The World as Allegory in Cartography
Symbolic and Allegorical Reference Systems in the Aesthetics of Digital Cartography

Philipp Tschochohei
Ludwig Maximilian University Munich - LMU Faculty 10 Chair 1 Prof. Roberts - Guest Lecturer / Independent Researcher

Abstract   This philosophical essay explores the idea of the world as allegory in cartography, drawing on the works of Hannah Arendt, Walter Benjamin, and Nelson Goodman. It argues existentially that maps are not only representations of measurable objects, but also of aesthetic experiences. It analyses epistemologically how maps use symbols and allegories as representations to determine meanings or reveal truths. And finally, it shows how digital maps today, like works of art, reflect and shape world views and how, as a medium, they are interwoven with the perception, cognition and (inter)action.

Keywords   Walter Benjamin. Nelson Goodman. Allegory. Symbol. Epistemology. Digital.

Summary   1 Introduction. – 2 The Presence of the World. – 3 The Appearance and the Essential. – 4 Representation as a System. – 5 Cognition and Truth. – 6 Reproduction and Distraction. – 7 Cartography and the Digital World.

> A noticeable decrease in common sense in any given
> community and a noticeable increase in superstition
> and gullibility are therefore almost infallible signs
> of alienation from the world.
>
> (Arendt 1998, 209)

1 Introduction

How do we map the world? From a philosophical point of view, this
question initially points to the problem that by 'world' we do not mean
the earth. The world is not an object. As an idea, it points to what de-
termines us as human beings. This distinction is further clarified us-
ing Hannah Arendt's thoughts on the conditionality of human beings.

Subsequently, Walter Benjamin and his theory of art and tech-
nology are used to scrutinise the task of mapping in the digital age.
In particular, the representation of something that is not given as a
measurable object, but is only brought into being through our actions,
brings with it difficulties that point to the field of art. Further, Nel-
son Goodman's theory of art and symbols, in contrast to Benjamin,
enables a clear analysis of what it means, when the question of how
the world is, shifts to wanting to show each other what the world is
like. Showing each other the world is the basis of important pillars
of human existence such as community, a sense of reality and orien-
tation in action and planning.

However, a more detailed analysis of these areas of common sense
and their connection to the aesthetics of cartography would go be-
yond the scope of this text. Therefore, the focus below is on the sym-
bolic and allegorical reference systems which, with a view to Benja-
min and Goodman, form the prerequisite for showing each other the
world by means of cartography.

2 The Presence of the World

The confusion between the earth and the world becomes particularly
clear in cartography. The Earth can be mapped using satellites and
sonar technology. The topography of its surface, including the deep
sea, will be fully mapped in the next few years, making it possible
to visualise the globe as a planet in its entirety as a surface struc-
ture. The borders of countries on a world map, on the other hand, are
not the result of measurements. Their changes are not the outcome
of natural processes but arise from wars and exist in treaties. Nei-
ther satellites nor sonar help to determine them and, contrary to the
question of the completeness and timeliness of the measured data,
the question of the validity of the country borders of a world map can
arise spontaneously. In this way, the world maps with their nations

and continents are a first indication that the idea of the world encompasses more than just a planet.

This aspect becomes clearer when we consider the geopolitical significance of the way world maps are depicted. Which country is at the centre and which at the edge, who is at the top and who is at the bottom – such questions point to the possibility of geopolitical framing in the representation of the world as a map of countries.[1] We are not confronted with different worlds, but with the same world viewed from different perspectives. In this sense, the concept of the world does not describe an objective thing, but rather areas of validity and ways of looking at things.

This tension between the earth and the world also preoccupied the thinker Hannah Arendt in her 1958 written book *The Human Condition*. For her, the "human condition as a whole" goes beyond the conditions of human life on earth. She writes: "Whatever enters the human world of its own accord or is drawn into it by human effort becomes part of the human condition. The impact of the world's reality upon human existence is felt and received as a conditioning force" (Arendt 1998, 9). Anyone who wants to make a map of the world is, in Arendt's sense, faced with the task of using aesthetic and technical means to depict the "conditioning force" for humans, the feeling that we describe as 'world'. Accordingly, the world is regarded as a subjective experience that exists under collective conditions. Arendt writes: "To live together in the world means essentially that a world of things is between those who have it in common, as a table is located between those who sit around it; the world, like every in-between, relates and separates men at the same time" (52). The world as the place where people live together thus reveals itself as a medial phenomenon of mutual networking.[2] In this sense, the world grows with the increasing digital networking of people.

The earth as an object of the imagination, on the other hand, is shrinking, as Arendt emphasises. In the satellite-based mapping of the globe in the twentieth-century, she sees the overcoming of "the infinite horizons, which were temptingly and forbiddingly open to all previous ages" (250). This shows that "[m]en now live in an earth-wide continuous whole where even the notion of distance, still inherent in the most perfectly unbroken contiguity of parts, has yielded before the onslaught of speed" (250). In this sense, the world no longer

---

1 In analogy to the relationship between world view and national borders, comprehensive research on the relationship between the world and urban planning is based on Walter Benjamin, in particular on his unfinished work *Passages*. From the current debate, the following essay draws an interesting link between the city, cartography and world view cf. Akkerman 2016.

2 A critical examination of the social dimension of Arendt's concept of 'world' can be found in Gómez 2016.

grows in terms of its earthly spatial extent, since the earth has been completely discovered and is accessible in its entirety through the technological means of mobility. Even the open and inaccessible horizons of the universe, which are mapped with telescopes and thus become concrete, are increasingly losing their claim to infinity in the modern view of the world. However, this 'shrinking' of the earthly conception of the world from a seemingly infinite horizon to a concrete and cartographically mapped planet does not diminish the extent to which the world is growing through the increasing cultural networking of people.

As a collective and medial phenomenon, the world is given its space not only by analogy with the globe and the universe, but genuinely through the public space of action and communication. The presence of things and ideas in the world is based between experience and information. People leave their next generation not only a globe and its nature, but also a cultural stock of objects, beliefs, and knowledge. This cultural heritage connects and unites people through the production and use of things, but also through shared beliefs and common knowledge. For Arendt, this means that "[i]f the world is to contain a public space, it cannot be erected for one generation and planned for the living only; it must transcend the lifespan of mortal men" (Arendt 1998, 55). This permanence of the public space gives rise to the so-called 'man-made world' of human artifice. Arendt emphasises:

> The man-made world of things, the human artifice erected by homo faber, becomes a home for mortal men, whose stability will endure and outlast the ever-changing movement of their lives and actions, only insomuch as it transcends both the sheer functionalism of things produced for consumption and the sheer utility of objects produced for use. (162)

Cartography plays a special role in this production of things. It is what enables people to orientate themselves in their environment and the world around them. At the same time, maps of the world refer to that what stands in opposition to the 'ever-changing movement' of human existence. The validity of a map is in tension with its actuality. The danger of a map is that it could become outdated. But the moment a map goes beyond its pure functionality and usefulness as a commodity, it transcends its temporality and becomes a work of art and cultural heritage itself, whereby for Arendt, "because of their outstanding permanence, works of art are the most intensely worldly of all tangible things" (167).

The presence of the world as a media network, as a public space but also as cultural heritage is in a tense relationship between transience and permanence. The actuality of maps plays a special role

here. Overcoming this dependence on the 'ever-changing movement' of human existence in the context of art and cultural heritage thus also gives cartography the opportunity to be a component of the shared world beyond objects of daily use.

Arendt has shown that maps of the world can represent more than the typical world maps with their continents and national borders. It has become clear that the concept of the world refers to more than just the globe. This raises the question of how cartography can relate to media networking, public space and cultural heritage, and thus to the man-made world, and therefore requires a search for mapping methods that lie beyond the measurement of the world.[3]

3 The Appearance and the Essential

In cartography, a distinction must be made between the depiction of an appearance and the representation of the essential. While, for example, the appearance of the globe in terms of its topography will be completely depicted as a 3D model in the coming years, the essence here comprises the representation of the differences in altitude. The visual processing of the topography is carried out according to its essence in structures and colours that convey gradients and metres in altitude. Regarding the phenomenon of the world as a conditioning force, the question of the method of capture arises analogously. We cannot measure the world like a stretch of land but must observe it as a conditioning force and sharpen its perception as an in-between or as a medium between people. The epistemological prerequisites for this can be found in the art and cultural theory of Walter Benjamin, who was a close friend of Hannah Arendt.

In his approach to art theory, Benjamin assumes that the human world – philosophically mediated – is represented in symbols and allegories. In his dissertation "Der Begriff der Kunstkritik in der deutschen Romantik" (The Concept of Art Criticism in German Romanticism) from 1920, he emphasised that "nature and art […] are continuums of reflection, media of reflection" (Benjamin 1991a, 707).[4] To this end, he distinguishes between observation and perception. He places the scientific experiment in a tense relationship to the magical observation of nature in the sense of the Romantics – above all Novalis, whereby he emphasises that Novalis extends the theory of

---

3 Regarding the cultural and social aspects of Arendt's understanding of the world, the discussion of her references to the earth as nature and the world as a force conditioning nature was excluded. For further reading the following is recommended Cannavò 2015.

4 "Natur und Kunst sind Kontinuen der Reflexion, Reflexionsmedien". Unless otherwise stated all translations are by the Author.

the observation of nature to a theory of the observation of spiritual entities. The media of nature and art thus find a dialectical identity within the framework of this tension between perception and observation (cf. Benjamin 1991a, 60 f.). The poles of this dialectic can be subsumed under the fields of natural science and philosophy of art. In his dissertation, Benjamin thus already sketched out lines of research that can be traced right through to his late work. In his further development, he is not only critical of systematic philosophy, but also reflects critically on his early references to Romanticism.[5] Regarding the cartography of the world, Benjamin's references to the philosophy of art in particular need to be worked out more closely in this context, whereby the tense relationship to natural science and thus to the cartographic representation of measurements serves as a productive contrast.

Eight years after his dissertation in 1928, Benjamin published his habilitation thesis – the so called "Trauerspielbuch" (The Origin of the German Tragic Drama). In it, he formulates a direct criticism of the ideas of the Romantic aesthetes, to whom he had previously been affirmative. It is the distinction between symbol and allegory that motivates his criticism. Benjamin speaks of the "rule of a usurper", a "fraudulent use", of the "misuse of form analysis and content aesthetics" and ultimately of a "distorted concept of symbol" by the Romantics (cf. Benjamin 1991b, 336 f.) He assumes that "where the 'appearance' of an 'idea' is addressed as a 'symbol' in a work of art[,] [t]he unity of sensual and supersensual object, the paradox of the theological symbol, is distorted into a relationship of appearance and essence" (336).[6] He wants to counteract this distortion with his criticism.

Benjamin therefore introduces the differentiation between a symbolic reference to appearance and an allegorical reference to essence as part of his critique. Exemplary for the former is the "adamitic naming", i.e. the labelling of things with proper names (217). A fundamental process for cartography. This symbolic character of the word, understood as a name, is countered by the allegorical reference. Benjamin uses the examples of Goethe and Schopenhauer to analyse how the concept of allegory is understood in classicism as a counterpart to symbolic denotation (338 f.) The allegory is understood here as an expression for a concept that underlies a work of art, whereas the symbol refers to its idea. According to Benjamin, these classicist and romantic misunderstandings persist into the modern age (cf. Benjamin 1991b, 339).

---

5 A detailed discussion of Benjamin's concept of allegory, based on historical and contemporary Romanticism, can be found in Carr 2017.

6 "Denn dieser Mißbrauch findet, und zwar überall da, statt, wo im Kunstwerk die 'Erscheinung' einer 'Idee' als 'Symbol' angesprochen wird. Die Einheit von sinnlichem und übersinnlichem Gegenstand, die Paradoxie des theologischen Symbols, wird zu einer Beziehung von Erscheinung und Wesen verzerrt".

He concludes from his studies in contrast to the classicist and romantic understanding that the symbol is used as a symbolic correspondence and representation, whereas the allegory represents a dialectical technique and form of expression (340 ff.) For Benjamin, we label and name with symbols. "Allegories", on the other hand, "are in the realm of thought what ruins [are] in the realm of things" (354).[7] They correspond to a dialectical process of emergence, which requires an already existing symbolism as a prerequisite. In other words, the aesthetic technique of allegory represents an appearance that is only an allusion to unambiguous representation via symbolism. This is comparable to the construction of a temple in ancient times (the unambiguous symbol) and its appearance today as a temple ruin (the allegory of time). Consequently, allegories link a pre- and post-history within themselves. They thus circumscribe an origin. Similarly, the temple ruin refers to the former building as well as to the history of the building's existence and decay, even if it is impossible for it to represent the entirety of this history in the sense of an image.

In this sense, a world map with its national borders is an allegory of the political history of mankind. In them we are confronted with the prehistory of their political validity, just as they are the basis for future planning. At the same time, analogous to the temple ruin, they are not a representation of the actual action. Just as no religious ritual takes place in the temple ruin, but is only present in retrospect, the boundary lines of the world map do not show a political discourse, but its solidified 'ruin' of validity.

It is this processual and historical dimension that characterises allegory as an important art technique. The ruin perspective on an art form refers to the use of the medium in which it takes place. Benjamin also describes this as an actualisation corresponding to the 'now' (358). The symbolic details at the moment of the artwork's creation appear in this perspective as allegories for the history of ideas that has since passed. Applied to cartography, this becomes particularly clear when comparing historical maps. While in the symbolic view the symbols stand for concrete, valid data, when leafing through historical maps of the same region one changes to an allegorical view. The symbols become references to changes in the world. In this way, every time a cartographically relevant data set is updated, its previous representation becomes a 'ruin'. With the ruin perspective, Benjamin's method creates a link between appearance and essence. By viewing them as ruins, the former symbols are actualised in the allegorical view of the present.[8]

---

7   "Allegorien sind im Reiche der Gedanken was Ruinen im Reiche der Dinge".

8   The following work is highly recommended for a detailed reconstruction of Benjamin's arguments Palmier 2019.

Here, the process of actualisation is tied to the present of the recipient. From an epistemological point of view, the symbolic correctness of a country line on a map from the eighteenth century remains valid today as long as it was valid at the time of its creation. In this sense, its appearance is coherent. However, the essential aspect to which this line refers, namely its political validity, requires an allegorical consideration of its pre- and post-history.

The link between these levels of observation is the concept of the medium. On the medial level, the representation takes on a historical and actualising aspect, namely the allegorical (cf. Benjamin 1991b, 336). This linking of historical factual content qua symbolism and philosophical truth content qua allegorical reflection forms the core of Benjamin's aesthetic epistemology. Starting from scientific correctness, cartography succeeds in becoming a medium for revealing the world in allegorical perspective. The aspect of mere usefulness as a tool for representation and planning is supplemented by an artistic perspective. Such a world map allegorically refers to the historical point of view of its creation and places this in tension with the moment of its reflection. The question of the correctness of its symbols becomes the question of the truth of its validity. Before this link between allegorical view of the mapping of the world in the context of digital cartography is examined in more detail, the symbolic foundations on which every allegory is based need to be analysed more closely.

4 Representation as a System

In *Languages of Art* (1968), Nelson Goodman examines the question of the interface between sensual and intellectual representation. In his main work of art theory, he is interested in the reception of the work as well as the notation of art in the process of creation. In this context, he describes his approach as the search for a "general theory of symbols" (Goodman 1968, XI). He breaks down the conceptual framework of a specific symbol theory or the context of reference into a system of classification, i.e. logically linked categories. He describes the two basic modes of this systematisation as pictorial representation (depiction) and verbal description – for example, a newspaper picture and its subtitle. He notes that representation and description are characterised by different types of classification, namely by means of pictorial or verbal labels. However, these labels do not represent through similarity, but through denotation (5). This means that a relationship is created between the newspaper image, subtitle and photographed situation, whereby neither the photograph nor the words are similar to the real situation, but in the system of the daily newspaper they refer to a journalistic representation of

the event in the article. Goodman states: "Application and classification of a label are relative to a system; and there are countless alternative systems of representation and description" (Goodman 1968, 40). The event represented journalistically in the newspaper image could therefore also be represented and described as an oral narrative with fantastic embellishments in a lyrical work or as an emotional report by a contemporary witness in a video message. In each case, the same newspaper image is used as a label for the event in different systems of representation.

Similarly, different world maps can be generated from the same data set, for example with Europe or Australia at the centre. If there is no 'verbal description' or labelling, the map speaks for itself as an image. This creates the problem of relating the labelling to a possibly unknown or at least ambiguous system of representation and description. Goodman attempts to promote insight into and understanding of systems of representation with regard to this problem by means of his symbol theory. To this end, he argues in favour of the central position of representation in his symbol theory. He understands representation in such a way that it is unequal to an imitation, "that no degree of similarity is required between even the most literal picture and what it represents" (46). There does not have to be any similarity between 'what' is represented and 'how' it is represented, because

> [n]othing is intrinsically a representation; status as representation is relative to symbol system. A picture in one system may be a description in another; and whether a denoting symbol is representational depends not upon whether it resembles what it denotes but upon its own relationships to other symbols in a given scheme. (226)

Here, it is important to note that Goodman differentiates between analogue and digital symbol schemes. Both are regarded as categories for possible symbol systems, which he distinguishes by the fact that the former are "syntactically and semantically dense" or rather "undifferentiated in the extreme" and the latter "are one-one correlated with compliance-classes of a similarly discontinuous set". Such quantised digital symbol schemes are therefore "notational" (160 f.). Goodman's differentiation between analogue and digital symbolization can be illustrated, for example, using a clock hand, as the movement of the second hand represents an analogue symbol for the passage of time, whereas the clock face, as a notation of time in hours and minutes, introduces a digital aspect via quantisation. Therefore, it usually allows the time to be read according to the speed of the hands as well as the recorded units and thus in an analogue and digital scheme. A digital clock, on the other hand, in which the time display literally scrolls through its numbers or jumps from one second

to the next, only emphasises the consistently discontinuous and differentiated aspect of digital symbol schemes. In this sense, hand-drawn maps are also digital symbol schemes of an analogue world. Understood in this way, the epistemological basis of cartography is not only revealed in abstraction and summarisation but primarily a translation of analogue situations into digital data points.

If we look at the technical possibilities of today's cartography from this epistemological basis of translation between analog and digital, the question of the 1:1 problem as in Berge's 1946 short story *Del rigor en la ciencia* (On Exactitude in Science) no longer arises for the spatial size of the map or the so called Bonini-paradox (1971) of the complexity of the representation. By separating the digital data points as a representative symbol system from the dynamic representation in the user interface, any number of details can be given in the data set without this complexity having a static influence on their cartographic representation.[9] Thereby, zoom and filter systems can dynamically adjust the complexity according to the representation. Consequently, it is no longer a problem that "A city map that aspired to represent every traffic light, every pothole, every building, and every bush and tree in every park would threaten to become as large and as complex as the city that it depicted" (Scott 2020, 87). Today, the translation of analogue cities into digital twins is based on precisely this aspiration.

Goodman understands the transformation from analogue to digital as a definition of the degree of fineness of discrimination. This takes place by deriving a digital fixation, for example in the form of a unit of measurement, from an analogue exploration phase (cf. Goodman 1968, 161 f.). For the mapping of the world, this means questioning the exploration of the conditionality of the human being in terms of how it can be represented in digital fixation.

While the degree of fineness of discrimination in satellite projects for mapping the earth corresponds to the quality of the measuring instruments, socio-cultural data sets face the problem of an analogue exploration phase of situational observation. In this case, aesthetic experience takes the place of the objective measuring instrument. Goodman writes:

> [T]hat aesthetic experience is dynamic rather than static. It involves making delicate discriminations and discerning subtle relationships, identifying symbol systems and characters within these systems and what these characters denote and exemplify, interpreting works and reorganizing the world in terms of works and

---

[9] The tension between large amounts of data and the complexity of their visualisation was lately empirically investigated in: Gedicke, Jan-Henrik Haunert 2023.

works in terms of the world. Much of our experience and many of our skills are brought to bear and may be transformed by the encounter. The aesthetic 'attitude' is restless, searching, testing – is less attitude than action: creation and re-creation. (Goodman 1968, 241 f.)

This makes it clear that the digital fixation of a cartography of the world is ideally a dynamic one. It recalls the perspective emphasised by Kitchin and Dodge that maps "are not ontologically secure representations but rather a set of unfolding practices" (Kitchin, Perkins, Dodge 2009, 21). Especially since the technological progress of the computer technology has made it possible today to create maps with data sets that are updated almost in real time. In addition, data collection in the socio-cultural field via digital media is the result of a restless searching and testing attitude. With regard to Goodman, the aesthetic field of experience is not only about the accuracy of the data sets but also about their interpretation. Therefore, the cartographer's scientific approach is complemented by the aesthetic act of categorising and linking data with a system of symbols. The related task of representing the data with the symbolic system as a map evokes the tense relationship between correct representation and the communication of a truth, as already mentioned by Benjamin. However, representation and communication do not refer to a static object in this case, but to worldly and thus dynamic phenomena. In their situational observation, an aesthetic experience is conveyed whose interpretation depends on the perspective and the horizon of ideas of the observer.

5   Cognition and Truth

From an epistemological perspective, Benjamin's view on ideas is crucial. In his theory, they do not comprise the concepts or laws of phenomena but refer to their configuration. He writes: "Ideas relate to things as constellations relate to stars" (Benjamin 1991b, 214).[10] A constellation of stars, for example, refers to a bear or a chariot without depicting or describing them. For Benjamin, anyone who asks about the ideas behind things is not aiming for a conceptual realisation of things. In other words, he does not try to use a telescope to find out what certain stars have to do with bears but approaches an original truth about the idea that reveals itself in the configurations of astronomical phenomena.

While Goodman, for example, assumes that aesthetics is about gaining cognition: "The primary purpose is cognition in and for itself;

---

10   "Die Ideen verhalten sich zu den Dingen, wie die Sternbilder zu den Sternen".

the practicality, pleasure, compulsion, and communicative utility all depend upon this" (Goodman 1968, 258). Benjamin endeavours to clarify the relationship of aesthetics to truth: "Truth never enters into a relation and especially not into an intentional one. The object of cognition as a conceptual intention is not truth. Truth is an intentionless being formed from ideas" (Benjamin 1991b, 216).[11] And he goes on to emphasise: "Truth does not exist as a meaning that would find its determination through empiricism, but as the force that shapes the essence of this empiricism in the first place" (216).[12] For him, truth is that which characterises sensory perception. It therefore guides aesthetic apperception and thus helps to shape what is perceived. Benjamin's view goes beyond the question of identifying the correct symbol system on the aesthetic object and emphasises the clarification of the ideas conveyed. In this way, a map that depicts a worldly phenomenon, unlike a land map, is not faced with the question of the most useful scale. For a world map, Benjamin's perspective makes it clear that whether Europe or Asia is at the centre of a world map is not an opinion that can be determined by empiricism. A world map thus refers to an idea of the world or a possible world view. The truth of the map shapes the expression of this idea. It therefore does not appear to be absolutely or relatively correct, but as a perspective view. For Benjamin, this allegorical questioning of a truth beyond right and wrong symbolises the decisive principle of the aesthetic approach, namely the dialogue between experience and medium.

Benjamin describes truth as an immersion in unique constellations. An aspect that Goodman also mentions in the context of the refinement of exemplification and presents as an endless search (cf. Goodman 1968, 238 f.) In his critique of cognition, Benjamin, in contrast to Goodman, understands truth as "unquestionable" and presents it as something that becomes transparent through the configuration of being (cf. Benjamin 1991b, 209) In this context, "unquestionable" refers to the fact that it cannot be achieved cognitively as an answer to a question, but only emerges or crystallises in spontaneous monadic revelation, to use Benjamin's jargon. While cognition reveals something previously unclear, truth reveals what is sought by means of the form of its representation. In other words, cognition is defined conceptually and truth is shaped in the way it is presented. From Benjamin's perspective, the way in which a map is presented, which nowadays also includes its digital user interface, therefore does not

---

11   "Wahrheit tritt nie in eine Relation und insbesondere in keine intentionale. Der Gegenstand der Erkenntnis als ein in der Begriffsintention bestimmter ist nicht die Wahrheit. Die Wahrheit ist ein aus Ideen gebildetes intentionsloses Sein".

12   "Nicht als ein Meinen, welches durch die Empirie seine Bestimmung fände, sondern als die das Wesen dieser Empirie erst prägende Gewalt besteht die Wahrheit".

originate from a process of cognition, but encompasses a search for a possible truth – a revelation in the artistic sense.

The search for truth and its representation in the work of art correspond when what is aestheticised in the artificial object becomes transparent through the observation of the object as a medium. In contrast to a symbolic decoding, as presented by Goodman, Benjamin emphasises the search for truth within the aesthetically medialised object as a configuration of transparent layers. Instead of an exemplification, the recipient is thus confronted with a configuration in the work. For the cartography of worldly phenomena, this would mean that it does not depict these phenomena or show them as they are but represents them by asking the viewer a question in the sense of a search for truth by means of a configuration.

According to Benjamin's theory, the design technique of allegory provides a clue to what is to be signified. In other words, it does not represent it, but brings the seeker closer to what is behind the allegorical constellation via suggestions. Goodman's idea of an understanding of design and reception not as a question of aesthetic attitude, but as action, for example, also refers to this allegorical aspect – even if Goodman does not mention the concept of allegory, although it is correlated with symbolization. As follows, these theories can be summarised: symbols are references that are as unambiguous as possible in the sense of identification, which can be related to each other in a system, whereas allegories describe constructive acts of searching and pointing.

Worldly Maps understood in this way therefore do not depict a measurement of an object but represent a phenomenon by means of an identifiable system of symbols. The way in which such a map is depicted and viewed is based on a medium that allows constructive actions, the allegorical result of which mediates between the viewer's search and the map's clues. With a view to the mediality of the maps and thus also to their materiality, for example the 'mappae mundi' on parchment showed a world view. They were "based more on fiction than fact, were a way of visualizing a world yet to be charted. Yet they provided the most accurate maps of the time and helped shape European intellectual life for more than three hundred years" (Desimini, Waldheim 2016, 7). Their searching and pointing were dedicated to questions of worldly orientation. The paper maps of the modern age, on the other hand, were primarily used for navigation and thus for finding routes and spatial orientation. It is only through the digital maps of the twenty-first century that a mediality of cartography comes to light, whose constructive actions allow for a wide spectrum of allegorical acts. Depending on the filter settings, the same data set in the same user interface can, for example, produce a map of navigation or a map of a world view. Maps have always been interactive in this sense, but it was only in the age of technical reproducibility that they also became responsive.

This is particularly evident in the technology of digital twins. "Digital Twins are virtual representations of the real world that incorporate physical objects, processes, relationships, and behaviours. Digital twins are used to represent accurate historical state, to observe and monitor performance, and to explore or predict future state" (Andrews 2021). Therefore they offer a dense identifiable system of symbols as good as wide range for constructive actions in an allegorical sense. In terms of the history of cartography, they symbolise the transition from maps on paper to mapping with digital user interfaces. However, the dynamic interaction made possible by this requires the user to adopt a different attitude to reception than was previously the case with static maps. Accordingly, the question of the reception of digital or, more precisely, digitised world maps needs to be examined.

6 Reproduction and Distraction

Regarding digital user interfaces in cartography and their content such as a digital twin of a city, it is important to clarify the connection between medium and reception. The fact that when we receive something tactilely, i.e. by using it instead of looking at it, a non-contemplative case of reception occurs, is according to Benjamin exemplary of the aesthetic upheavals of the twentieth-century and goes along with the age of technical reproducibility.[13] In this age, the industrial means of production in the form of media equipment and art techniques brought about a profound change in the capacity for apperception (cf. Benjamin 1991c, 505) Benjamin argues that contemplation as an attitude of reception is in regression and that in the twentieth-century, distraction becomes primarily the direction of attention towards the optically and tactilely received technical reproduction. The contemplative decoding of aesthetic experience thus undergoes a change to the effect that, instead of identification, there is a dispersed attention that perceives and appropriates the artwork or design object not as an object of contemplation but as a medium of interaction. Against this background, if we compare the contemplative attitude with looking at a globe and the distracted attitude with interacting with a google map, for example, it becomes clear how zooming in and out on the globe requires mental concentration and deepens contemplation, whereas interaction with the digital map takes place somewhere between tension and boredom. This refers to the typical sensations of a distracted attitude of reception, as is particularly evident in film (cf. Benjamin 1991c, 505).

---

[13] A more in-depth look at Walter Benjamin's media theory and its context in the twentieth-century can be found in Kang 2014.

The conditions of aesthetic reception established on the basis of Benjamin's theory and its distinction between cognition and truth as well as between symbol and allegory stand in contrast to Goodman's cognitivist theory of symbols. According to Benjamin, the change in apperceptive mediation in the context of the age of technical reproducibility goes hand in hand with the observation that the linking of a dispersed reception with the allegorical form of design corresponds to the aesthetic handling of apparatuses. By using computer technology to design user interfaces for cartography, we not only enable Goodman's central cognitive engagement with a map in contemplation, but also create possibilities for interaction with the map, which in its aesthetic experience enables an allegorical search for truth.

7 Cartography and the Digital World

The question of mapping the world has led us to understand the world as a human condition. Contrary to the earth, the world does not consist of stardust, but of ideas and things with which people create an 'in-between'. Networked in this way, the world grows in particular through the means of technical reproducibility. From the question of what the world is, the philosophical gaze then turned to the question of how the world is. With Walter Benjamin, it was expressed as a phenomenon between ideas, names, and concepts in the symbols and allegories that we show each other. Based on symbolization, which, in Nelson Goodman's words, begins in representation and not in depiction, it became clear how analogue and digital reference systems differ. The quantised analogue world, captured as a data point, is fixed and schematised in its differentiations. In the context of a cartography of the world, the aim is to link a system of symbols not with the quality of a measuring instrument, but with aesthetic experience. Accordingly, the ideal mode of representation is a dynamic event.[14] This symbol theory was then expanded by Benjamin's understanding of allegory as a configuring action. It accompanies a search for truth instead of making empirical statements. Its perspective reveals a horizon of ideas or allows ideas to become transparent. With a view to today's maps and digital twins conveyed in digital user interfaces, the question of the attitude of reception arises in conclusion.[15] Benjamin's approach, which is based on art and cultural theory, must be distinguished from Goodman's cognitivist approach. Instead of a

---

[14]   An example of this is the empirical research on eye movement when looking at different digital maps is Popelka et al. 2022.

[15]   The following practical research on user experience in cartography is a notable example Roth et al. 2017.

contemplative attitude of reception that is strong in the identification of symbols, Benjamin ascribes a dispersed attitude of reception to the recipient in the age of technical reproducibility and thus in the use of media devices. In this sense, media-based digital cartography is less read and more experienced. The interaction with the cartographic data set and its user interface as well as its responsiveness take centre stage.[16] This gives the allegorical search for truth a further playing field. Understood in this way, the cartography of the world becomes not only a useful object of cognitive processes such as determination and planning, but also an artistic and aesthetic experience of an interactive search for truth.

Bibliography

Akkerman, A. (2016). "Philosophical Urbanism from Thomas More to Walter Benjamin". Akkerman, A., *Phenomenology of the Winter. City Myth in the Rise and Decline of Built Environments*. Basel: Springer Cham, 127-37.

Andrews, Ch. (2021). "A Foundation for Digital Twins". *ArcGIS Blog*, 11 January 2021. https://www.esri.com/arcgis-blog/products/arcgis/aec/gis-foundation-for-digital-twins/.

Arendt, H. [1958] (1998). *The Human Condition*. Chicago: The University of Chicago Press.

Benjamin, W. [1920] (1991a). "Der Begriff der Kunstkritik in der deutschen Romantik". Tiedemann, Schweppenhäuser 1991, 7-122.

Benjamin, W. [1928] (1991b). "Ursprung des deutschen Trauerspiels". Tiedemann, Schweppenhäuser 1991, 203-430.

Benjamin, W. [1936] (1991c). "Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit". Tiedemann, Schweppenhäuser 1991, 471-508.

Borges, J. L. (1975). *A Universal History of Infamy*. London: Penguin.

Cannavò, P.F. (2015), "Hannah Arendt: Place, World, and Earthly Nature". Cannavò, P.F.; Lane Jr., J. (eds), *Engaging Nature: Environmentalism and the Political Theory Canon*. Cambridge (MA): MIT Press Scholarship, 253-70.

Carr, N. (2017). "Symbol and Allegory in Romantic History". *New Literary History*, 48(1), 171-92.

Desimini, J.; Waldheim, Ch. (2016). *Cartographic Grounds*. Princeton: Princeton Architectural Press.

Dutton, J.M.; Briggs, W.G. (1971). "Simulation Model Construction". Dutton, J.M.; Briggs, W.G. (eds), *Computer Simulation Of Human Behavior*. New York: John Wiley & Sons, 103-26.

Gedicke, S.; Jan-Henrik Haunert, J. (2023). "An Empirical Study on Interfaces for Presenting Large Sets of Point Features in Mobile Maps". *The Cartographic Journal*, 60(1), 25-42.

---

16 An overview of these new areas of cartography regarding user-centered design, virtual environments, and digital visualisation can be found in Robinson et al. 2023.

Gómez, N.B. (2016). "A Critical Approach to Hannah Arendt's Concept of World-liness and Its Applicability in the Social Sciences". *Human Affairs*, 26(2), 201-11.

Goodman, N. (1968). *Languages of Art. An Approach to a Theory of Symbols*. Indianapolis: Bobbs-Merrill.

Kang, J. (2014). *Walter Benjamin and the Media*. Cambridge: Polity Press.

Kitchin, R.; Perkins, C.; Dodge, M. (2009). "Thinking About Maps". Dodge, M.; Kitchin, R.; Perkins, C. (eds), *Rethinking Maps.* Oxford: Routledge, 1-25.

Palmier, J. (2019). *Walter Benjamin*. Frankfurt am Main: Suhrkamp.

Popelka, S. et al. (2022). "Swipe Versus Multiple View: A Comprehensive Analysis Using Eye-tracking to Evaluate User Interaction with Web Maps". *Cartography and Geographic Information Science*, 49(3), 252-70.

Robinson, A. et al. (2023). "New Directions for the State of the Art and Science in Cartography". *International Journal of Cartography*, 9(2), 143-9.

Roth, R. et al. (2017). "User Studies in Cartography: Opportunities for Empirical Research on Interactive Maps and Visualizations". *International Journal of Cartography*, 3(1), 61-89.

Scott, J. (2020). *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven: Yale University Press.

Tiedemann, R.; Schweppenhäuser, H. (eds) (1991). *Walter Benjamin Gesammelte Schriften*, Bd 1. Frankfurt am Main: Suhrkamp.