discursive Triangle Critical Geography.

515   Crampton, *Mapping,* 2010, P.44.
516   International Cartographic Association Mapping.
517   Thrift, *Non-Representational Theories,* 2006.
518   Monmonier, *How To Lie With Maps,* 1991, P.1.
519   Crampton, *Mapping,* 2010, P.45.
520   Ibid.
521   Harley, *Rereading the Maps of the Columbian Encounter*, 1992.
522   Crampton, *Mapping,* 2010, P.45.

Fi.69 Cosa, Map of the world, c.1500.

Thus, Columbus created a new fictive space which was adjusted to Western convictions and in the end enabled to be conquered and ruled, as Harley explains:

> "*The purpose of* [the Juan de la Cosa] *map is clearly sign-posted as an instrument of European empire. National flags – both Spanish and English – are planted to claim ownership of the new territories. The map also proclaims a crusade. A compass rose astride the equator portrays the Holy Family. The figure of St. Christopher is said to be an allusion to Columbus carrying the Christ child on his shoulders. As »Christoferens,« he is the bearer of Christianity across the ocean to the pagan shores of the New World.*
>
> *Placenames commemorate the famous shrines of the Virgin in Castile, Catalonia, and Italy. Placed thus on the new land they become emblems of possession. Columbus tells us in his Journal for Friday, 16th November 1492: »in every place I have entered, islands and lands, I have always planted a cross.« The names on the map are the written record of these innumerable acts of territorial consecration, some of them witnessed by Juan de la Cosa.*"
> — BRIAN HARLEY [523]

Altogether, this shows a period of cartography and colonialism in which maps fulfil the task of land seizure: *map or be mapped.* [524] In summary, Bernard Nietschmann states that *more indigenous territory has been claimed by maps than by guns.* [525]

In 1507, the German cartographer Martin Waldseemüller published a book called *Introduction to Cosmography*, which firstly showed the continent America separated from Asia. In this map Waldseemüller decided to name the new continent after the discoverer Amerigo Vespucci. Although, he later regretted this decision due to missing regard to Columbus and wanted to name the continent *Prisilia* or *terra papagalli*, the term of *America* obviously stated a political determination. [526]

[523]   Harley, *Rereading the Maps of the Columbian Encounter*, 1992.
[524]   Bryan et al., *Where Would We Be Without Them?*, 2009.
[525]   Nietschmann, *Defending the Miskito Reefs with Maps and GPS*, 1995, P.37.
[526]   Walsh, *Map Quest*, Else/Where, 2005, P.212.

Fi.70 Waldseemüller, *Cosmographiae Introductio*, 1507.

"Maps are implicated in the exercise of power as political geographers are well aware." – PETER TAYLOR [527]

This thesis follows the assumption that all maps are political, explicitly stated in Denis Wood's already mentioned work *The Power of Maps*. A seeming neutrality is negated by the various introduced theories, among others Latour's notion of maps as part of the actor-network theory exclude a political disinterest. However, there a cartographers who don't agree that mapping is or shouldn't be political by putting politics and ideology on one level.[528] At any rate, maps are an essential part of political acting which will be examined a bit further in this section.

In the history of cartography maps have always been related to processes of preservation of power. Between the early period and Modernity maps have been exclusively in the possession of certain elitist groups. Harvey therefore exemplary mentions the religious elites of the ancient Egypt and medieval Europe, the intellectual elites of ancient Greece and Rome, sultans of the Ottoman Empire and ancient China, or the absolute monarchs of the early Modern Europe.[529] For them mapping was an intellectual weapon for preservation and expanding their claims to power.[530]

As a example of the latter, King Louis XIV of France, the *Sun King*, as a great supporter of arts and sciences used mapping amongst others to glorify his sovereignty or image, *l'état, c'est moi*:

> *"Whether in painting, sculpture, inscription or tapestry, the presentation of the king followed a »rhetoric of the image« developed in the Renaissance. The body position, the regalia, the mythical portrayal, and the total subject matter were all part of this rhetoric and helped form a "cult of image", in this case the image of Louis XIV and the cult of the Sun King."*
> – CHRISTINE PETTO [531]

Thus, maps as visual representations played a central role in supporting the king's sovereignty, as Petto states again:

> *"The alignment of power and mapping not only involved the use of these motifs in the design elements of the map but also reflected the overwhelming power of Louis' personal state."*
> – CHRISTINE PETTO [532]

[527]   Taylor, *Politics in Maps, Maps in Politics*, 1992, P.62.
[528]   Crampton, *Mapping*, 2010, P.63.
[529-530] Harley, *The New Nature of Maps*, 2001, P.56.
[529-532] Petto, *From l'état, c'est moi to l'état, c'est l'état*, 2005, P.55.

With the occurrence of the nation state with Modernity, maps were used in its assessment of populations and their distribution across the physical space.[533] The absolute notion of space allowed to think within explicit political borders and about the population inside them. In particular, how the population made places. This led to the category of thematic maps, which was arising from the late 18th century onwards.[534]

The choropleth map, for instance, was firstly applied in 1826 by mathematician and economist (not cartographer) Baron Charles Dupin.[535] This first map visualised the ratio of children in school to the population of each French department in order to emphasise unenlightened regions, what he called *la France obscure* and *la France éclairée*.[536] What is notable in terms of political ambitions is that Dupin directly linked between the health of the nation and education.[537] If the people are well, the state is. Eventually, Dupin perceives people as resource of the state, which again is a political remark for an absolute nation of spaces.
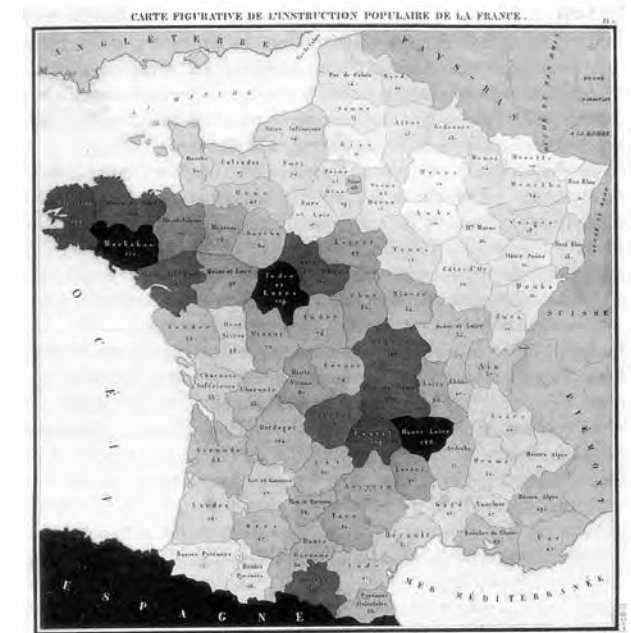
Fi.71 Dupin, Choropleth Map, 1826.
[533]   Crampton, *Mapping*, 2010, P.68.
[534]   Ibid., P.69.
[535]   Delamarre, *Pierre-Charles-Frannçois Dupin*, 1909.
[536]   Dupin, *Forces productives et commerciales de la France*, 1827.
[537]   Crampton, *Mapping*, 2010, P.70.

Another example is the Walker's *Atlas* as the first statistical atlas of the census in America from 1874, which combines three essential elements of a flourishing cartography:

> *"1. the desire of the modern state to know more about itself*
> *2. the invention of statistics.*
> *3. population distributed over territory as measurement"*
> – JEREMY CRAMPTON [538]

The generalising approach of Dupin's is continued and thus also the maps represents an absolute notion of space and territorial framed nations.

Fi.72 Walker, *Atlas*, 1874.

The third example states Halford Mackinder's attempt of documenting the transition from sea- to land-based power in his *pivot map* from 1904.[539] "*Perhaps the most famous map in the geopolitical traditions*", as O'Tuathail proclaims.[540]

Mackinder's visualised worldview shows a new world order regarding a mostly Russian heartland as the claimed centre of power. In combination with the *Inquiry* document, in which the Americans *thought out space* 14 years later[541], Mackinder's worldview informed the Cold War and a century of geopolitics.[542]

Consequently, the emergent territorial and spatial knowledge led to neoliberal calculating surveillant states with population-based mapping as their instrument, in order to get the information about the populations the nation states had to apply a variety of surveillance methods, whereby the census is only the most obvious.[543]

Altogether, the *Inquiry* had an idea of identity that *natural barriers in Europe can be discerned and thus lead to zones of civilisation*.[544] Although, there were opposing voices like Marks: "*we don't know how many there are, where to draw the boundaries between them, or what those boundaries and the people or places they enclose would represent.*"[544] Eventually, the tool of mapping helped governments to stabilise their idea of absolute nation states.
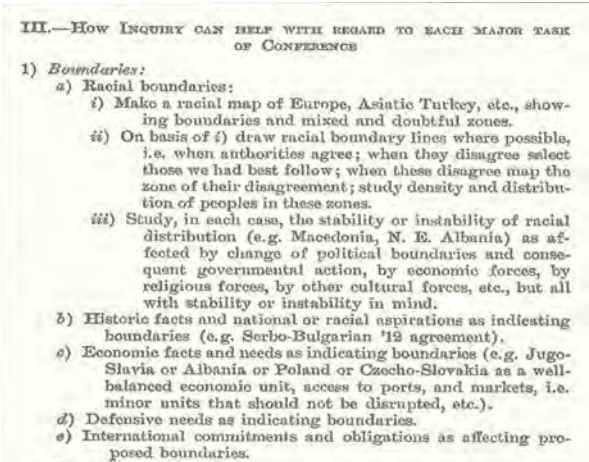
Fi.73 Inquiry Document 893, 1918.

[539] Crampton, *Mapping,* 2010, P.73.
[540] O'Tuathail, *Critical Geopolitics,* 1996, P.31.
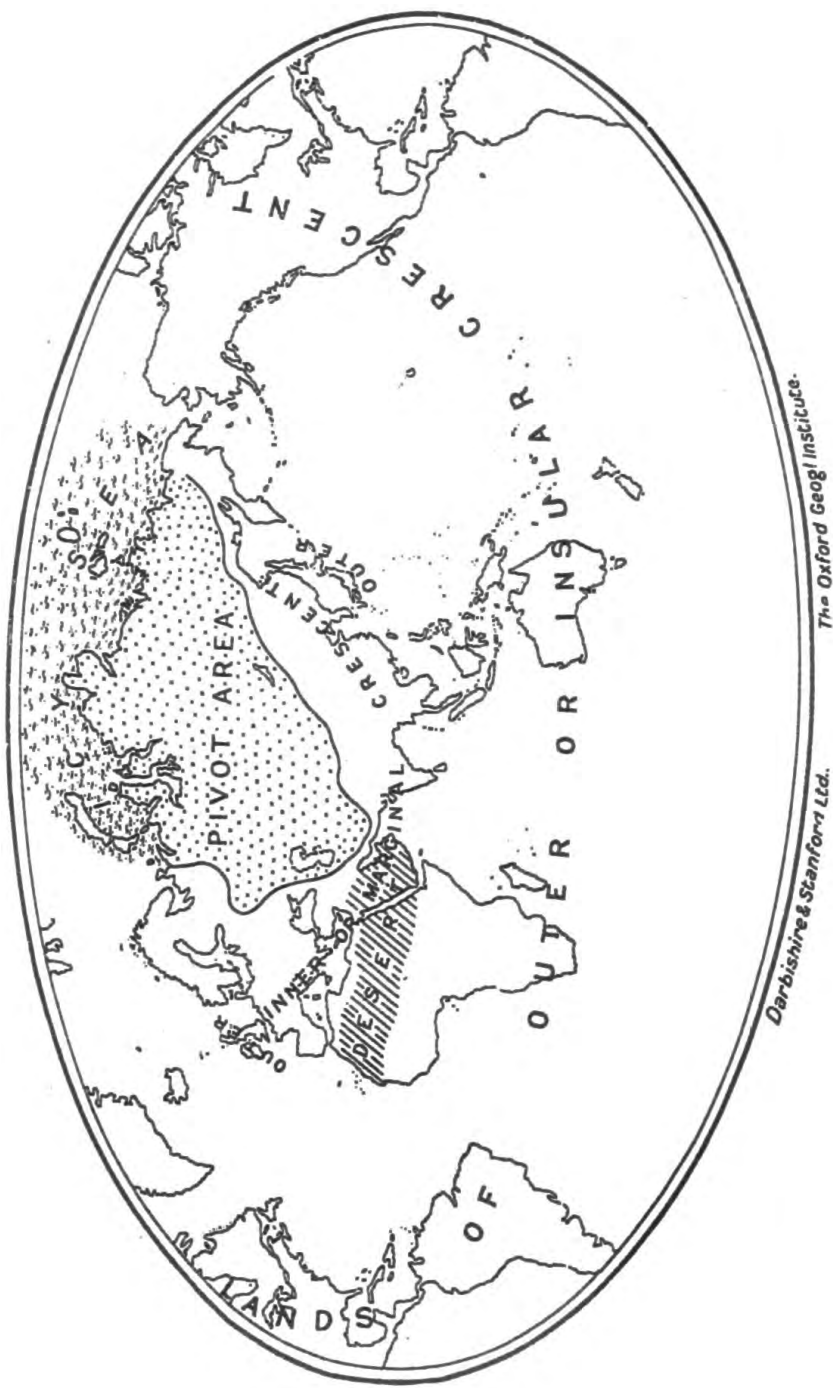[541] Foucault, *Space, Knowledge and Power,* 1984, P.244.
[542] Dodds et al., *Halford Mackinder and the Geographical Pivot of History,* 2004.
[543] Crampton, *Mapping,* 2010, P.73.
[544] Cvijic, *The Zones of Civilisation of the Balkan Peninsula,* 1918, P.470.
[544] Marks, *Human Biodiversity,* 1995, P.275.

Fi.74 Mackinder, Pivot Map, 1904.

In times of Modernity the nation state had no longer a sole sovereignty, which Foucault calls *political anatomy*, on its populations, instead power was rather focussed on controlling and optimising civil activities.[545] This principle of *biopolitics* as combination of government, statistics and population perceives, similar to Dupin, the human population as resource:

> "*What does doing without a theory of the state mean? If you say that in my analyses I cancel the presence and the effect of state mechanisms, then I would reply: Wrong, you are mistaken or want to deceive yourself, for to tell the truth I do exactly the opposite of this. Whether in the case of madness, of the constitution of that category, that quasi-natural object, mental illness, or of the organisation of a clinical medicine, or of the integration of disciplinary mechanisms and technologies within the penal system, what was involved in each case was always the identification of the gradual, piecemeal, but continuous takeover by the state of a number of practices, ways of doing things, and, if you like, governmentalities. The problem of bringing under state control, of »statification'«(étatisation) is at the heart of the questions I have tried to address.*"
> — MICHEL FOUCAULT [546]

Consequently, the modern state used maps as administration tool to visualise the gathered informations. Cartography became more and more institutionalised during the 19th century, then as essential element of *governmentalitiy* included in a *political economy*.[547]

> "*It seems that, while Marx seeks to explain the why of capital accumulation and state power, Foucault's analyses of disciplinarily and governmentality try to explain the how of economic exploitation and political domination […] this re-reading shows that there is more scope than many believe for dialogue between critical Marxist and Foucauldian analyses.*"
> — BOP JESSOP [548]

Eventually, both governmentalitiy and Marxist state theory lead to a concept of calculable territory coined by Hannah. His notion of calculable territory includes two key components: legibility and the ways that knowledge of territories is mobilised. (GIS, GPS, thematic maps, …)[549]

[545]   Foucault, *The Birth of Biopolitics,* 2008, P.41-67.
[546]   Ibid., P.77.
[547]   Crampton, *Mapping,* 2010, P.73.
[548]   Jessop, *From Micro-Power to Governmentality,* 2007, P.40.

Finally, Peters developed in his book *The New Cartography* some crucial perspectives of modern mapping. Although he is known for his alternative model to the Mercator projection, he developed some crucial touching points for the discipline of critical cartography.

> "*I want a map where the sizes are exactly the same as in reality … And so we don't need a new map; we need a new view of the world … I* [found] *out that the world-view is what I'm looking for, not the map. The map is only the possibility to give a worldview.*" – ARNO PETER [550]

As a historian Peters proclaims that a European-centred world view is nothing accidental, but rather a the product of a conscious geo-political policy.[551]

> "*The geographical view of the world is designed to eternalise the personal overestimation of the white man and in particular the European while keeping the coloured peoples conscious of their importance …* [The Mercator] *map is an expression of the epoch of the Europeanisation of the world, the age in which the white man ruled the world, the epoch of the colonial exploitation of the world by a minority of well-armed, technically superior, ruthless white master races …*"
> — ARNO PETER [552]

Thus, Peters argues that the Mercator projection is a product of its time and that they were complicit in reproducing geopolitical exploitation.[553] Outstanding is that he already started to think in this notion in the 1950s and 1960s, when there was almost no connection of geographical knowledge (like maps) and power structures.[554] Although the Marxist tradition already documented these political conditions, political geography was still dominated by determinism and Haushofer's gepolitics (explained in the chapter *End of Geopolitics*).[555] Firstly, the already mentioned Brian Harley readopted his thoughts almost 20 years later.

[549]   Hannah, *Calulable Territory,* 2009.
[550]   Peters, *The Europe-Centered Character of Our Geographic View of the World and Its Correction,* 1974.
[551]   Crampton, *Mapping,* 2010, P.94.
[552]   Peters, *The Europe-Centered Character of Our Geographic View of the World and Its Correction,* 1974.
[553]   Crampton, *Mapping,* 2010, P.94.
[554]   Ibid.
[555]   Agnew, *Making Political Geography,* 2002.

Altogether, the chapter has shown that the history of cartography during the 20th century was shaped by increasing scientific ambitions, albeit parallel tendencies of non-disciplinary mapping always existed.[556] Thus, within the last years non- or post-representational approaches arose based on theories of Latour or Barthes as critical cartography. This approaches are perceived as attempts to get beyond the graphical surface and to apply poststructuralist theories of eventfulness, actor-networks and diverse practices.[557]

Therefore, "*maps are graphic representations that facilitate a spatial understanding of things, concepts, conditions, processes or even events in the human world*"[558] The focus is on the role of maps in human experience, rather than the visual appearance of them as it has previously been typical.[559] This perception of critical theory was very influential for an application in diverse mapping practices, which will be a great influence for also the practical work of this thesis and thus will be examined further in the following section.

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[556]   Crampton, *Mapping,* 2010, P.21.
[557]   Michel, *Für eine poststrukturalistische Perspektive auf das Machen und die Macht der Karten,* 2010.
[558]   Harley et al., *The Map as Biography,* 1987, P.16.
[559]   Robinson, *The Look of Maps,* 1952.

Artistic Practices

The previous chapter opened the conceptual frame for alternative ways of mapping. However, most of them are not related to an academic and can be differentiated in artistic approaches and the development of geospatial web (or map hackings). Especially, the first ones will be centre for this section. In contrast, a pure historical observation of cartography is also interesting regarding political formations, especially in times when science and art were not perceived as separated. Nevertheless, this has already nicely been done by Benson's *Cosmigraphics* and would rather distract from a critical approach. Thus, the focus of this thesis related to practical forms of mapping will concern alternative ways of counter-mapping.

The artistic engagement with maps has a long tradition, as ways of finding meaning in visual representations and finding place in the world.[560] Consequently, the Edward Casey emphasises on the relation of map and art in the last 50 years. Wood even talks about nearly a hundred years of map art.[561]

These artists are concerned with a geographical re-mapping and follow the assumption that maps are always political.[562] Furthermore, this developed approach of a politics of representation has its roots in the avant-garde artistic movements at the turn of the century (e.g. Paul Cézanne) and the Situationists and *psychogeographers* of the 1950s and 1960s.[563] Especially, the last ones created *subversive cartographies* as a form of political resistance by rearranging seemingly determined structures of space.[564] The book *The Society of the Spectacle* of Guy Debord therefore serves as something as a guide by emphasising that everything has become visualised and therefore devalued (in short: everything is a media spectacle)[565] which leads to the occurrence of practices like *locative art* and *psychogeographical mapping*.[566] Debord himself produced such a psychogeographical map of Paris:

[560]   Casey, *Representing Place,* 2002.
[561]   Wood, *The History of Map Art*, 2008.
[562]   Crampton, *Mapping,* 2010, P.22.
[563]   Pierce, *Narrative Structures for Cartographic Design,* 2006.
[564]   Pinder, *Subverting Cartography,* 1996.
[565]   Harmon, *You Are Here,* 2004.
[566]   Debord, *Society of the Spectacle,* 1967.

THE NAKED CITY
ILLUSTRATION DE L'HYPOTHÉSE DES PLAQUES
TOURNANTES EN PSYCHOGEOGRAPHIQUE

G.-E. DEBORD

Fi.75 Debord, *The Naked City*, 1957.
[567]   Casey, *Earth-Mapping,* 2005, P.22.

A famous example of the early stage of this notion is the surrealist world map from Paul Eluard as an early counter-mapping from 1929.

An over-sized Alaska opposites Russia, whereby the USA are completely left out or replaced by the Labrador Peninsula. Other continents are extremely shrunken and even left out like United Kingdom. The origin state of the map, France, is overlaid by Germany except for the centre of the Surrealist centre Paris. Altogether, a complete counter-presentation to a European and French world view, which breaks again with the assumption of a definite truth regarding maps. Following the Frankfurt School, the critique of the Situationists was that the modern humanities' basis in consumer capitalism caused deep alienation, which led to this solution of an impossible or paradoxical map.[568]

To summarise, mapping could grow beyond the determinations of the old discipline by applying theories of critical theory and develop new methods of mapping. Although the discipline of cartography undergoes this conflict, mapping has never been healthier.[569] Therefore, the chapter will particularly deal with recent forms of alternative cartography.

Fi.76 Eluard, Surrealist Map, 1929.
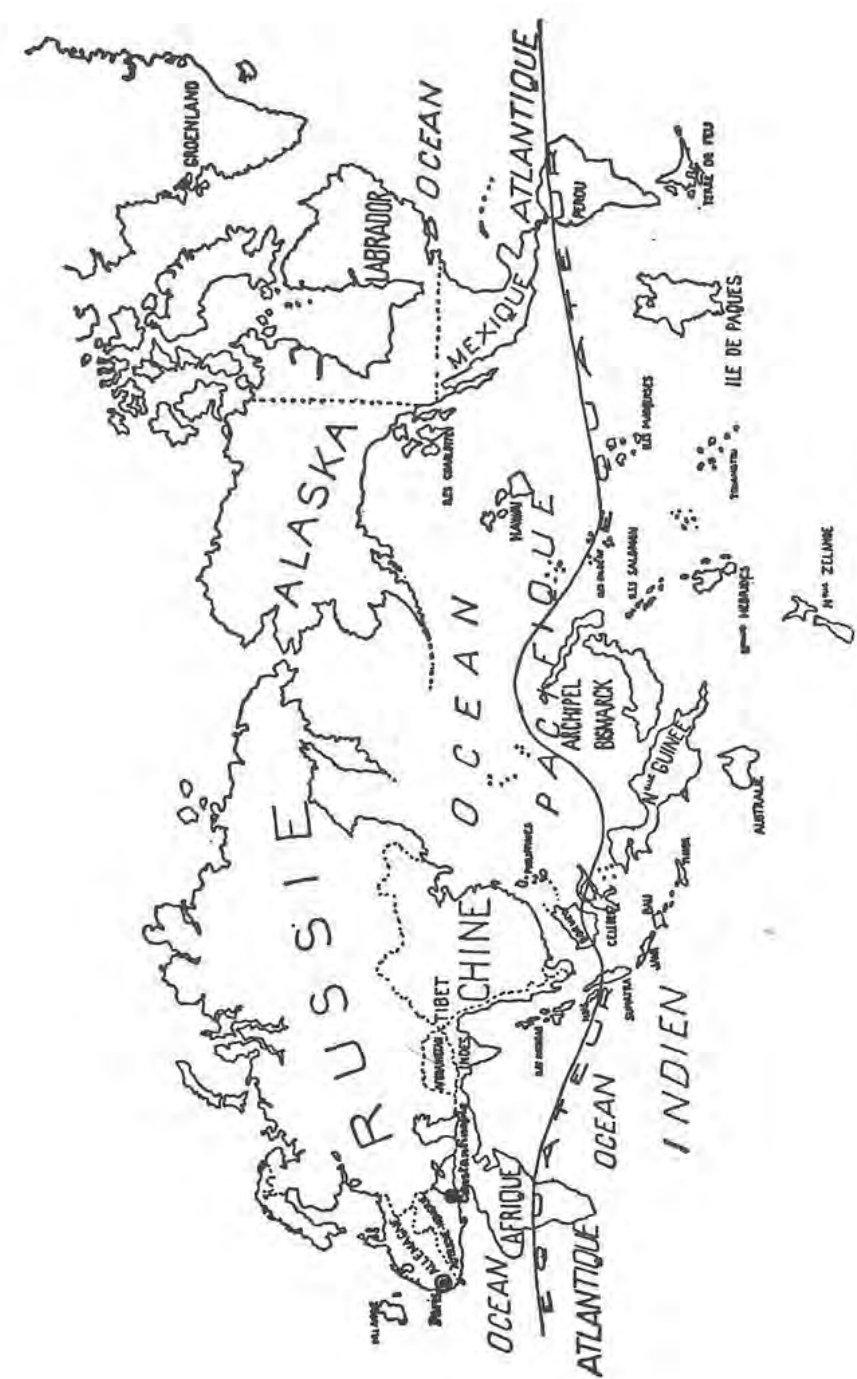
[568] Crampton, *Mapping*, 2010, P.22.
[569] Ibid.

"Space seems to be either tamer or more inoffensive than time: we're forever meeting people who have watches, very seldom people wo have compasses. Such places don't exist, and it's because they don't exist that space becomes a question, ceases to be self-evident, ceases to be incorporated, ceases to be appropriated. Space is a doubt."
— GEORGE PEREC [570]

The artistic practices of the Situationists and Dadaists resulted in a notion of art (map art) that was not framed in traditional painting, but could be a own practice.[571] Several artists focussed on this practice and followed the notion of a negation of neutrality and objectivity of representations of the world, as one of these artists, Catherine D'Ignazio (kanarinka) states:

"The question now for artists (and likely for cartographers) is emphatically not how to make a »better« picture of more »accurate« map. The world in fact, needs no new representations at all. It needs new relations and new used; in other words, it needs new events, inventions, actions, activities, experiments, interventions, infiltrations, ceremonies, situations, episodes and catastrophes. We have departed from a world of forms and objects and entered a world of relations and events. But we still desperately need art and maps. Is it possible to think of a map not as a representation of reality but as a tool to produce reality?" — CATHERINE D'IGNAZIO [572]

Consequently, mapping is more a form of imagination rather than representation. Cultural geographer Denis Cosgrove is known for an approach of dissolving the isolation of mapping and art. For him the art-science differentation was more apparant than real.[573] He examined a variety of artistic mappings and especially questioned the association of art and aesthetics, thus art was not about how visual attractive it is.[574]

As an example, a map of the late 19th century that shows the expansion of the British empire in red. The artist, Walter Crane, made efforts on working against the ugliness of the Victorian consumer society. An approach that was many years before Benjamin's execution on the effects on art of mass production:

[570] Perec, *Spieces of Spaces and Other Pieces,* 1974.
[571] Crampton, *Mapping,* 2010, P.166.
[572] Kanarinka, *Art-Machines, Body-Ovens and Map-Recipes,* 2006, P.25.
[573] Cosgrove, *Art and Mapping,* 2006.
[574] Crampton, *Mapping,* 2010, P.167.

Fi.77 Imperial Federation Map Showing the Extent of the British Empire, 1886.

When taking a closer look at Atlas who holds the world, one can see a label of *human labour*. Therefore, the worker's strength is what everything holds together, including the empire.[576] Thus, instead of a support of imperialism, the map maybe includes subversive ambitions to socialist forms of power. The map is therefore not mere of a aesthetic nature.

Cosgrove then includes Bruno Latour's notion of *immutable mobiles* to emphasise on science's rely on the visual persuasiveness of its images (maps).[577] He uses this notion as *instrument that preserves the meaning and truth claims of scientific observations as they circulate across space and time*, therefore he proclaims that the scientific map has to transform its informations in a universal language, just as the artistic production of maps has to, which leads to a shared *epistemological status of art and science*.[578]

After this short side note, one can try to comprehend a historical development of counter-mapping. Map art began with the surrealist works in the 1920s, like the surrealist world map from 1929. Then was continued by individual works by e.g. Max Ernst in the 1930s and Marcel Duchamp in the 1940s. But also Jasper Johns (*Map*), Lucio Fontana (*Concetto Spaziale*) or Braque.[579]

All these combines an understanding of (map) art which is not completely focusses on the aesthetic experience rather than the question of truth. Therefore, Catherine D'Ignazio (kanarinka) classified three main containers of map art out of the development of the *spatial turn* of the arts.[580] She state that within a new relation of space and time new ways of representing the world are needed:

> *"1. brings light to other people's world*
> *2. produces shared understanding of our world*
> *3. can reconfigure cultures*
>
> *The accelerated accumulation and circulation of capital, conflict, and people around the globe is a phenomenon that required (and is still requiring) diverse societies to world, a world which, economically and technologically speaking, is already right in their backyard."*
> — CATHERINE D'IGNAZIO [581]

Following ideas from David Harvey's book *The Condition of Postmodernity* (*how we present the world to ourselve*")[582], she offers three categories of contemporary cartographies:

[575] Bilftcliffe, *Walter Crane and the Imperial Federation Map Showing the Extent of the British Empire*, 2005, P.65.
[576] Crampton, *Mapping*, 2010, P.167.
[577] Ibid., P.169.
[578] Cosgrove, *Maps, Mapping, Modernity*, 2005, P.37.
[579] Crampton, *Mapping*, 2010, P.173.

[580] Kanarinka, *Art and Cartography*, 2009.
[581] Ibid.
[582] Harvey, *The Condition of Postmodernity*, 1990, P.240.

1. Symbol Saboteurs

"Artists who use the visual iconography of the map to reference personal, fictional, utopian or metaphorical places."
— CATHERINE D'IGNAZIO [583]
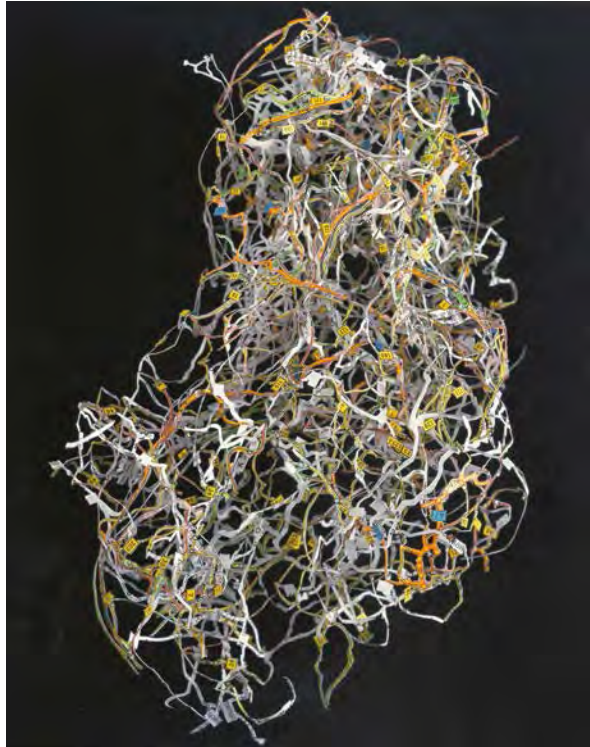
Fi.78 Katchadourian, *Austria*, 1997.
[583]   Kanarinka, *Art and Cartography*, 2009.

2. Agents and Actors

"*Artists who make maps or engage in situated, locational activities in order to challenge the status quo or change the world.*"
— CATHERINE D'IGNAZIO [584]

Fi.79 Ernst, *Europe after the Rain I*, 1993.
[584]   Kanarinka, *Art and Cartography*, 2009.

3. Invisible Data-Mappers

"*Artists who use cartographic metaphors to visualise informational territories such as the stock market, the internet, or the human genome.*"
— CATHERINE D'IGNAZIO [585]

However, D'Ignazio's three categories from 2004 were a good starting point for differentiating map art of the last century, but consequently there developed a bigger diversity of mappings that are now being produced. Therefore, the following section will try to show a more detailed taxonomy of contemporary cartography with the help of Hans Ulrich Obrist. Nevertheless, also recent artistic practices are strongly tied to the early traditions of opposing mapping practices from Paris more than 100 years ago.

Mapping has especially emerged in the information age to address the ubiquitous problem of complexity by identifying otherwise invisible or unmappable circumstances. By being confronted with a new amount of data unleashed by the new communication structures of the internet and thus new ideas about commerce and community, mapping has become a way of making sense of things.[586] Mapping therefore is given an important role relating to pass a seeming physical/digital divide: the conceptual glue linking the real physical world and the world of social networks and electronic communication.[587]

"*Far from holding up a simple mirror of nature that is true or false, maps redescribe the world – like any other document – in terms of relations of power and of cultural practices, preferences, and priorities.*"
— BRIAN HARLEY[588]

Thus, mapping is core element of design, since to design means to visualise information that allow new interpretations. So instead of a determining, measured and completed artefact of the noun *map*, this thesis is oriented towards a term of *mapping* which describes the ongoing process of conceptualisation and visual abstraction to analyse data.[589] As James Corner puts it, mapping is more a *collective enabling enterprise*, a creative act that describes and constructs the space we live in, a process that *reveals and realises hidden potential.*[590]

Therefore, this thesis will especially emphasise on artistic approaches of designers and artists as new cartographers of territories and networks, because *maps are too important to be left to cartographers alone.*[591]

Fi.80 Wattenberg, *Noplace*, 2007.
[584]   Kanarinka, *Art and Cartography*, 2009.

[586-590] Abrams et al., *Where/Abouts*, Else/Where, 2005, P.12.
[591]   Harley, *Deconstructing the Map*, 1992, P.213.
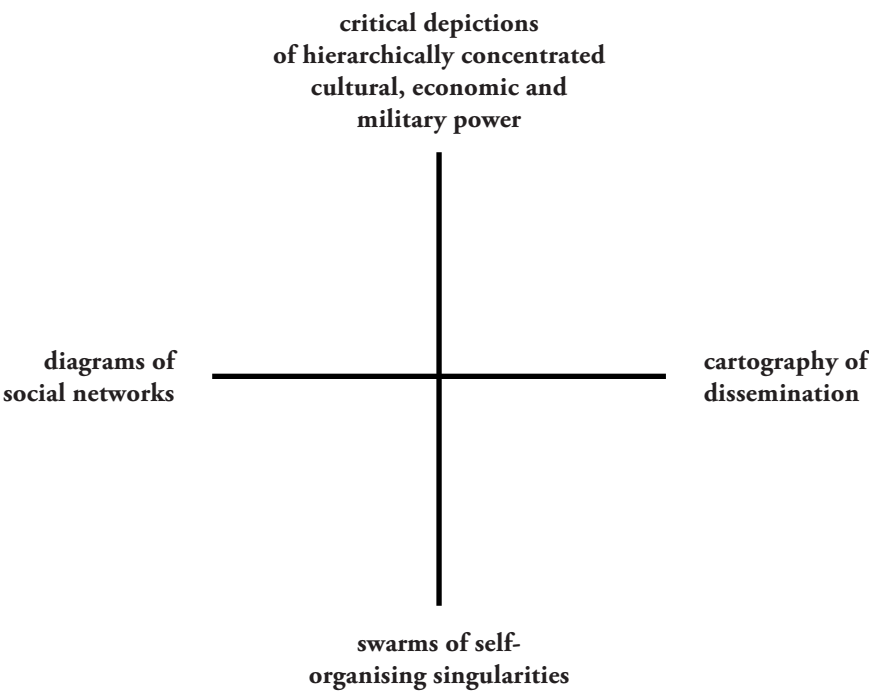
Mapping Networks

The mapping of networks becomes crucial in times of the stated *networks society*. The new transport- and communication structures lead to relativistic notions of space. As Brian Holmes states, *networks have become the dominant structures of cultural, economic and military power.*[592]

However, the network, from above, has the same chances in terms of misrepresentations as the traditional aerial map. The critical cartographers conclude for aerial maps: "*Here technology has suppressed social relations.*"[593] Therefore, Harley calls for a new strategy of map-reading: "*Instead of picking up social messages that the map emphasises, we must search for what it de-emphasises; not so much what the map shows, as what it omits.*"[594] Nevertheless, J.J. King describes that networks are certainly resistant to such a synoptic aerial view by emphasising that networks *at once inspires and thwarts the cartographer.*[595] Thus, King supports a *node-centric* perception of informations that respects incompleteness and focuses on the crucial relations (with whom each interacts an why).

Furthermore, Frederic Jameson proclaims the need for an *aesthetics of cognitive mapping* to resolve the incapacity of our minds, at least at present, to map the *great global multinational and decentered communicational network in which we find ourselves caught as individual subjects.*[596] He perceived this cartographic aesthetics as possibility to relate the abstract knowledge of the information age with imaginary perceptions that define everyday life. A techno-opistimistic approach of cartography should be countered by a new visual terminology for a clearer understanding of symbolic relations, like social roles, class divides, and hierarchies.[597] Eventually, Jameson calls for the need of a *some as yet unimaginable new mode of representing* that allows *again [to] begin to grasp our positioning as individual and collective subjects and regain a capacity to act and struggle which is at present neutralised by our spatial as well as our social confusion.*[598]

[592] Holmes, *Counter Cartographies*, Else/Where, 2005, P.20.
[593] Harley, *Deconstructing the Map*, 1992, P.213.
[594] Ibid.
[595] King, *The Node Knows*, Else/Where, 2005, P.45.
[596] Jameson, *The Cultural Logic of Late Capitalism*, 1991, P.44.
[597] Holmes, *Counter Cartographies*, Else/Where, 2005, P.20.
[598] Jameson, *The Cultural Logic of Late Capitalism*, 1991, P.44.

Based on Frederics's notion, Brian Holmes provides a scheme of four types of mapping related to different fields of social organisation to address recent state of critical cartography:

critical depictions of hierarchically concentrated cultural, economic and military power

diagrams of social networks

cartography of dissemination

swarms of self-organising singularities

Fi.81 Holmes, *Quadrant of Network Mapping*, Else/Where, 2005, P.22.

Since the focus of this thesis is on political structures, the first group of cartographies of hierarchical power is paramount. A representative example of a critical analyses of politics in times of globalisiation therefor are the *organigrams* by the French Artists *Bureau D'études*. They create complex maps like the *The World Government* from 2003, in which they use over 40 different categories of actors linked into various networks. Although a seemingly endless repetition of links, the relations form greater formations which represent different hierarchical orders.[599]

> "*To understand a real thing in its totality we always tend to work from its parts. The resistance it offers us is overcome by dividing it.*"
> — CLAUDE LÉVI-STRAUSS[600]

Claude Lévi-Strauss compares the analytical approach to the displayed visual method of miniaturisation by saying that the whole complex becomes less formidable and thus can be easier *grasped, assessed and apprehended.*[601] Thus, though an approach of miniaturisation, the aesthetics of cognitive mappings forms a way for an individual to understand the complexity of the networked world.[602]

The following section will therefore look at two specific projects of the field of mapping networks in particular to gain insights for the practical part of this thesis. To begin with, the work of Mark Lombardi will be investigated, especially because artists like the mentioned Bureau d'études were notably influenced by his significant work. And as a second example, a Marxist mapping from François Chesnais will represent a classical representer of network-related world views.
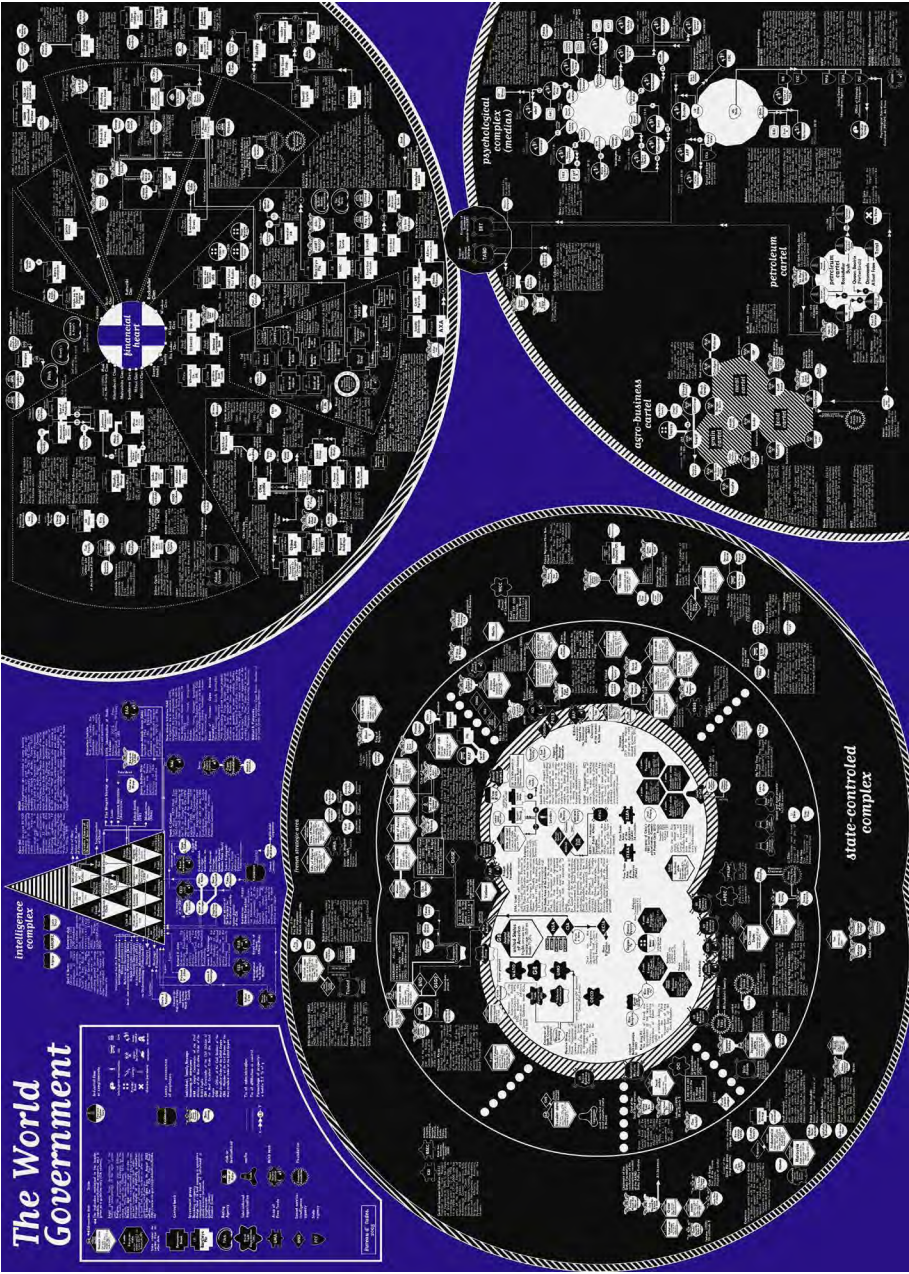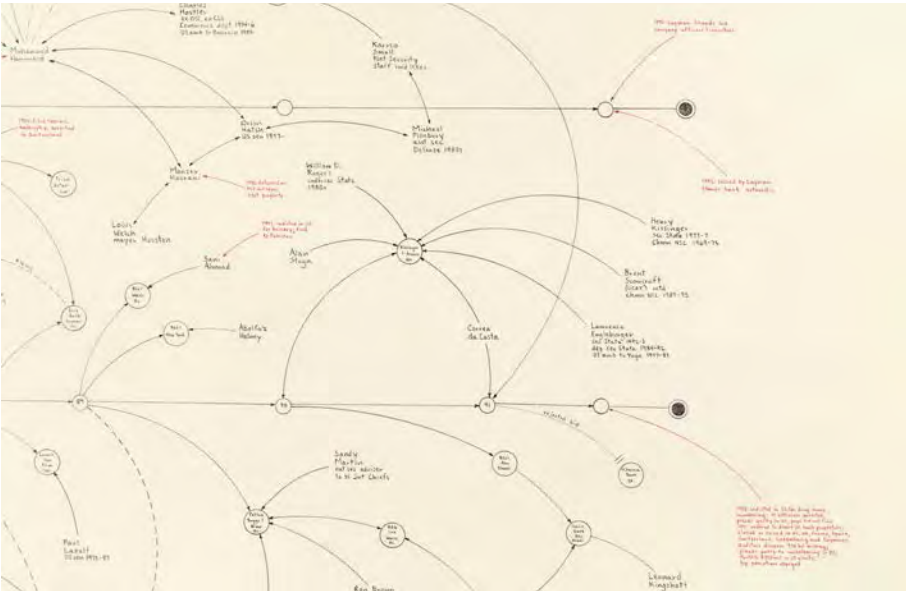

Fi.82 Bureau D'Etudes, *An Atlas of Agenda's: Mapping the Power, Mapping the Commons*, 2015, P.42-43.

[599]   Holmes, *Counter Cartographies*, Else/Where, 2005, P.23.
[600]   Lévi-Strauss, *The Savage Mind*, 1996, P.23.
[601]   Ibid.
[602]   Holmes, *Counter Cartographies*, Else/Where, 2005, P.23.

Related Work – Mark Lombardi

Information

Author:
Mark Lombardi

Name:
World Finance Corporation
and Associates

Country:
U.S.

Date:
1970-1984

Medium:
Drawing

Domain:
Politico-economic networks

Data

Quantitative:
Political and economic actors (politicians, economists as well as governmental and non-governmental organisations)
Encoding: circles

Relational:
Qualitative connections of actors
Encoding: lines with arrows
Red: corruption and criminal acts
Black: general progress

Fi.83 Lombardi, *World Finance Corporation and Associates*, 1984.

Mark Lombardi was a conceptual artist who is known for his *sociograms*, a forms of graphs that is used to analyse social network, which he calls *narrative structures*. These networks represent complex politico-economic power structures in a aesthetic and graspable form.

The networks consist of up to 300 names of a variety of politico-economic actors from known corporate groups to terrorist networks.[603] The relations are decoded into arrows for which he used stencils and additionally he labeled references and informations about names. Thereby, black lines represent general processes of political or economical events and red lines prod to corruption and criminal acts. Altogether, he describes his approach as follows:

"*I call them »narrative structures« because each consists of a network of lines and notations which are meant to convey a story, typically about a recent event of interest to me, like the collapse of a large international bank, trading company, or investment house. One of my goals is to explore the interaction of political, social and economic forces in contemporary affairs. […] Working from syndicated news items and other published accounts, I begin each drawing by compiling large amounts of information about a specific bank, financial group or set of individuals. After a careful review of the literature I then condense the essential points into an assortment of notations and other brief statements of fact, out of which an image begins to emerge.*

My purpose throughout is to interpret the material by juxtaposing and assembling the notations into a unified, coherent whole. In some cases I use a set of stacked, parallel lines to establish a time frame. Hierarchical relationships, the flow of money and other key details are then indicated by a system of radiating arrows, broken lines and so forth. Some of the drawings consist of two different layers of information – one denoted in black, the other, red. Black represents the essential elements of the story while the major lawsuits, criminal indictments or other legal actions taken against the parties are shown in red. Every statement of fact and connection depicted in the work is true and based on information culled entirely from the public record."
— MARK LOMBARDI[604]

603   Steinhofer, *Der Lombardi Code*, 2012, Dare.
604   Lombardi, *Artist Statement*.

For a talk held at the *Experimenta Design* in Lisbon 2009, Ben Fry proclaims two themes for the future of design by relating to Lombardi's work. Firstly, the the demand for a humanist view of data and relying on own faculties to tell a story. Secondly, to improve data-related discussions by focussing on the essential instead of being fascinated by the intricate and complicated.[605]

Fry states that in times of a tedium of data visualisations a certain *generative aesthetic* (necessary to differentiate from Max Bense's notion) developed, which heavily relies on *intricate diagrams and complex visual images*.[605] Instead of visually abstracting the essential information in the original sense of design, visualisations are used to create an obscuring superficialness.

Edward Tufte's basics, by whom Lombardi was notably influenced[607], are blindly obeyed without reflecting and comprehending the data. One could speak of positivistic *Tuftians*. Fry differentiates this techno-positivistic approach (concurrency to the situation of cartographers) of visualisers into two issues: failure of the creator to understand the data and thus the missing wish to do so caused by the satisfaction through the pure style and complexity of the image, even if meaningless.[608]

In contrast to Lombardi's work, a fundamentally human thought process becomes visible due to filter processes always aiming on the the story. Fry concludes that too much visualisation work is just a visual representation of the data set, a failed process of simplification, which could only be countered by thoughtfulness, focus and a great urge to understand data.[609] This is, next to the political quality of Lombardi's work, the crucial heritage for (data) visualisations.

Fi.84 Lombardi, Scribbles.

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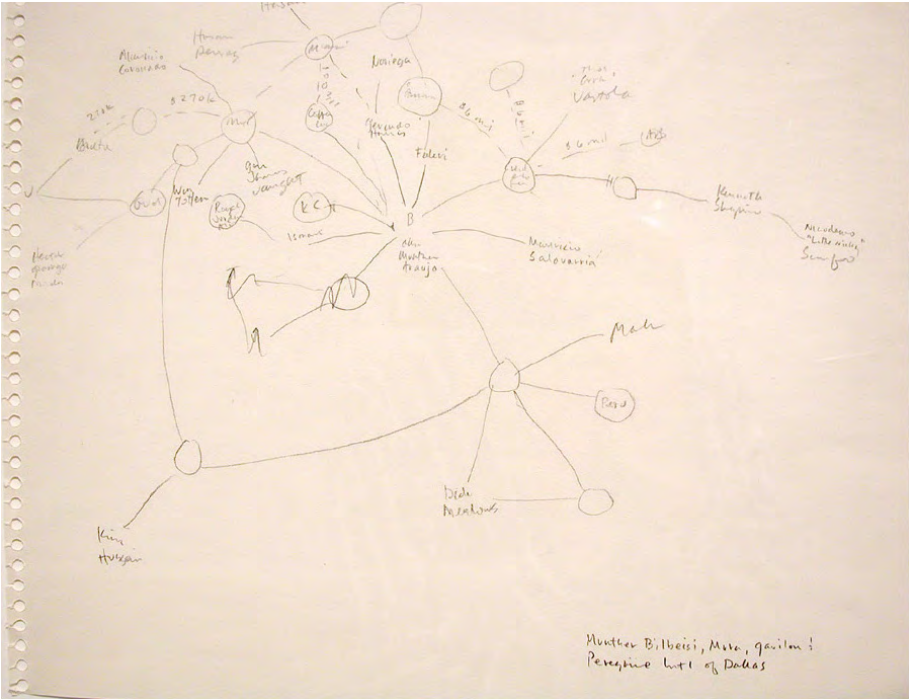
605   Fry, *Learning from Lombardi*, 2009.
606   Ibid.
607   Hobbs, *Mark Lombardi: Global Networks*, 2003, P.41.
608   Fry, *Learning from Lombardi*, 2009.
609   Ibid.

Related Work – François Chesnai

Information

Author:
François Chesnais

Name:
Centers and Peripheries

Country:
France

Date:
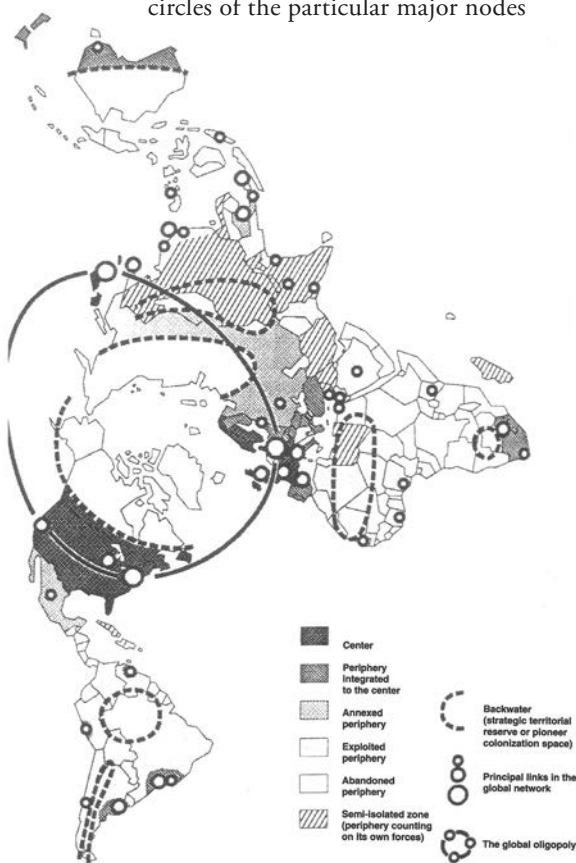1992

Medium:
Cartography

Domain:
Social relations

Data

Map:
Polar azimuthal equidistant projection

Spatial:
Hierarchical distribution of regions
From central circuits of global finance to
abandoned peripheries
Encoding: Black - Center
to White - Periphery

Relational:
Links of the global oligopoly
Encoding: Circuit lines and outlined
circles of the particular major nodes

Fi.85 Chesnais, *Centers and Peripheries in the World*, 1992.

The French economist François Chesnais created the map *Centers and Peripheries* in 1992 as an attempt to visualise social relations in terms of the globalisation of capital.[610] It basically consists of three layers:

1. A circuit linking the U.S., Western Europe and Japan (Triad regions), which form a global oligopoly regarding the major part of industrial and financial exchanges.

2. Major nodes of the global network visualised by circles

3. Hierarchical relations between various regions of *center, periphery, annexed periphery, exploited periphery, abandoned periphery.*

Chesnais applies a Marxist analysis by showing how globally fragmented production lines are coordinated through the computerised circuits of the financial sphere.[611] Eventually, his map fittingly represents the financial situation when absolute notions of spaces constitute no noticeable limitation anymore, thus a relativistic hierarchy of social relations in a *post-national era*.[612] Furthermore, his choice of a polar-centred projection supports the domination of a Western World and the discrediting of the *peripheries*. Also the usage of a determine legend that is oriented towards an aesthetic of classical cartography in combination with his notion of relativistic spaces points out his critical understanding of the mapping process. Thus, Chesnais' map is a inspirational example for a Marxist and critical cartography examination. J.J. King therefore states:

"*Today, things that are symbolically related are brought into a network proximity that can mitigate or redeem physical distance. This doesn't mean the end of geography, but rather its re-emergence in a new form, centred on the instructions, interactions and connections that order global capital across national boundaries - a world reformatted along the lay lines of financial flow […] a sort of cartography after information.*"
– J.J. KING [613]

610   Chesnais, *La Mondialisation du Capital*, 1994, P.26.
611   Holmes, *Counter Cartographies*, Else/Where, 2005, P.22.
612   Ibid.
613   King, *The Node Knows*, Else/Where, 2005, P.44.

Mapping Mapping

A new generation of artists, most of them in their 20s or 30s, is concerned with a self-reflective approach to mapping processes by questioning their social and cultural effects or developing new perceptions of representing scientific data in opposite to any professional assumptions, completely in line with the practice of *critical design* (a notion coined by Anthony Dunne and Fiona Raby).[614] Or as Cosgrove writes: "*the most challenging mappings today are found in the create and imaginative work of artists, architects and designers, neither seeking absolute empirical warranty for their maps nor claiming for them any metaphysical revelation.*"[615] One can almost speak of tendencies of a *expressionism of cartography*. Therefore, the following section will have a closer look at such an artist, in particular the painter Julie Mehretu.

[614]   Abrams et al., *Where/Abouts*, Else/Where, 2005, P.16.
[615]   Cosgrove, *Maps, Mapping, Modernity,* 2005, P.16.

Related Work – Julie Mehretu

Information	**Data**
Author: Julie Mehretu	Free abstractions of transport relations
Name: Stadia	
Country: U.S	
Date: 2002	
Medium: Drawing into painting	
Domain: Architectural and urban maps	

Fi.86 Mehretu, *Stadia*, 2002.

Julie Mehrutu doesn't really paint maps, rather she creates map-like and suggestive picture worlds. Her method is one of combining drawing and painting, she claims it *drawing into painting*. The abstract layers of artificial resin remain from a distance quite abstract, but in detail one can read particular narrative elements, for example symbols of the consumer world or comics and tattoos, which translate into tangible artefacts in space like built forms or natural phenomena.[616]

"*I think of my abstract mark-making as a type of sign lexicon, signifier, or language for characters that hold identity and have social agency. The characters in my maps plotted, journeyed, evolved, and built civilisations. I charted, analysed, and mapped their experience and development: their cities, their suburbs, their conflicts, and their wars. The paintings occurred in an intangible no-place: a blank terrain, an abstracted map space. As I continued to work I needed a context for the marks, the characters. By combining many types of architectural plans and drawings I tried to create a metaphoric, tectonic view of structural history. I wanted to bring my drawing into time and place.*"
— JULIE MEHRETU [617]

In contrast to a pragmatic representation of data, her work are psychological mappings of especially architectural and urban relations of movement, like airports and airways, highways, general communication structures or flow of water and wind. As a status description *between chaos and control* these maps are metaphors of recent globalised sociopolitical relations.[618] Furthermore, Mehrutu's paintings are very large, about 6 meters.

Hence, Mehrutu's extremely large maps create a relationship between the viewing individual and the larger (social) arrangement of which everyone is surrounded by.[619] Eventually, the reflective treatment of the subject of space and the ensuing methodical execution are also inspiring for the practical work of this thesis regarding the presentation and the actual relation to space in a context of exhibition.

"*They became big for a reason. Earlier they were size of a window or a map: you could look at the whole painting at once, and could never look at one part without seeing the rest of it. But I wanted there to be a physical relationship between the body and the painting, so you could see it from a distance and have a sense of the whole, but as you came closer and closer, the entire picture would dissipate, explode. You could only be involved in one area you were looking at, and have a sense of that place, but know that it multiplied around you, and that many more events were happening. All the way from the smallest size of the marks to the large scale of the painting: that was the dimension of space. I think of these as really huge spaces.*"
— JULIE MEHRETU [620]

[616]   Abrams, *Epic Vessels* Else/Where, 2005, P.248.
[617]   Firstenberg, *Painting Platform in NY,* 2002, P.70.
[618]   Abrams, *Epic Vessels* Else/Where, 2005, P.248.
[619]   Ibid.

Fi.87 Mehretu, *Stadia II*, 2002.

[620]   Abrams, *Epic Vessels* Else/Where, 2005, P.248.

Further Mappings

As mentioned in the beginning of this chapter, Hans Ulrich Obrist curated an compilation atlas of alternative contemporary cartographies. Following his taxonomy, for each of the five groupings two essential artistic practices are displayed to give a rough overview.

Rearranged, question truth, and symbols of conventional cartography
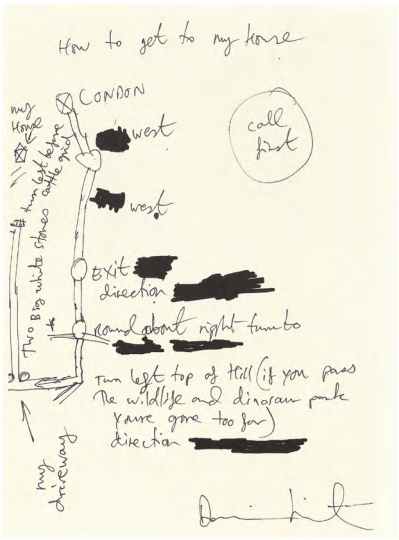
Fi.88 Louise Bourgeois, *Mapping It Out*, P.13.
Fi.89 Damien Hirst, *Mapping It Out*, P.37.

Representations of psychogeography
Terrain of contemporary life

Scientific maps to find truth
of natural world
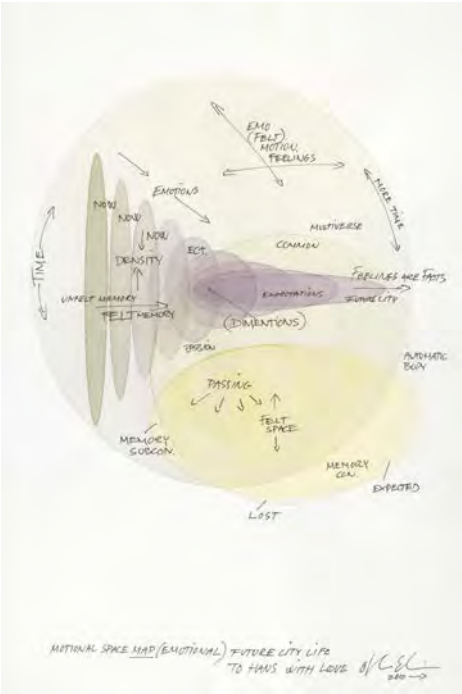
Fi.90 Olafur Eliasson, *Mapping It Out*, P.69.
Fi.91 Hans-Peter Feldmann, *Mapping It Out*, P.96.
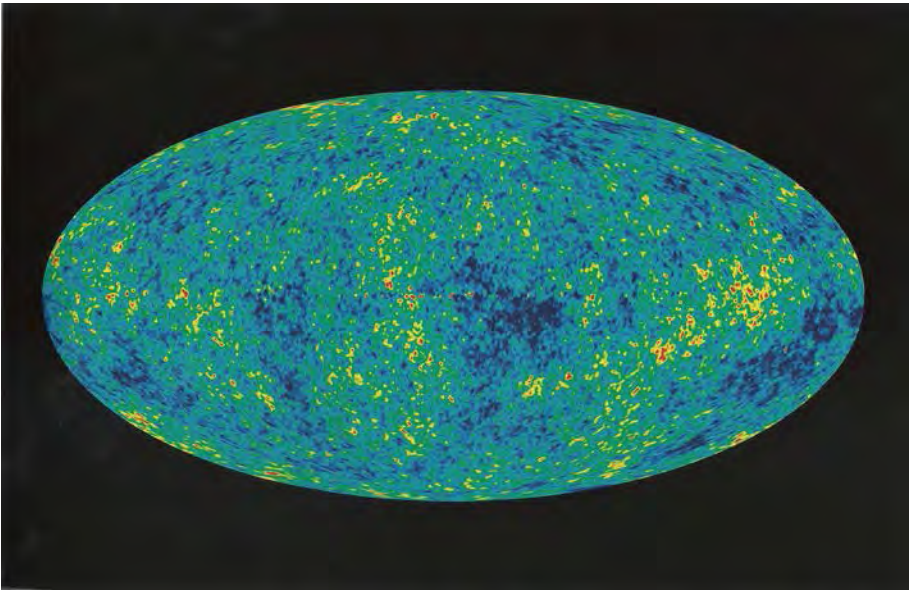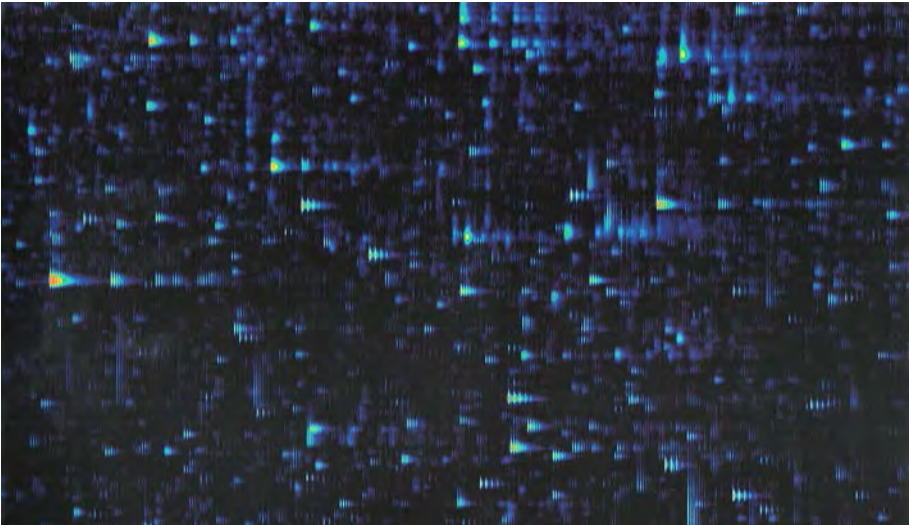
Fi.92 W. Daniel Hillis, *Mapping It Out*, P.128.
Fi.93 Gino Segro, *Mapping It Out*, P.152.

4. Invented Worlds

Projections of imaginary places, that subvert
traditional ideas of tracking real visited places
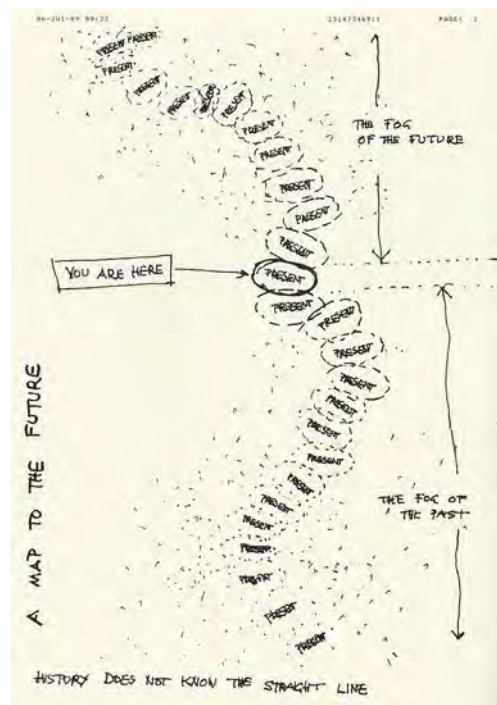
Fi.94 Casey Reas, *Mapping It Out*, P.168.
Fi.95 Yona Friedman, *Mapping It Out,* P.156.

5. The Unmappable

Mapping the unmappable
Beyond limits of cartography
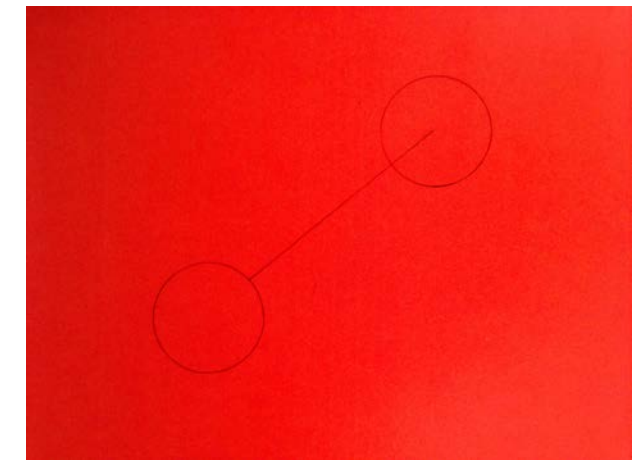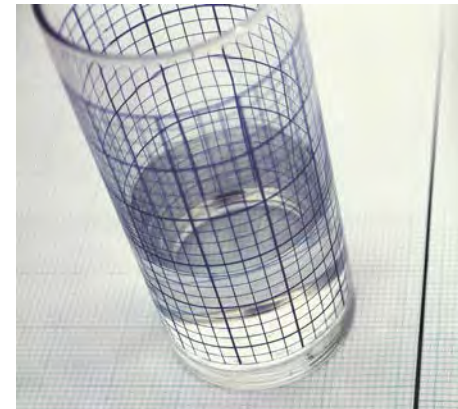
Fi.96 Fia Backström, *Mapping It Out*, P.199.
Fi.97 Koo Jeong-A, *Mapping It Out*, P.204.

Fin

"*Map artists […] claim the power of the map to achieve ends other than the social preproduction of the status quo, Map artists do not reject maps. They reject the authority claimed by normative maps uniquely to portray reality as it is.*"
— DENIS WOOD [626]

Altogether critical and dissident cartographies arise against the background of dominant mapping technologies, like GIS, and thus a technocratic perception of the world. They appear as counter-behaviours in the sense of Foucault: "*deliberately denormalised refusals of the reason of State, elaborated with the very tools that consolidate the control society.*" [627]

Tufte describes the conceptual step from maps of pre-existing settings to newly measured expressions of social relations: "*Despite their quantifying scales and grids, maps resemble miniature pictorial representations of the physical world. To depict relations between any measured quantities, however, requires replacing the map's natural spatial scales with abstract scales of measurement not based on the geographic analogy.*" [628]

Thus, *maps are interfaces between knowledge and experience.* [629] They are more than just visual descriptions, instead as series of images, seen from extracorporeal perspective, they represent *shared knowledge*. [630] On can state that the easiest and most efficient way to make a map is to be uncritical and dominantly instrumentalist. In particular, just creating maps within a logic of infographics and data visualisations without thinking of consequences regarding the usage in the physical world. [631] Consequently, the new relation of constructed (*digital*) and real physical space raises problems which are political, social and moral in the sense of postdigital. Following van Weelden, new methods of cartography, especially network mapping, are tools to address these research fields. Therefore, this thesis states that maps are postdigital artefacts for understanding a world which is whether completely digital nor graspable within absolute notions of space.

However, traditional topographical maps are still usable to visualise everything that relates to spatial coordinates, albeit these new relationships of knowledge, power, capital, intelligence and technology dominate our world. [632] New maps should be able to filter these essential problems from a multitude of side issues in a complex world. They are needed to understand the bigger overlying problems, only then they can have a real cultural relevance, instead of just being problem solvers. [633] This leads also to a new understanding of design, which will be clarified in the beginning of the next chapter.

Mapping becomes a cultural concern, a type of gathering, presenting, receiving and reconceiving knowledge of the world and the individual's place in it. [634] Abrams and Hall even evaluate if *mapping* could outperform *designing* as a term that expresses the complex but related practices of involved disciplines of architecture, biology, geography, interaction design, social network analysis, statistics, art, cartography, wayfinding design and urban studies. [635] However, cartographical approaches can be rewarding when applied to artistic practices, as Ben Fry states:

"*Over centuries, cartographic skills have been honed for tackling complexity and establishing hierarchy, to present rich information in a limited space.*"
— BEN FRY [636]

Finally, one can see that the pattern of the development of perception of spaces in humanities also applies to the practical discipline of cartography. From previous absolute and determinative representations to newer relativistic visualisations of social relations due to new transport- and communication structures. Again, the solution is not the final replacement or implantation of a specific notion, but diversity, simultaneity and critical reflection beyond technocratic ideologies. Thus, mapping as a political action is subversively able to conquer deterministic and reactionary ideas, and to evolve the map to a medium of geopolitics of the 21st century.

[626]   Wood, *Map Art*, 2006, P.183.
[627]   Holmes, *Counter Cartographies*, Else/Where, 2005, P.25.
[628]   Tufte, *Visual Explanation*, 1997, P.14-15.
[629-631] Weelden, *Possible Worlds*, Else/Where, 2005, P.26.

[632]   Bouman, *Re: Orientation*, Else/Where, 2005, P.56.
[633]   Ibid., P.56.
[634]   Abrams et al., *Where/Abouts*, Else/Where, 2005, P.17.
[635]   Ibid.
[636]   Fry, *Geneography*, Else/Where, 2005, P.265.

"We not need to be anxious about cartography, only anxious about being uncritical."
— MICHEL FOUCAULT [637]

Obrist rejects the idea of the disappearance of *terrae incognitae* in times of completely explored world. Especially tendencies like growing displacement, migrations and globality indicate a variety of new types of voids.[638] The process of mapping evolves and seems to be a fitting key to possible solutions. Obrist states finally that there is a point when everything could become a map. "*Maps can be totalising visions, but they always invite their own revision*"[639] Astronomer Dimitar Sasselov therefore states the question: *What is not a map?*

Fi.98 Fludd, *Utriusque cosmi, maioris scilicet et minoris, metaphysica, physica, atque technica historia*, 1617.

[637]   Foucault, *Space, Knowledge and Power*, 1984, P.24.
[638]   Obrist, *Mapping It Out*, 2014, P.237.
[639]   Ibid.
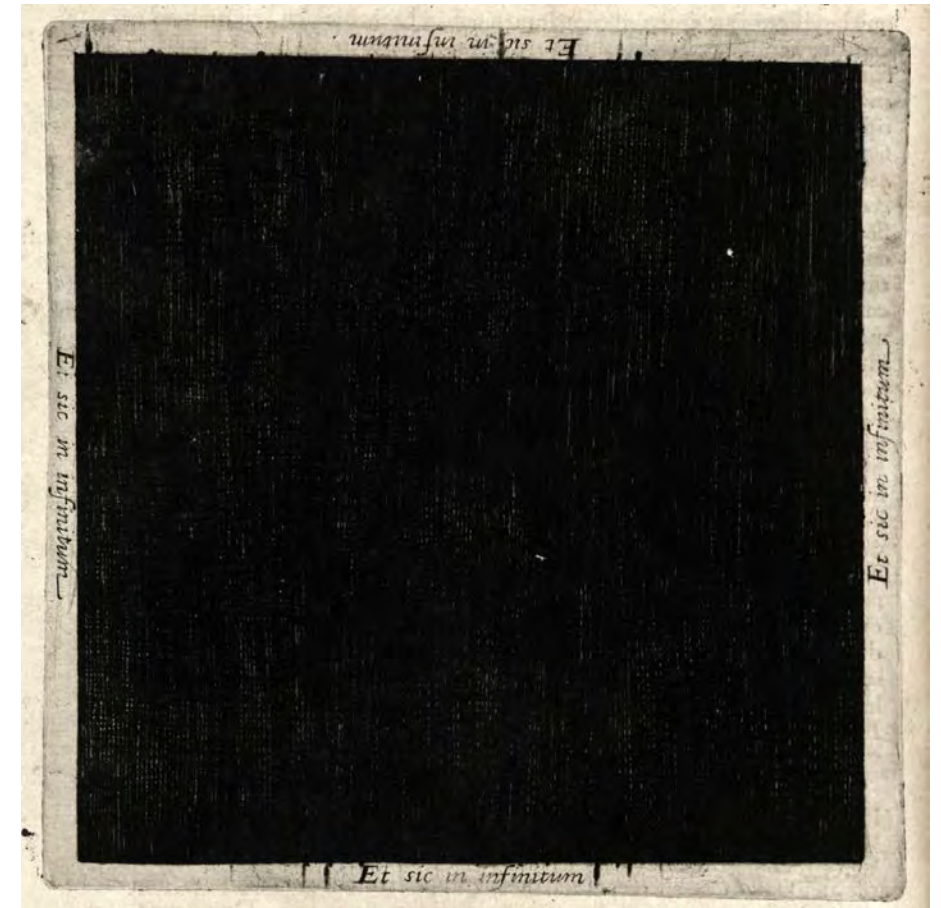
Visibility & Visualisation

Visibility

Mapping creates particularly visual political artefacts. Therefore, Siegrid Weigel understands the spatial turn of culture studies as *privileged treatment of cartography*.[640] However, there is obviously a difference between a notion of mapping of cultural studies and technological or mathematical notion of *map content onto another content.*

Thus, one has to differentiate the context of mapping. As showed in the previous chapters, a map is just a model of space and not the space itself. Therefore, the model is not spatial, but logistical and *anaesthetic*, instead of being related to physical experiences, one can speak of cognitive maps in the sense of Jameson.[641] In the end, space is just a metaphor regarding the four humanistic models of space of this thesis. Eventually, Buci-Glucksmann states a *mapping-view*, which is always a theoretical view which requires abstraction.[642]

Just as the Renaissance perspective for the visual arts, mapping and cartography were the first steps to abstract physical space by displaying it symbolically and based on geometrical rules.[643] Mapping is then the creation of visual metaphors for the visualisation of information.[644] In the context of the panel *Mapping the World* of one of the earlier *transmediale* festivals in 2003, Dietmar Offenhuber talked about the alternatives of representation (iconic links to real world) and diagrams (numerical abstractions) for works that related to a category of data visualisations (mapping).[645] As the method of the practical work of this thesis is a visualisation of data, one could ask if it should be called mapping or diagram.

[640] Weigel, *Kartographie, Topographie und Raumkonzepte in den Kulturwissenschaften*, 2002.
[641] Ernst, *Jenseits des Archivs*, medienkunstnetz.de.
[642] Buci-Glucksmann, *Mapping und Text*, medienkunstnetz.de.
[643] Ernst, *Jenseits des Archivs*, medienkunstnetz.de.
[644] Dodge et al., *Atlas of Cyberspace*, 2001.
[645] Ernst, *Jenseits des Archivs*, medienkunstnetz.de.

Thus, mapping basically means a metaphorisation as visualisation, except from the mathematical approach of *mapping* a dataset onto another. Diagrams on the other hand, follow a media-archaeological idea:

> "*conceptional instead of visual*
> *topological instead of geographical*
> *data based instead of narrative*
> *connective instead of spatial*
> *numbers instead of visual appearance*"
> — WOLFGANG ERNST [646]

Eventually, mapping, beyond a cartographical metaphor, means the assessing of data in relation.[647] Within the stated models of space, especially the relativistic notions, space is only a metaphor. Thus, this thesis will understand mapping in a topological sense to not confuse the transactions of the imaginary (iconographic) with the one of the symbolic (indexical).[648] A further semiotic analysis regarding mapping and maps in general seems valuable but shall not be the focus of this thesis since the basics were explained.

As Tufte states, this approach of visualisation of quantitive information into abstract, non-objective, images is a quite new invention.[648] The classical or historical case was to transfer images into texts, but with the recent media/art historical discourses the aim of the imaging methods is to transfer data and theoretical models into images to eventually make them understandable this way.[650] Thus, mapping becomes a tool for reducing complexity of data.

Lev Manovich explicitly relates the higher interest for visualisations to the occurrence of the spatial turn.[651] He describes the term as the umbrella term for all phenomena that include space, which obviously includes mapping, diagrams and information design. Following Manovich, the notion of spatial turn is so important, because it covers all important developments of our *digital* culture in this decade.[652]

646 Ernst, *Jenseits des Archivs*, medienkunstnetz.de.
647 Basting, *Das Ende der Kartenwelt*, FAZ, 1999.
648 Ernst, *Jenseits des Archivs*, medienkunstnetz.de.
649 Tufte, *The Visual Display of Quantitative Information*, 1983, P.22f.
650 Buci-Glucksmann, *Mapping und Text*, medienkunstnetz.de.
651 Manovich, *Geomedien*, Mediengeografie, 2009, P.392.
652 Ibid.

Visual Turn

In general, images were never that present as today. Next to artistic images, technical, scientific and medial images became equally important. For example, Dr. Eric Lander from the Broad Institute, where the already mentioned Ben Fry completed his doctorate, states this development particularly for the discipline of biology:

> "*Biology is undergoing a remarkable revolution right now,*
> *from being a laboratory discipline in which people studied*
> *their own particular problem, to becoming an information*
> *science. […] there's just no substitute for visualising data: you*
> *see patterns in it that you won't be aware of any other way.*"
> — ERIC LANDER [653]

Thus, the omnipresence in media and the indispensability of visualisations in sciences gave images an unknown presence and importance.[654] Another cultural turn, the iconic turn, calls for an interdisciplinary view on the new diverse imagery. In contrast to the "linguistic turn", which claims that philosophical problems should only be solved within linguistic-analytic methods, the analysis of images should now take in a similar role for scientific rationality.[655]

A grounding concept for the iconic turn are Vilém Flusser's *techno-images*. A rough summary will introduce the notion and explain its importance. In his book *Into the Universe of Technical Images*, Flusser explains the term *techno-images* within a five steps model of cultural history, which will be illustrated in a simplified way as follows:

4D – Concrete Experience
The *nature human* is experiencing his whole life as a immediate experience as animals regarding a four-dimensional environment, also known as spacetime.

3D – Conceive and Treat
That step describes the increasing interest of humans in subjects, so reducing the world view to a three-dimensional.

653 Lander, *Geneography*, Else/Where, 2005, P.264.
654 Maar, *Icon Turn: Die neue Macht der Bilder*, 2004.
655 Belting, *Bilderfragen - Die Bildtwissenschaften im Aufbruch*, 2007.

2D – Traditional Images

This step is based on the idea, that humans have an imagination about a subject and abstract it back into a artificial image for example like drawings, but also sculptures are based on this two dimensional concept.

1D – Narrative

The next step in history was that humans started to linearise, thus to think in relations and not just isolated experiences and their abstractions(images), so we had strung images to lines of images that included the notion of processes, a historical awareness was created. But the traditional image was too vague to communicate efficiently and was replaced by another abstraction, what we call today writing system. So in this step we reduce the dimension again to a one-dimensional world view.

However, for Flusser images and writing systems are still in a fight, because such changes were not fluent and linked to a lot of cultural discussions, for example when we think of ban on images in the *Book of Exodus*. He mentions the long history of images in comparison to the short living span of writings systems with about 4000 years, so that for him the concept of writing systems is just a intermediate state.[657]

0D – Techno Images

With the technological achievements like devices and computers, images are not a result of imagination anymore, they are a product of automatic processes. Examples are photographs, videos, diagrams, signs and visualisations. Because technology is a result of scientific theories, which are based on scientific writing, the technical image is another abstraction of writing systems, so that we reach a so called *zero-dimensionality*. That means techno-images are so abstract, that they can not be related to a specific experience anymore, but are calculable.

Thus, all these new images are generated and pixel-based, which essentially mean something and therefore provide knowledge. Flusser forecasts that the alphabet will be relieved by techno-images as dominating coding.[658] This would also change the notions of space and time. However, an absolute notion of space and linear time behaviour are related to a particular cultural literacy. The same applies to images, which production and perception is dependent from ones cultural and social heritage in the sense of critical theory. Nevertheless, an evolving visual literacy strengthens the ability to *read* and understand images and thus an non-linear perception of time, which in the end could lead to a better understanding of relativistic spaces.

"*What you see depends to a great extent on what you expect to see, what you are used to seeing.*"
– JONATHAN MILLER[659]

The practical method of (data) visualisation is consequently a necessary decision for a diversity of perceptions of spaces. Following Flusser the recent time is something like transition period from a former domination of text to a more and more visual communication (Snapchat, Tumblr, Periscope, …). A fitting notion for artefacts that combine both elements is the idea of *icono-text* of Peter Wagner.[660] Maps obviously include both visual and written elements like legends or additional comments and both are essential for understanding. They are readable and visible at once, thus a hybrid of a *image-index* in the sense of Charles Pierce.[661]

[656] *Exodus*, Old Testament.
[657] Flusser, *Ins Universum der technischen Bilder*, 2000.

[658] Flusser, *Ins Universum der technischen Bilder*, 2000.
[659] Miller, 1934.
[660] Wagner, *Filmlexikon*.
[661] Buci-Glucksmann, *L'oeil cartographique de l'art*, 1996.

"Thinking without images is impossible."
— ARISTOTLE[662]

Altogether, the examination on a visual turn showed the importance of visualisation (mapping) and thus images as visual production of knowledge. It is more than gathering of data, as it gives insights into societal relations it also provides orientation. It filters and reduces complexity, but is of course not neutral in doing so. The design is always influenced by a specific epistemological interest which includes a conscious ignoring. Visualisations and maps actively and perspectively influence society: *"The image of the world we make for ourselves determines how we act."*[663]

Eventually, the aim of the practical execution of this thesis is to apply a visual reflexivity. Not only the topic of the spatial discourse itself and the conceptional structure support a critical ideology, but also the visual artefact should challenge itself. The aim of the practical work is to analyse how visibility and discursive practice intertwine. Therefore, the next chapter will deal with a concrete description of the design concepts.

[662]   Aristotle, *On Memory and Reminiscence*, 350 B.C.E.
[663]   Arch+, *Out of Balance*, 2014.

Visualisation

Once the theoretical basis was shaped, now the concrete practical process should be in focus of this chapter. So the aim after the derivation in the previous chapters is to apply practical examinations to the quadripartite structure of the models of notions of spaces. Therefore, the concept is that concrete political example cases, which are rooted in a systematic process of philosophical grounding, a sociological location and a geopolitical perception of each notion of space, on one hand reflect the theoretical discourse but by the method of data visualisation also lift this discourse to a new level in terms of visibility and visual reflexivity. Therefore, this chapter will introduce the visual concepts for each notion of space.

In this context it is important that in sense of this thesis the neutrality of a creator of critical visualisations itself is not given. Coming from a specifically postmodern and critical perception of this discourse, a complete neutrality remains an illusion. Already the choice and focus on specific elements of this spatial discourse states a definite positioning. Following the radical constructivists and their doubts of finding the truth about all spaces and cultures, the practical approach will be self-critical in its visual execution. After the basic critical attitude of this thesis with the notion of postdigital and the debatable spatial turn, and the focus on neo-Marxist theories, this self-aware approach of mapping finalises the tripartite critique of this thesis.

Therefore, following Harley's work *The New Nature of Maps*, the practical examination relates to four aspects of discourses on maps.[664]

1. Hierarchies of Visualisation

As proven artefacts of a power-knowledge complex and therefore *geographical imaginations*, maps are less representers but a connection of social ideas about space. Thus, the developed visualisations consciously use visual elements of maps in a reflexive way.

A crucial point of cartographic practices is hierarchy. A hierarchal system leads to ordering system of dependence. Thus, cartographies give the visual impression of a certain truth, which is problematic as stated previously. The approach of the visualisations counters this determination by providing four *truths* in form of the different derived notions of space.

Consequently, the focus is on showing the diversity and simultaneity of the various spaces as it was the conclusion in the chapter about the future of political spaces.

2. Cartographic Silence

Another essential topic is selectivity. The choice and emphasis of certain elements leads consequently to a skipping of other elements. This relation of constitution and omission leads to a specific notion of space and is therefore geopolitical, which Foucault calls this silence *positive statement*.[665]

The approach of the visualisations counters this by applying different attempts to show uncertainty. Next to interventions in the specific cases of a certain model of space, every visualisation will include parts that are hand-drawn to visual encode a certain form of unavoidable uncertainty. In the sense of Harley's *discourse of opposite* this contrasts to the techno-positivistic determination of computer-generated visualisations and displays an aesthetic wich emphasises on the again unavoidable objective perception of visualisations.

Even recent papers show that *sketchy information visualizations offer the prospect of greater engagement*.[666] Thus, this sketchy aesthetic contrasts a *generative aesthetic* in the sense of Ben Fry's insights on Mark Lombardi's work.

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[664] Harley, *The New Nature of Maps*, 2001, P.84f.

[665] Harley, *The New Nature of Maps*, 2001, P.34.
[666] Wood et al., *Sketchy rendering for information visualization*, 2012, City University London.

3. Geometrics/Projections

Furthermore, as explained by means of the example of the Mercator projection, the geometrics and projections additionally play a crucial role in the construction of a political worldview. The visualisations will remain in a Cartesian frame, because it is the original framework of maps and thus allows a metaphorical relation to the myth of map.

However, a projection was needed which is in contrast to Mercator not particularly Euro-centristic. Although, a completely neutral projection isn't possible due to the method of reducing a three-dimensional object like the earth to a flat plane, a compromise was found in the *Butterfly* projection.

Originally invented by the architect Bernard Cahill in 1909 [667], the projection of this thesis will be the slightly updated version of the *Waterman Butterfly* projection. However, Cahill's original was also a counter-reaction to the Mercator projection and proposed skinning the globe into eight triangular lobes, which was originally invented by Leonardo Da Vinci.[668]

Although, Cahill was more interested in a general balance which can show all the continents uninterrupted and with almost no distortion. Thus, his projection leads to a more balanced world view, next to its remarkable aesthetics. A challenging world view because of its difference to the common *North-to-South* (map-plane itself is interrupted) is supporting the critical approach.
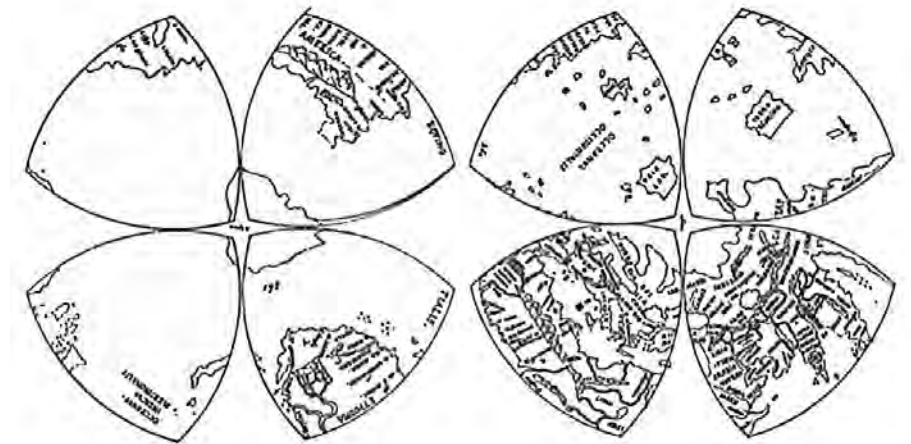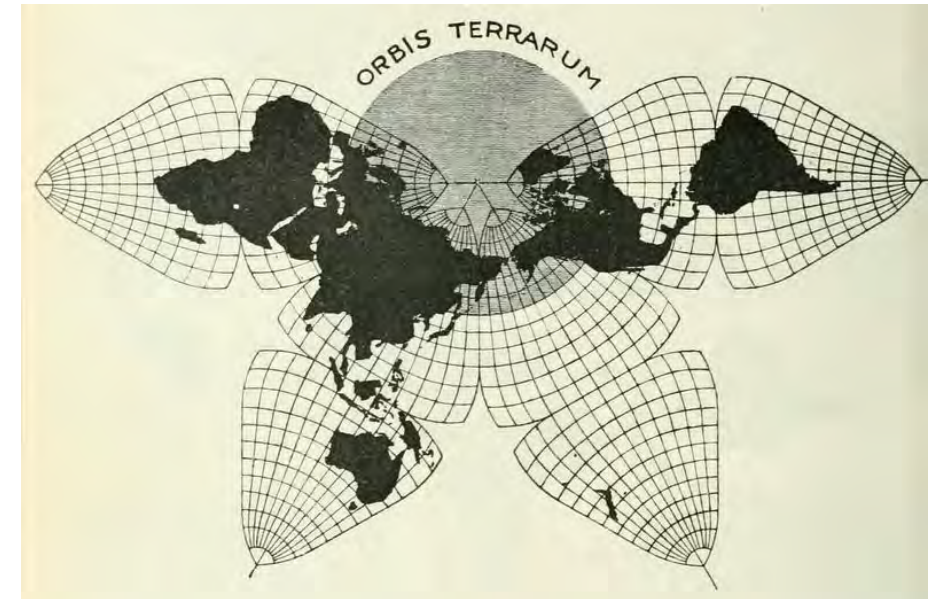
[667] Cahill, *An Account of a New Land Map of the World*, 1909.
[668] Da Vinci, *Da Vinci Globe Gores*, 1514.

Fi.99 B.J.S. Cahill's original Butterfly Map, 1909.
Fi.100 Da Vinci, Globe Gores, 1514.

4. Symbolism/Decoration

Eventually, also the aesthetics of colours and forms are shaping the map as a fragment of the discourse. Thus, the visualisations are oriented towards a traditional aesthetic of maps to metaphorise the positivistic paradigm of traditional cartography. Particularly, an aesthetic of star-maps is aimed due to its reference to the unknown space and the hardly imaginable time-space-relation of Einstein.

Furthermore, specific hand-written comments for each visualisation of the models of spaces help to understand the data by filtering and invite to explore the whole image, but thus also concisely damage the mappings regarding a seeming generative accuracy and again deterministic truth.

Additionally, each of the four visualisations will include textual informations about the specific applied theories as well as a commentary on advantages and disadvantages of the specific model of space regarding the political context. Next to a better introduction into the abstract topic, this combination of textual and visual elements supports the idea of *icono-texts* as intermedia state of an iconic turn.
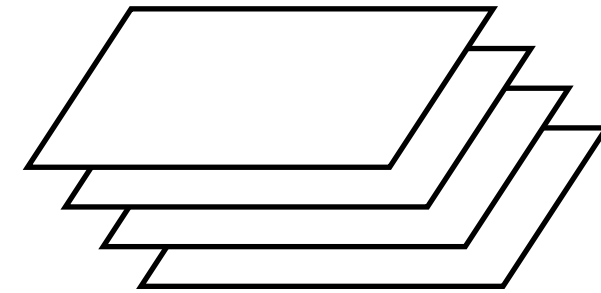
**Different projection centres
(Change of perspective)**
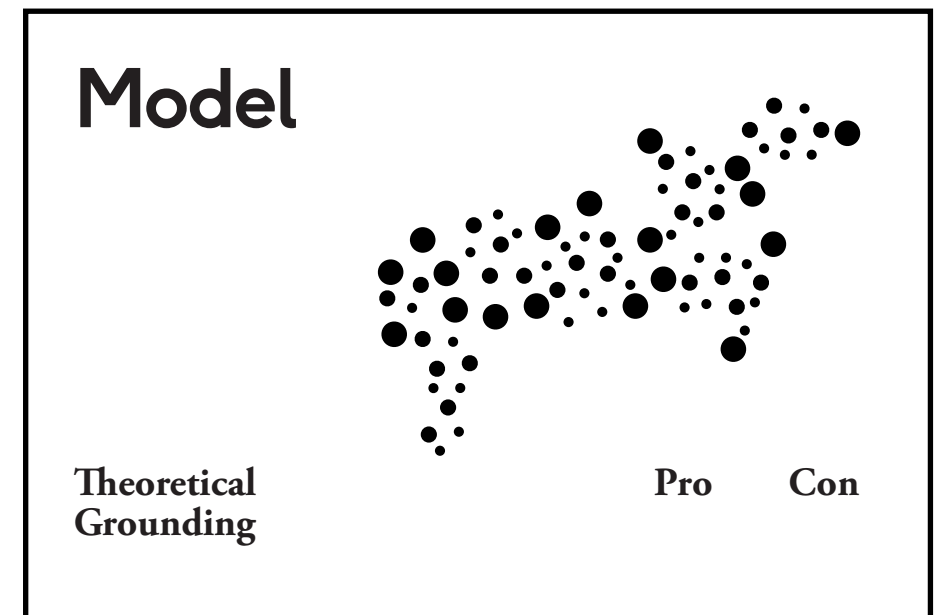
Fi.101 Quadripartite concept with textual elements.

Data

Since the method of the practical execution is a data visualisation, a potentially fitting and promising dataset is fundamental. In the case of the geopolitical subject, this data was found in the *CONIS* database of the Heidelberg Institute for International Conflict Research (HIIK) at the Department of Political Science. As anon-profit association, it is dedicated to research, evaluation, and documentation of intra- and interstate political conflicts.[669]

Particularly, the *Conflict Barometer* states an annual analysis of the database published since 1992 as the main publication of the HIIK. Therefore, non-violent and violent crises, wars, coup d'etats as well as peace negotiations are observed.[670] Therefore, the reports explains the general development, while the regional chapters give an insight into the conflict events in the Americas, Asia and Oceania, Europe, the Middle East and Maghreb as well as in Sub-Saharan Africa.[671]

Following the *new Heidelberg methodology*, the HIIK understands a political conflict as "[…] *positional difference between at least two assertive and directly involved actors regarding values relevant to a society (the conflict items) which is carried out using observable and interrelated conflict measures that lie outside established regulatory procedures and threaten core state functions, the international order, or hold the prospect of doing so.*"[672]

This thesis used the dataset of 2013, where around 2400 conflicts, ongoing as well as started, are counted. Thus, the time of conflicts becomes a number. Remarkable is the fact that the HIIK also collects the data on subnational level, which allows a spatially very concrete look at areas of conflicts.

Altogether, despite a never possible objectivity (following Bruno Latour) the methodology of the HIIK is very accurate and thus more than sufficient regarding a visualisation in this context. This is also just the basic dataset which will be complemented with various data within the specific visualisation of notions of space. A concrete explanation of the abstraction of any data is provided in the each section.

669   HIIK, *Methodik*.
670   Ibid.
671   Ibid.
672   Ibid.

VIOLENT CONFLICTS IN 2013 (SUBNATIONAL LEVEL)

NO VIOLENT CONFLICT
VIOLENT CRISS
LIMITED WAR
WAR
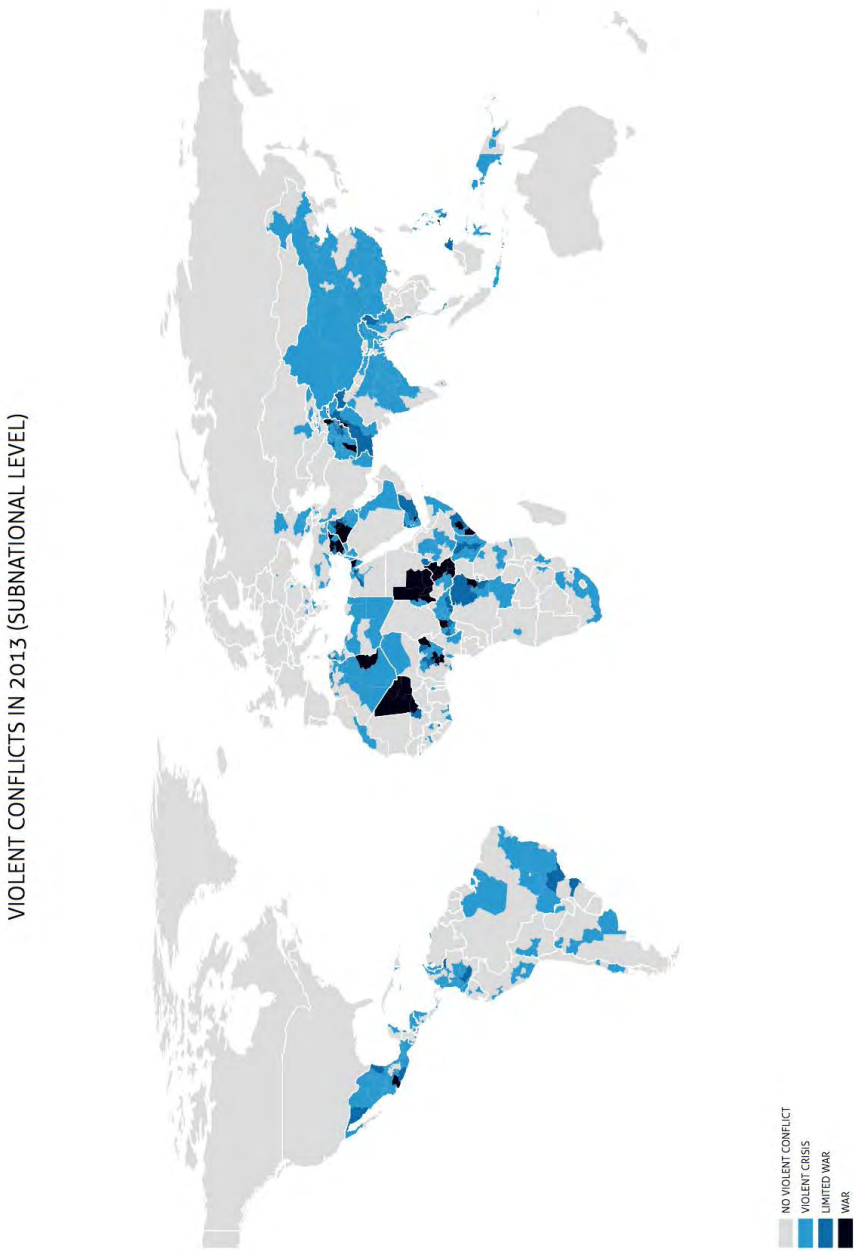
Fi.102 World Conflicts 2013, Subnational Level.

Absolute

The absolute model of space follows Huntington's geopolitical notion of the clash of civilisations. On the basis of a spatial determinism, he reduced modern global conflicts through an ignoring perspective to a simple *we*-against-*them*.

In the case of the visualisation Huntington's clash of cultures will be updated with recent *civilisations* within the practical work. Huntington's world view consists of core states and cultural systems.[673] In detail:

1. Chinese (China)
2. Japanese (Japan - isolated)
3. Hindu (India)
4. Islamic (not yet realised, but following Huntington Saudi Arabia, Turkey, Iran, Pakistan, Indonesia and Egypt are possible)
5. Slavic Orthodox (Russia)
6. Western (USA, Europe: France, Germany, Italy, UK)
7. Latin-American (he questions the existence of this civilisation because the culture of some nations is shaped by European influences)
8. African (also questioned by him, but a potential core state could be South Africa)

The visualisation follows Huntington's taxonomy, but updates the Western world (WE) according to future enlargement of the European Union[674] and the Islamic civilisation is related to the recent activity of the terror group of ISIS as the biggest threat of the Western world at the moment (them). Thus, relating to their absolutistic notion of an *Islamic State* all nations which are attacked by radical islamist groups are part of this civilisation in the sense of Huntington. Therefore, the data is filtered from the HIIK-dataset and outputs all conflicts with a Islamist background and related nations. In the end, to visually abstract the process of determination and show the potential variability the civilisations are coded by different patterns of sketches.

673 Schroer, *Räume, Orte, Grenzen*, 2006, P.166.
674 *Future Enlargement of the EU*, Wikipedia.

Container

Newton

38

System Theory

Luhmann

73

Clash of Civilisations

Huntington

121

Furthermore, Huntington intercivilisational conflict defines itself in two forms: fault line conflicts and core state conflicts.[675] Next to the core state conflicts which happen on a global level, fault line conflicts occur at the direct borders of different civilisations. Thus, this borders and recent political activities are textually added by hand-written commentaries on each border and a short description of the conflict, for example at the border of Western world and Slavic Orthodox civilisation one could locate the Ukraine crises.

As stated in the beginning, each notion has obvious disadvantages but also certain justifications to remain, which supports the idea of a diversity and simultaneity of spaces instead of a progressive attempt of replacement and dominance.

+

In the case of the absolute notion, the advantages lie in its determination. Next to its limitations, this perception of space offers clear structures and therefore a certain safety in ever-changing global times. Thus, recent politics as well as individuals use an absolute notion to simplify, structure and explain their world view. However, this simplification rapidly creates preconceptions and non-reflective consciousness, as we can see with the rise of right-wing populism especially in Europe.

—

Consequently, Hard states that absolute notions like Huntington's theory are locked into *the old paradigm of world orders*.[676] Especially *9/11* disproved Huntington's *clash of civilisations* and leads to the need of new notions of space which can grasp the new relative structures of movement and communication in the 21st century.

Fi.104 Border concept.

[675] Huntington, *The Clash of Civilisations*, 1997, P.207f.

[676] Hardt et al., *Multitude*, 2004, P.52.
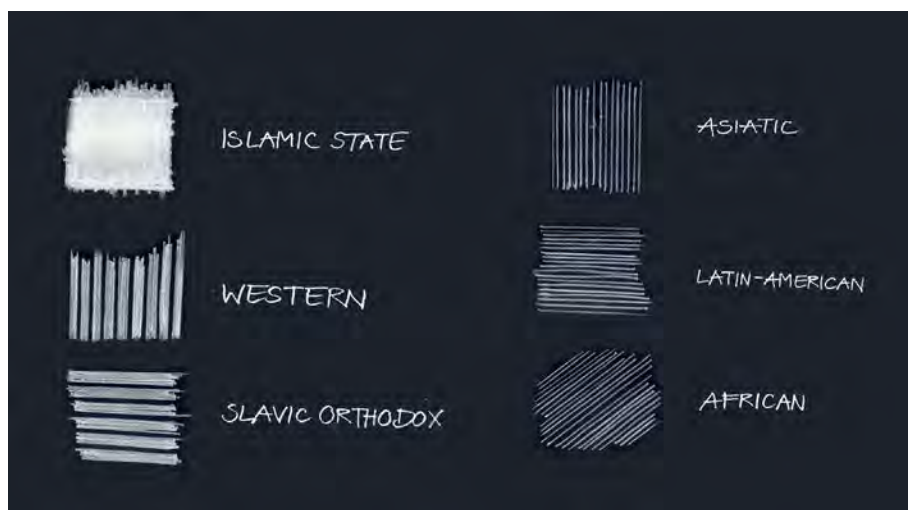
Fi.104 Legend
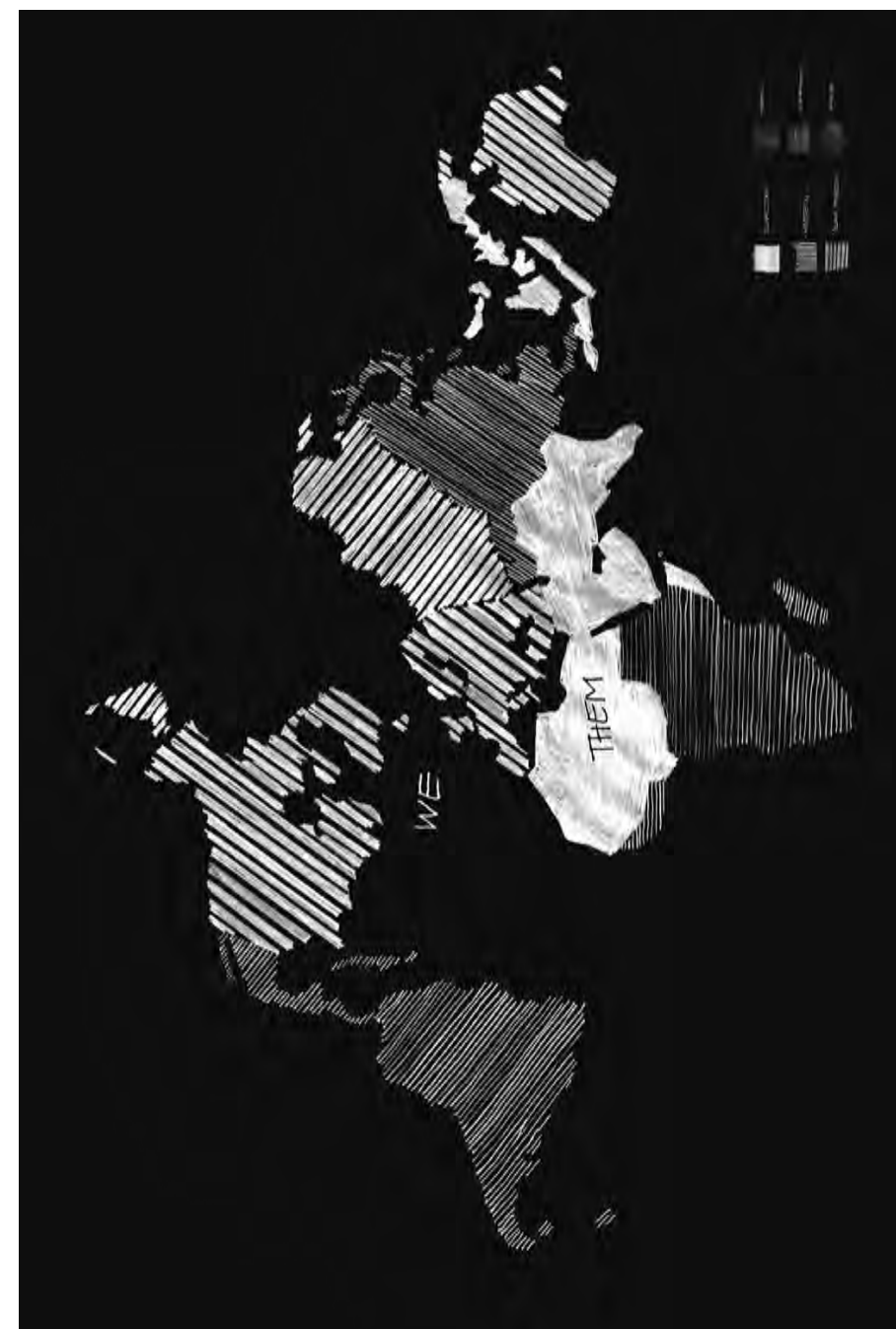
Fi.105 Absolute concept.

Relative

The relative model of space builds upon Einstein's explanation of the synchronism of space and matter in contrast to the absolute notion as independence of both. In short, space is existentially bound to the people inside itself. Thus, firstly the political borders of nations are disbanded and the grounding concept is to display the distribution of the global population. Therefore, a concentration of people in cities becomes visible which supports the idea of global cities as compensations for the farewell of political containers.

Since this approach of visualising relative space is not specifically related to political conflicts, the used data originates not from the *HIIK-dataset*, but from the largest public and mostly used gazetteer from *GeoNames*. Gazetteers are like dictionaries but of geographic place names. *GeoNames* provides therefore a definite list of cities with a population of at least 1000 inhabitants with the specific number of the citizens. The visualisation encodes this data in geocoded circles as compression of the smallest possible form, the dot, wich states a representation of the smallest entity of society, the human.[677] The radii are scaled to the absolute number of inhabitants. Additionally, the circles have a transparency gradient to visualise uncertainty regarding the real spatial size of the agglomeration.
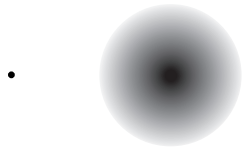
In the sense of the critical approach of this thesis, also this dataset is treated this way. Therefore, gazetteers have a certain ontological influence or power to define what will and won't be geocoded and represented in spatial understandings of place like maps.[678] Graham and Sabatta published a paper in the beginning of this year, which exactly deals with the *GeoNames* gazetteer and they illustrate how content in GeoNames is characterised by highly uneven spatial distributions.

Fi.106 Scaling Inhabitants.

[677]   Kandinsky, *Punkt und Linie zu Fläche*, 1926, P.21.
[678]   Graham et al., *Mapping Information Wealth and Poverty*, 2015.

Quantity

Einstein

42

Thirdspace

Soja

76

Seasteading in Cyberspace

Schivelbusch

128

They show that there are dense clusters of place names in some parts of the world and a relative absence of geographic content in others. Both state that these patterns are related to *not just the wealth and population-size of a country, but also its policies on internet access and open data.*[679] In the end, one can state a Eurocentric influence on the dataset. Consequently, the focus of the visualisation is also to call attention to this biased inequality, to make aware of a seeming neutrality and truth of visualised data.

This is done by applying two framing circles, whereby one circle frames the smallest possible area with 50% of the global population (China, India and some other parts of Asia) and the other frames the USA as most dominant host with more than 25% of all data points, although the USA is home to only 4.5% of the world population. So the USA is obviously very overrepresented, in contrast to, for example, India which hosts only 0.6% of the dataset, but represents over 17% of the world's population.

Once again the note that this dataset is the most used gazetteer and its biased world view is taken over by a not negligible amount of other projects. Thus, these two facing circles emphasise again on a critical perception and a conquering of unreflected assumptions, especially regarding abstracted and visualised data (again: visual literacy).

+

Altogether, the basic model of relativistic notions of spaces introduces the relative idea of space. Instead of an external framing, the matter itself defines the variable borders. Thus, spaces are not exclusively bound to nations anymore in a political sense, but develop transnational characteristics through the ideas of global cities. Following the conclusions of Schivelbusch, a relative notion of space is crucial to understand the recent forms of modern geopolitics.

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Nevertheless, the relative notion is still a rudimental part of the relativistic models, as it provides the basics for the two models of relational and topological. However, the relative notion of space does not include an idea of networks which is certainly necessary to encounter the modern geopolitical structures.

Placenames in GeoNames per 1000 inhabitants
(Percentiles)

>521.34 (>90)
38.75 - 521.34 (75 - 90)
5.98 - 38.75 (50 - 75)
1.50 - 5.98 (25 - 50)
0.42 - 1.50 (10 - 25)
<0.42 (>10)
No placenames in inhabited area
Placenames in uninhabited area

Data sources: GeoNames.org, SEDAC.ciesin.columbia.edu

Fi.108 Spatial distribution of placenames in the GeoNames gazetteer compared to the spatial distribution of the population

[679]   Graham et al., *Mapping Information Wealth and Poverty*, 2015.

Additionally, due to a lack of missing national borders an orientation is quite hard in this model of space. Although this is part of the experience of dismissing an acquired world view, the model is complemented by relational structures of international hubs and a textual description. This follows the idea of Soja's thirdspaces as relational spaces of transition. Hence, it creates an aesthetic that approaches the visuals of star constellations, which leads to an explorative element within the artefact.

EUROPEAN TRIANGLE

MOSCOW

LONDON

ISTANBUL

Fi.109 Constellations of biggest cities.
Fi.110 European constellation.

50% OF WORLD POPULATION

25% OF THE TOTAL DATASET

Fi.111 Relative concept.

Relational

The relative model of space is based on Negri and Hardt's notion of *empire and multitude*. This geopolitical theory introduced a way how new global non-national conflicts can be thought by an abstraction into networks. Instead of perceiving conflicts as matters of nation states, also non-governmental parties are included in a global confrontation.

The *HIIK-dataset* provides next to informations national actors of conflicts also details about involved non-governmental actors. Additionally, every actor is described with an information about its position in the conflict:

type 1 – direct actor
type 2 – supporter
type 3 – intervener
type 4 – affected

Regarding a visual abstraction this taxonomy is transformed into:

active: type 1– direct actor + type 4 – affected

passive: type 2 – supporter + type 3 – intervener

After a filtering process of conflicts which have no spatial distribution (even on a sub-national level) at all, the actors of each remaining conflict were geo-referenced. As the theory of Negri and Hardt follows a polycentric notion of networks (with holes), the relations are visually abstracted by the element of geometric lines as metaphors for a political movement, following Kandinsky:

> "*The geometric line is an invisible thing. It is the track made by the moving point; that is, its product. It is created by movement – specifically through the destruction of the intense self-contained repose of the point. Here, the leap out of the static into the dynamic occurs.*"
> — WASSILY KANDINSKY [680]

[680]   Kandinsky, *Punkt und Linie zu Fläche*, 1926, P.57.

Network

Leibniz

46

Space of Flows

Castells

79

Empire and Multitude

Hardt and Negri

131

Furthermore, to be able to differentiate the categories of political relations, the lines are additionally encoded:

active: solid – in the case of direct actors (type 1) the intensity of the conflict (qualitative category of the dataset) is coded to the thickness of the line.

There is no additional differentiation between direct and affected actors, because the focus of this visualisation is primarily the spatial distribution.

passive: dashed

Eventually, an abstract structure occurs, which visualises the centres of conflicts through an increased crossing of solid lines and thus a visually more dense areas. Additionally, the dashed lines show the international efforts and interests of other parties. On one hand the global dynamic of geopolitical becomes visible this way, on the other hand one could derive something like a *visual imperialism*.

However, explicitly the actor of the United Nations is indirectly involved in almost every global conflict as supporter or intervener, therefore the U.N. was dropped due to its redundancy. Nevertheless, the political hotspots around the borders of the Western World, especially in the Arab world, and the active indirect intervention of Western world parties into such conflicts becomes visible.

Again, additional hand-written comments explain the most important patterns and give some informations about the specific conflict, which conquers the abstract generative appearance through imperfect and subjective disruptions and invites to explore in detail.

+

Altogether, the relational perception of space in the sense of the theory of m*ultitide and empire* is very effective in showing the network-like relations of modern conflicts. On account of its visual simplicity, density patterns become easily recognisable.

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However, whereas the relative notion at least somehow shaped the forms of known continents, the relational perceptions remains completely abstract. Although additional explanatory comments are provided, this model is hard to relate to existing world views. Its subversive abstractness becomes its biggest disadvantage. Additionally, in terms of a spatial analyses a polycentric concept focuses only on the anchor points between a certain relation, due to its subject logic, and thus ignores the influential space in between and around the relation.
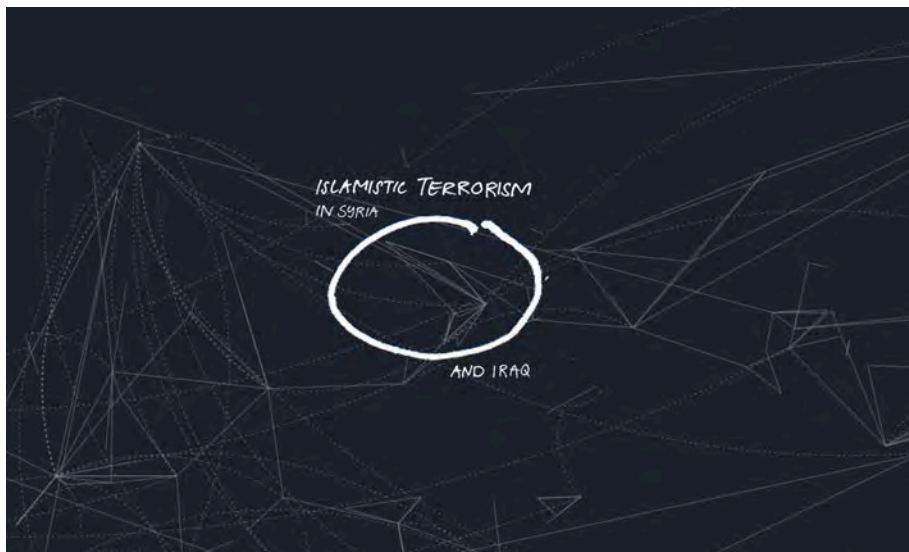
Fi.113 Detail comment.
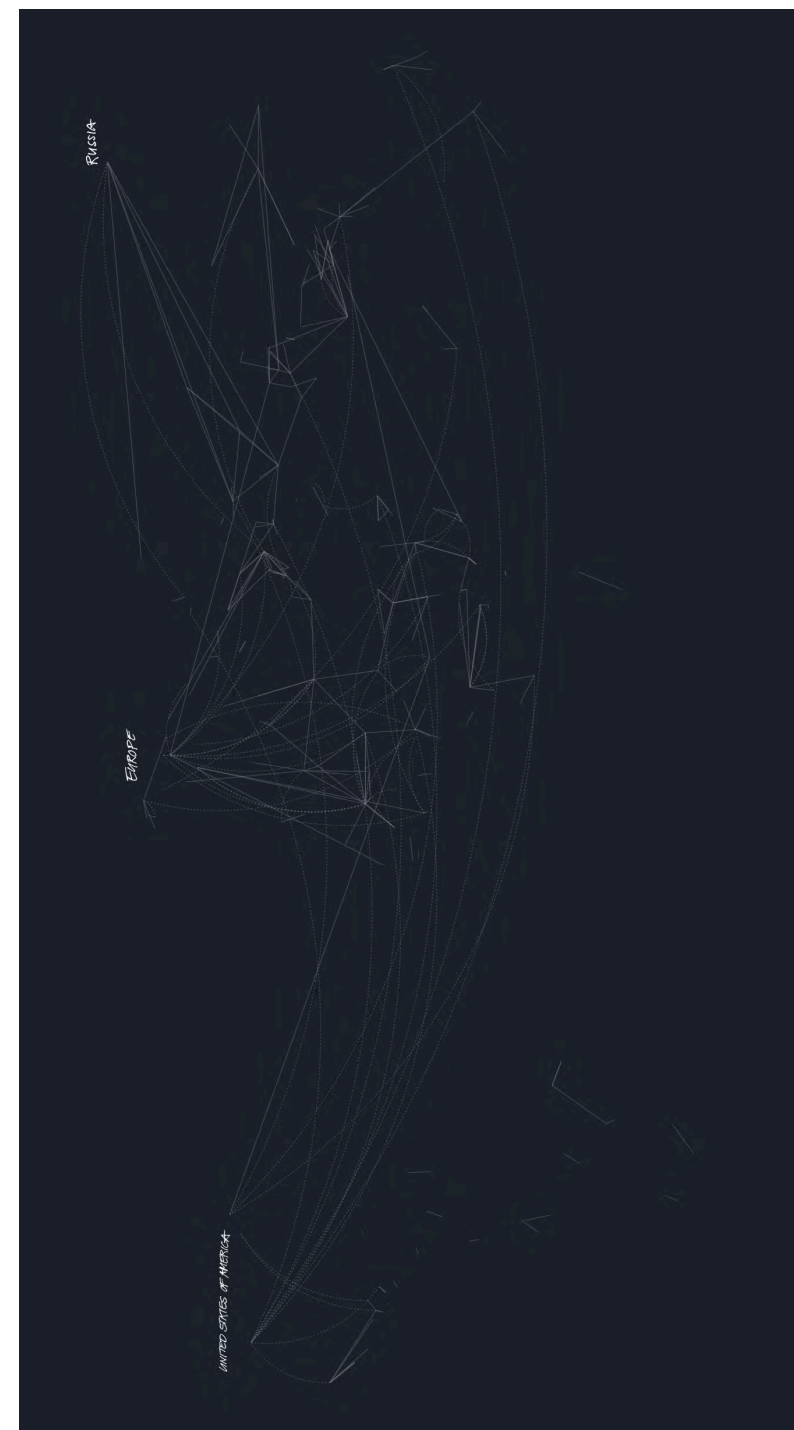
Fi.114 Relational Concept.

Topological

Finally, the topological perception of space finalises the visualisations as the last of the relativistic notions. In this model, Bruno Latour's idea of Gaia's geopolitics helps to perceive space as a network-formation of friends and enemies. As explained in the specific chapter, his notion of network is based on a actor-network theory. Instead of purely polycentric opposition of political actors, the space itself gets a political influence. Thus, Latour's model describes a notion of space, in which the political structures consist of human as well as non-human entities and hence act as an affecting spatial field.

Consequently, the basic idea is that not only the direct relation of actors has an impact, but also the surrounding space or rather the field as an active actor. If one still tries to connect the spatial anchor points, then the result will be *topical relations* which could be visualised as two crossing lines that *run across the field* instead of a straight connection, a topocentric network. Following Pierre Bordieu examinations, the connecting is the pervading.

In the case of the political visualisation, this predicate logic emphasises on the interspace between political actors. Thus, the same dataset as with the relational model is used, but instead of lines forms of circles will be used. This abstraction is inspired by the physical phenomena of oscillation. For example, wave motions have a specific origin but affect the surrounding space equally. Therefore, the visual appearance of concentric circles was deduced.

Consequently, the centres of all conflicts will be the centres of the circles. The amount of concentric circles is determined by the number of involved actors and the radius of each circle is encoded by the spatial distribution of the specific actor from the centre of conflict.

Field

Nishida

50

Social Spaces

Bourdieu

82

Facing Gaia

Latour

136

+

**Radii equal
distance of the
specific actor
from centre
of conflict**

**Amount of actors
equals amount of Circles**
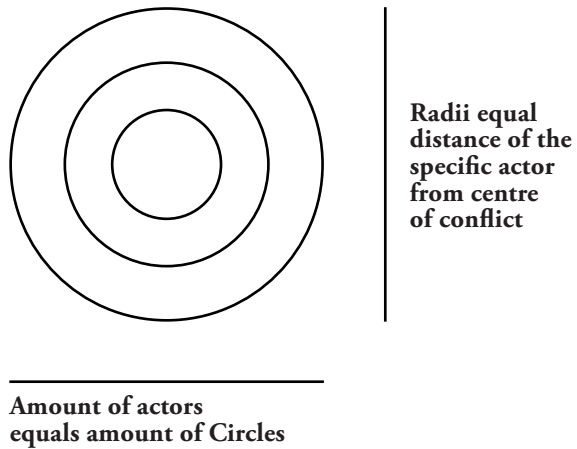
The advantage of the topological model is that it not ignores the space in between and around the relation. Space eventually becomes an equivalent category in this notion. Only this model perceives the real space as its own action quantity. As Bourdieu required, the space is in focus of research.

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Additionally, the relations of the various conflicts are abstracted by additional dashed forms of circles, whereby the radius is determined by the geographical distance.

The conceptual idea is that mathematical geometrical forms always imply a certain accuracy and thus a deterministic truth. Thus, the hand-drawn counter-approach and the nearly overuse of circular forms leads to visual and critical statement. Eventually, density patterns through overlapping effects are visible and lead again to crucial areas of conflicts. Again, additional hand-written comments complement the visualisation and help to connect the abstract patterns to real conflicts.

As the relational mode, the topological notions represents a very abstract understanding of space. Furthermore, it alienates itself from a Western subject logic. The real spatial context increasingly becomes the focus which demands a major rethink, especially regarding non-Japanese rooted discourses.

Fɪ.116 Circle legend.
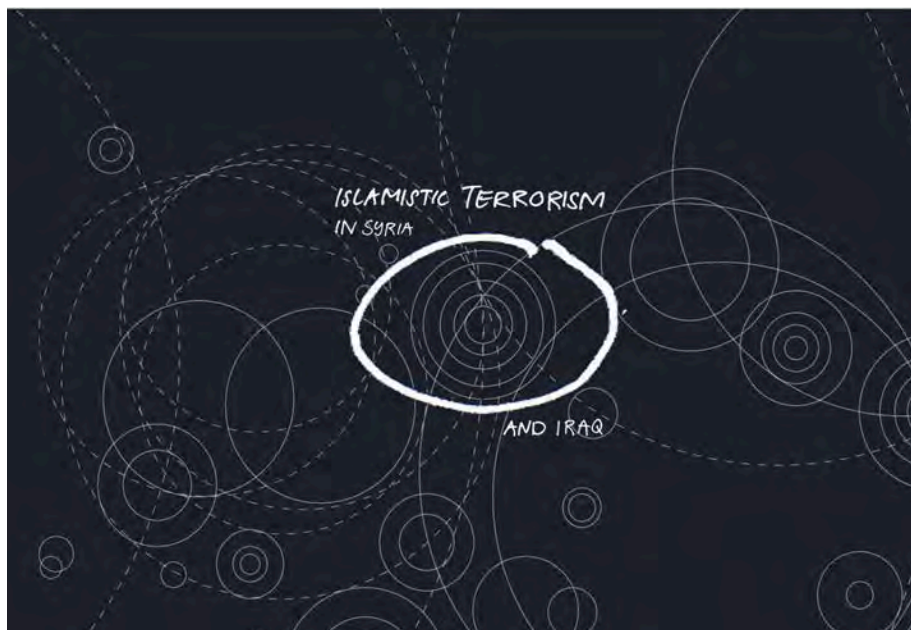
Fi.117 Detail comment.
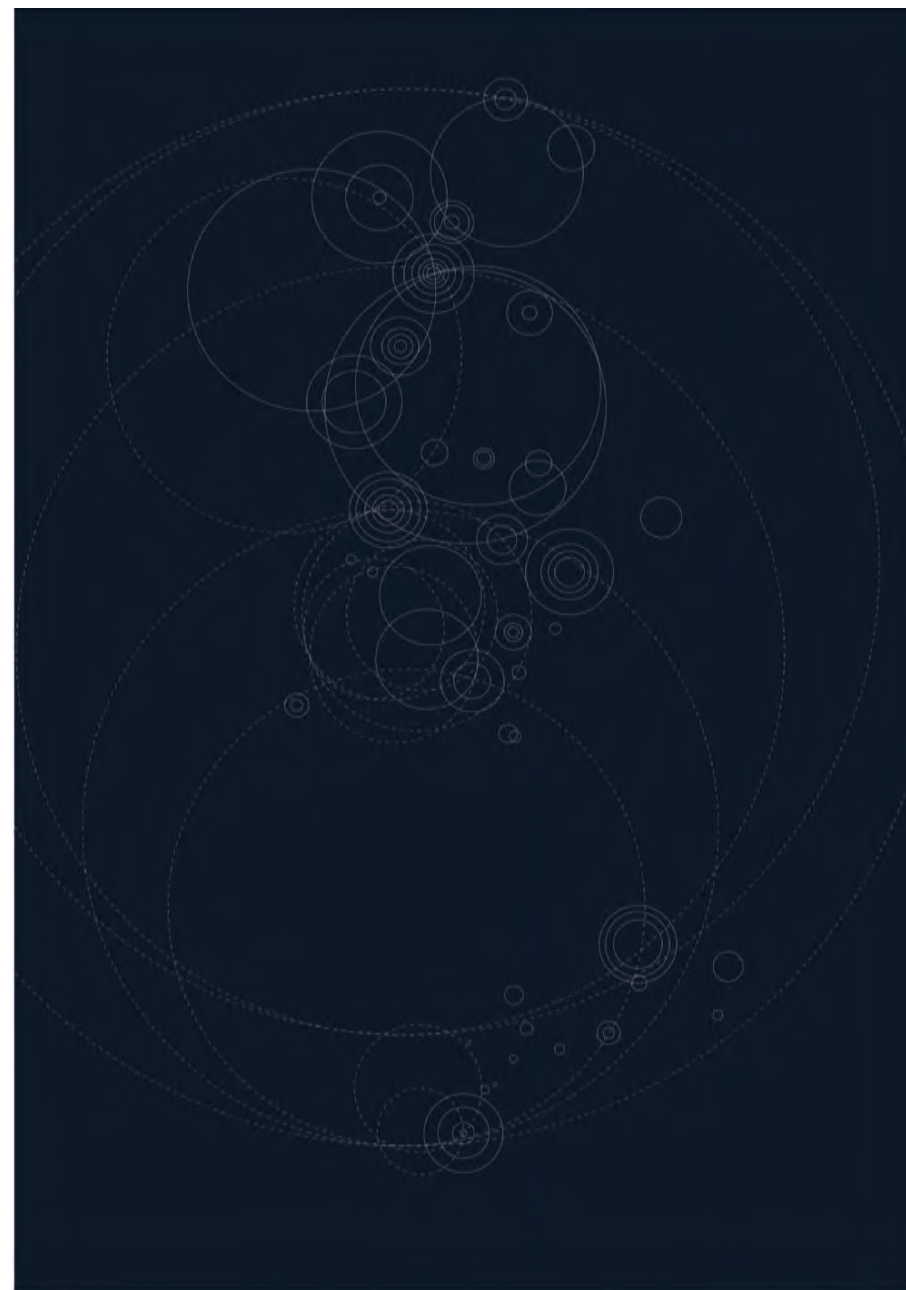
Fi.118 Topological concept (missing data points).

Reflection

After the presentation of the four concepts of visualising the worked out notions of space, the following chapter is concerned with an evaluation of these. Since the approach of this thesis is an interdisciplinary conceptual model, this access should be valued by experts from this specific disciplines.

In particular, the focus of the rating process was not so much about the visual concepts in detail, but rather on the problem of the negotiation of two priorities. One hand the attempt to visualise a theoretical framework which then meets the very practical method of abstracting real data.

Next to the expert interviews, an own statement is conducted to finish this chapter.

Interviews

The interviews were conducted in a written form, whereby every participant got the same questions. The interview partners were chosen by their professional background, so on one hand Prof. Dr. Stephan Günzel (BTK Berlin) focusses on the theoretical/philosophical side, Prof. Dr. Jan Distelmeyer (University and University of Applied Sciences Potsdam) appears in a bridging role coming from a background in media studies, and finally PhD candidate Sebastian Meier (University of Applied Sciences Potsdam) as visual researcher with focus on cartographical and geographical practices. However, every contributor will introduce himself and his focus regarding space separately.

*All interviews were answered in German
and completely translated by the author.*

Stephan Günzel

What significance does space have in your professional environment?

Space is the main focus of my research work, both in the theoretical-philosophical domain and the concrete media analysis of computer games. In practice, as a professor I am concerned with the supervision and education of designers. The main focus here is the medial space design (especially installations and information graphics) as well as game design (i.e. the design of digital spaces).

This thesis follows the method of a visual abstraction of a theoretical discourse regarding space. Is there an actual necessity within humanities to visualise or visually edit the mostly text-based discussions?

Absolutely! One reason for this is, that there occurred a general conversion to the image and finally also the mostly text-based humanities (re)discovered the forms of argumentation of the graphic or the diagram. On the other hand, it emerged a new generation of students, but also teachers - in general: the digital natives - whose thinking is observably visually shaped (and with whose a mere textual communication is thus not longer possible anymore).

Imagine a concrete application of the four visual concepts in your academic context of education. Which advantages and disadvantages would result?

The advantage would be the intuitive access to the issue, but also a longer attentiveness in the analysis of the visualisations. Disadvantages definitely suit in the necessary simplification of information and the seeming lesser interpretive accomplishment. (Following McLuhan, visualisations are *hot*, texts in contrast *cold*.)

Imagine a concrete application of the four visual concepts in a public context of exhibition. Which advantages and disadvantages would result?

Disadvantages: The recipients maybe are satisfied more quickly and thus ask no callbacks. Furthermore, there is a risk (especially with well made graphics) that the observation is just an *aesthetic* one.

Advantages: People got attracted to the topic, which normally would not get their attention.

This thesis is defined by a problems of two subjects. One one hand, it tries to visually abstract a theoretical discourse. On the other hand, this happens by a concrete processing of specific political data. Can this creative and also very perspective contribution be an influencing one within a spatial discourse?

Yes, certainly. Especially the spatial discourse – if not polemic – was and is partly debated tendentiously. The academic backgrounds (historians vs. sociologists vs. philosophers vs. cultural scientist) play an important role. "Perspective" contributions could work in the sense of a dosed antidote; in this case: integration of different and (on the first glance) also inconsistent notions of space and the consideration of data related to both materiality and topology of space.

Finally, an outlook on the future: Which importance will the discourse about the space henceforth have?

As it was proven in the past, space is the transdisciplinary topic per se, thus the discourse will remain for the foreseeable future.

Jan Distelmeyer

What significance does space have in your professional environment?

Within my recent research at least a doubled: First, with regard to my work of (D)3D-dispositif and its spatial policy that convey insights and world views far beyond the limitations of the cinema and the (D)-3D-movie. On the other hand, my occupation with interfaces and the aesthetic of disposition of the computer, in which programmed interactive spaces play a central role.

This thesis follows the method of a visual abstraction of a theoretical discourse regarding space. Is there an actual necessity within humanities to visualise or visually edit the mostly text-based discussions?

Absolutely. A theoretical foundation of media studies, that we in Potsdam at the University and the University of Applied Sciences represent, is precisely that approach of reflecting media with media. Media studies can just benefit from the examination of the practice of theory and the theory of practice. It is important and necessary to go beyond a traditional textual working, which strangely is rarely perceived as practice, and to question its conditions.

Imagine a concrete application of the four visual concepts in your academic context of education. Which advantages and disadvantages would result?

Visualisation becomes problematic, if it's only used as mere act of translation which wants none of it - if it remains the gesture of persuasion of the explicit. A visualisation that only supposedly puts the content in perspective and illustrates, without looking at the source of intention, the modus of conception, would be less interesting for my research field. A in this sense self-conscious visualisation (and that is how I understand your [the author of this thesis] project) is therefore more promising. My concern within a context of education would be the indicating idea of visualisation and the examination of its specific subjects, objects and themes.

Imagine a concrete application of the four visual concepts in a public context of exhibition. Which advantages and disadvantages would result?

That is very much related to the context. In the previously mentioned sense of analysis with and through media, it seems to me that similar aspects, as in the previously outlined academic context, are crucial.

This thesis is defined by a problems of two subjects. One one hand, it tries to visually abstract a theoretical discourse. On the other hand, this happens by a concrete processing of specific political data. Can this creative and also very perspective contribution be an influencing one within a spatial discourse?

Hence, it is about to prove absolute, relational, relative and topological strategies of visualisation, the project is inevitably related to theoretical questions of space and its hermeneutic, rhetoric or also mythic functions. The work therefore positions itself directly by making the problem of mediation, that you claimed yourself, subject of the discussion and thus should be understood and negotiated in this context.

Finally, an outlook on the future: Which importance will the discourse about the space henceforth have?

The urgent ecological as well as geopolitical developments with numerous conflicts and refugee movements places the category of space with power again in the forefront. Also within recent research areas, spatial questions will also become more and more important. Three-dimensional representations and autostereoscopic displays will shape not only perceptions but also the accesses of the real space in the most different fields (including film, computer games, medicine, military). The development of *ubiquitous computing* and the embedding/networking of computer technology in the most different aspects of life and the things around us will raise therefore other but not any less urgent questions of spatiality. They all connect in their relation to promises and practices of control and regulation.

Sebastian Meier

What significance does space have in your professional environment?

As semi-geographer/cartographer and visualiser, I use, in contrast to many humanities, a very concrete model of space (latitude / longitude). Because with out such a, in our discipline accepted model, work would not be possible. This concrete model of space is used for description and localisation. Furthermore, also diverse other and not so concrete models are used (perception of space, mental maps, etc.). I'm mainly interested in the interrelationships between the technically describable space (data) and the real space within my work.

This thesis follows the method of a visual abstraction of a theoretical discourse regarding space. Is there an actual necessity within humanities to visualise or visually edit the mostly text-based discussions?

Yes. Although, this includes that the target groups should be define clearly. I would spontaneously select three groups:

1. lay people - many humanistic theories are very abstract and complex, this makes it hard to comprehend the lines of thought. Thus, humanities are adjudged to be not accessible (from a perspective of lay people). In a world in which daily life and research is strongly connected (public research funds, public discourses, etc.) it is also advisable to bring that knowledge nearer to the general public. Visualisation is one possible way.

2. other disciplines: Based on the idea that visualisations wisely reduce complex structure and make them explainable, such a process can also be beneficial to the exchange and cooperation of other researchers and disciplines.

3. visualisations as working tool for the researcher: Making ones own theories visible and maybe even explorable creates a new perspective on the own work which could possibly generate new insights, approaches and ideas.

Imagine a concrete application of the four visual concepts in your academic/pbulic context of education. Which advantages and disadvantages would result?

I believe that based on the answers to 1. visualisations of course could help within a educational context to better understand complex issues. I think of two examples regarding possible disadvantages:

1. Every visualisation is created by a specific author. This means that there is another interpreter interconnected in the chain of mediation, which means an additional bias. Although, the problem also exists in the case of a textual mediation.

2. A visualisation always constitutes a certain reduction or generalisation. Since it is not possible to visualise *everything*, there is always a loss of information. With these disadvantages one has to consider the target group, because for example in the case of lay people the advantage of communication outweighs the possible errors within the visualisation.

This thesis is defined by a problems of two subjects. One one hand, it tries to visually abstract a theoretical discourse. On the other hand, this happens by a concrete processing of specific political data. Can this creative and also very perspective contribution be an influencing one within a spatial discourse?

The used techniques of visualisation are (as far as I understood, on purpose) quite diffuse, which corresponds to the underlying theories. At the same time, decoding becomes therefore very hard. From a classical HCI-visualisation perspective I face mapped visualisations quite critical. However, the visualisations achieve that the user are confronted with new questions, therefore they can be perceived as initiator of discussions. Consequently, I think they are an exciting tool. If one would display everything interactive and allow the user to ask themselves own questions, especially to explore relations and details, I could well imagine that it would lead to new discussions and discoveries. Particularly, it would be fascinating to see the relations between the different models of space and what happens if they overlap. I think the idea and concept of visualising complex and theoretical constructs is definitely meaningful for a discourse.

Finally, an outlook on the future: Which importance will the discourse about the space henceforth have?

I believe that the discourse about space, especially from a political, social and geographical perspective, will play an important role and that humanities with their own approach can offer a useful assistance. The requirement for this interdisciplinary exchange certainly constitutes the connectivity, that I mentioned previously. Because I'm neither a friend of the concept of the national state nor the concluding borders, I hope that relativistic notions of space have a greater emphasis in the future.

Own

Altogether, the interviews indicated that the general approach of this thesis is a promising one. Both theorists Jan Distelmeyer as well as Stephan Günzel emphasised on the potential strength of liberating textual-bound humanistic theories through an approach of visualisation. Especially Stephan Günzel states that a consequential perspective visualisation could work as *antidote* to the anyway biased discourses. Furthermore, Jan Distelmeyer points out that translation-driven visualisations that purely focus on data and aesthetics miss their chances. However, in the case of this thesis the visualisations are created in a self-critical way to consciously refer to also its weaknesses. *Reflecting media with media* is therefore the leading concept.

Eventually, Sebastian Meier states some critical arguments from a practical design-perspective. The visualised theories remain quite abstract and are thus hard to understand for lay people. Since it's not the ultimative aim of this thesis to make the presented theories easily digestible and comprehendible for everyone, but to gainfully extend a discourse through a visual layer by applying critical approaches to expose and make aware of certain presupposition and conditions, this thesis follows rather the idea of problem finding instead of a definite solving. The combination of critical theory with design as *critical design*, especially proclaimed by Anthony Dunne and Fiona Raby, will therefore be a topic in the outlook of this thesis. However, critical approaches should be at least effective as possible in raising questions and make an observer think. Therefore, Sebastian's suggestions of making the visualisations more approachable through interactions or other possibilities of an extended perception are discussed more in the section of further work in the outro.

Altogether, the approach of this thesis is a connection and reflection of practice and theory. It is not about replacing one by another. Thus, it was important that the visualisations do not overlap a theoretical discourse through a techno-positivistic method which leads to an only aesthetic appearance. Therefore, artefacts were created which are not isolated from or on top of the discourse, but are integrated through a self-conscious approach of a certain symbolic appearance (map aesthetic, star constellations, …), multiple interventions (sketches, additional notes, …) and a direct relation to the related theories trough a combination with actual text (icono-texts).

Eventually, the critical attitude runs through the whole thesis from the theoretical grounding to the actual mapping methods. Nevertheless, this approach was necessary to ensure a strong concept and thus to consequently conquer predetermined assumptions. Of course the perspective of this thesis itself is naturally based on various given theories. In this lies the reason for comprehensive examination of the theory, which leads to a transparent process that makes the approach of this thesis visible and comprehendible at any time of the process. In the end, one can state that the perception of space is always related to the specific age. Recent times require a perception of diversity and simultaneity, thus a postmodern notion of space.

Outro

The last chapter will finalise this thesis by giving an impression on the ideas for further work and in particular the eventual practical realisation of the visualisation concepts. Furthermore, an outlook will gather insights and discuss consisting difficulties.

Further Work

As described in the chapter about the visualisations, only the visualisation concepts and their deduction from the specific theories were constituted. Therefore, the complete practical realisation is yet an open field, but at the same time it offers a big potential. The eventual practical examination could substantially improve important aspects of this thesis.

On one hand the visualisations are not yet interactive, but a possibility for interaction could lead to a greater engagement in terms of better understanding of the abstract visuals. Furthermore, a certain interactivity could improve the impression of perspectivity and a simultaneity of perception of spaces.

This leads also to the next point of presentation. At the moment the notions are separately thought from each other. Regarding the theoretical documentation this is reasoned by a better comparability. However, a practical realisation could also offer to overlap the different models of perceptions of spaces. As stated the recent geopolitical events can be analysed as a clash of different notions of spaces. Thus, a possible interaction could raise awareness on this categories.

Eventually, the visualisations were planned as a flat appearance due to the symbolism of traditional cartographies. Nevertheless, within a context of exhibition this visualisations could be realised as installations in the real space, which obviously supports the topic of spatiality versus digitality. Furthermore, a conversion to the real space could conquer the abstractness and thus lead to immersive understanding of different spatial concepts. Altogether, with the potential realisation in a real spatial context, a concrete practical application seems imaginable. Thus, these visualisations could also be used in different educational contexts from museums to university lessons.

Next to the practical execution, also the theoretical examination could be more concrete. The previous documentation states a quite rough and pragmatic pulling down that is oriented towards the quadripartite structure of notions of spaces. Almost every aspect, from the philosophical basics to the eventual meaning of a visualisation process regarding critical theories, could be gainfully expanded. However, this documentation tried to satisfy the approximate requirement for a conceptual design thesis.

Fi.119 Jaque, *Fray Foam Home*, 2010.

Outlook

Theoretical/Political

Since this thesis follows a quite pragmatic approach of combining theories and ideas applied to the specific taxonomy, it produces on one hand a traceable process and is therefore a desired property, but is also means that some interesting discussions could only be briefly mentioned.

Although it is not primarily the focus of this thesis, the recent discourse on space and thus also any attempts to liberate the theoretical problem to a public like the created visualisations can be related to concrete geopolitical events and in the end also the actual human perception itself. Stephan Günzel describes therefore that the humans are spatial beings per se, and that a conscious perception of space is necessary to learn what and who humans actually are.

In the sense of an activistic approach, social theories about space could be relieved from an academic blackout by particularly these practical examinations of analysing and criticising postmodern power structures. This activism that can be experienced today suffers from a certain unfocused aggression. Demonstrations against surveillance programs and other intangible actors of a global political network remain ineffective due to obvious problems of a spatial understanding of power. Despite all relational structures of power, the eventual impacts always affect the real space. Already Baudrillard stated fundamentalism and terrorism as return of the *real*.[681]

Consequently, a combination of activism and an applied theoretical discourse through the usage of artistic interventions like data visualisations could help to grasp the essential dangers and approach the results of global capitalism, imperialism and neo-liberalism. Additionally, this combination of theory and activism could also revive the social enthusiasm regarding the former. Possibly, this visual and theoretically charged artefacts could help to increase the importance of theory like it has been especially in the German 1960s, when theories of Frankfurt School became something like a pop-culture, following Philipp Felsch.[682]

However, one can state a certain disinterest in living in a globalised postmodern world. People naturally search for clear orientation without complexity and possibilities. An exemplary indication therefore is the increasing popularity of crime stories like the everlasting German series *Tatort*. As Thomas Hauschild puts it, such entertainment products offers the right simplifications: there is only one place, one corpse, one murderer, and the somehow shifty but also relatable commissioner who always succeeds at the end of the program time.[683]

In the end, one can at least state that space has indeed become a dominant analytical category regarding various social and cultural processes. This thesis showed an example of bringing together of real and imagined spaces as a practice to combine visual as well as theoretical approaches. Additionally, also further indications of spatial sciences like gendering spaces allow a first glance at developing research fields. Finally, space has never been gone, instead recent times demand an increasing spatial consciousness of diversity and simultaneousness.

[681]   Weibel, *absolute Jean Baudrillard*, 2015, P.1.

[682]   Felsch, *Der lange Sommer der Theorie – Gespräch*, 15.3.2015, Radio Bremen.
[683]   Hauschild, *Ethnologe: Krimiflut ist Reaktion auf Globalisierung*, 2013, Focus.

Artistic

Next to the political dimension, another crucial emphasis is the relation of theory and the visual artefact, the image, per se. Therefore, a deeper integration of the research into disciplines of image theory or visual culture could be promising. This thesis tried to show at least approaches, how to think an image as complex artefact.

Thus, the further questions could be, how far an image has to be a reduction of complexity. Together with the stated development of a visual literacy, an idea of images could occur, which is able to transfer the complexity and even expand it on a large scale. In the sense of Flusser, images as the future form of communication and thinking, instead of texts that are naturally limited by their linearity. Images, in contrast, are non-linear and hence rather appropriate to be applied to reflective processes of present and future. Altogether, the creation of a new notion of image and imagery seems to be an interesting field to combine theoretical as well as practical processes.

A recent practice for this approach of a visual-theoretical analysis of complexity offers contemporary art. Alicja Kwade, for example, perceives reality as pure construction in a traditional postmodern way. Additionally, Philipp Felsch states that academic theoretical discourses can be increasingly found in artistic practices, so that contemporary art seems to be not least a theoretical task.[681] Therefore, Iannis Xenakis confirms:

> "*In reality, an artist is a theoretician, a manipulator and creator of forms in movement. Seen from the point of view of art, all our knowledge and our actions are but aesthetic expressions of forms and their transformations.*"
> — IANNIS XENAKIS[682]

Consequently, Roger Behrens talks about a new notion of this kind of artistic practice, that he calls *postconceptual art:*

> "*Contemporary art, in the critical sense in which the concept has been constructed in this book, is a geo-politically reflexive art of the historical present of a postconceptual kind.*"
> — PETER OSBORNE[683]

681   Nagorny, *Talk with Philipp Felsch*, 2015.
682   Xenakis, *Diatope*, 1978.
683   Osborne, *Anywhere or Not at All*, 2013, P.176.

Altogether, within this times of postmodernity the combination of theory and artistic practices is not only suitable, but already frequently executed. Thus, artistic expressions seems to be a fitting tool to address the bigger (spatial) discourses. Furthermore, Siegfried Zielinski states: „*Future of art is bringing analogue and digital together.*" Consequently, this postdigital art also fits to comprehend how to handle new digital technologies in a postdigital age. The stated critical mindset ist necessary to detect ruptures and power structures, that are hidden behind the seeming neutral infrastructures. The thesis tried to follow this agenda and further work will emphasise on this approach.

Fi.120 Kwade, A., *Parallelwelt* (schwarz/rot), 2009.
684   Zielinksi, *The Lounge – Interview Siegrfried Zielinski,* 2010.

Design

An approach beyond functionalism and reductionism also affects the discipline of design as research field between art and science. Nevertheless, design in general has a long history of implementing theoretical discourses, most notably maybe the Bauhaus movement or Italien Radical Design of the 1970s. Consequently, one of the most recent outcomes of, also in this thesis the stated, critical theories is the approach of *critical design*:

> "*The term Critical Design was first introduced by Tony Dunne & Fiona Raby at the beginning of the millennium, to outline a new area in design focused on the potential impact and consequences of new technologies and policies, and the global social and environmental trends inside which they are embedded. This new area of inquiry has brought together various disciplines and mediums of expression, enabling designers to move from solving problems to framing new ones, while asking new questions in the process.*"
> — MIT MEDIA LAB [685]

Thus, this discussed notion describes an approach of design that focuses on new interests and intentions. Design not seen in a positivist way as the ultimative answer, but rather as a tool to ask the right questions. Altogether, the thesis was especially affected by this approach of design and therefore does not want to provide a specific answer to the spatial complexitiy, but tries to visualise a mostly textual and therefore hardly visible discourse.

In times of big data it is easy to answer (visualise) detailed issues, however this mess of data blurs the bigger fundamental questions of the modern society, as spatiality is one of these. Design all alone cannot offer the right solutions, but in combination with theoretical thought structures it could lead to the necessary critical perceptions within our technological society.

Real Art | Art | Artistic | Design | Scientific | Science | Real Science

Affirmative	**Critical**
Problem solving	Problem finding
Design as process	Design as medien
Provides answers	Asks questions
In service of shareholders	In service of society
For how the world is	For how the world could be
Science fiction	Social fiction
Futures	Alternative worlds
Fictional Functions	Functional fictions
Change the world to suit us	Change us to suit the world
Narratives of production	Narratives of consumption
Anti-Art	Applied Art
Research for design	Research through design
Applications	Implications
Design for Production	Design for debate
Fun	Satire
Concept Design	Conceptual design
Consumer	Citizen
Makes us buy	Makes us think
Innovation	Provocation
Ergonomics	Rhetoric
User-friendliness	Ethics

Fi.121 Art – Design – Science.
[685]   MIT Media Lab, *Knotty Objects*, 2015.

Fi.122 *Critical/Affirmative*, Dunne and Raby, 2015.
[686]   passim.

Credits

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Declaration of Academic Integrity

I hereby confirm that the presented thesis on visual reconceptualisation of notions of space is solely my own work and that if any text passages from books, papers, the web or other sources have been copied or in any other way used, all references – including those found in electronic media – have been acknowledged and fully cited.

Paul Heinicker

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Absolute theory process.

Fi.104
Border concept.

Fi.105
Absolute concept.

Fi.106
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Fi.107
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Fi.108
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Fi.110
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Fi.111
Relative concept.

Fi.112
Relational theory process.

Fi.113
Detail comment.

Fi.114
Relational concept.

Fi.115
Topological theory process.

Fi.116
Circle legend.

Fi.117
Detail comment.

Fi.118
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