

English Summary:

The Habitat Diorama around 1900

Medial Obstinacy and Political Constructions of Space in Natural History Museums

Introduction: The Habitat Diorama in Visual Cultures around 1900

The history of visual cultures in the late 19th and early 20th centuries is characterized by the narrative of a “caesura in the history of culture” effected by the “invention” of photography.¹ This narrative lends itself to a – by now familiar – teleological history of the development of various illusion-generating media – from the camera obscura to photography and film, and all the way to digital and virtual realities.² A closer examination of image objects from around 1900 reveals however that a different phenomenon is no less relevant, namely the plastic or sculptural imitation of reality, one that is directed toward a bodily form of perception.³ Waxworks, open air museums, ethnographic and industrial exhibitions, department store display windows, as well as dioramas in museums of natural history and ethnology: all of them work with the simulation of slices of (putative) reality, with imitations that are – in contrast to photography – three-dimensional, and can be positioned in relation to the viewer’s own body.

1 A representative example is Gerhard Paul, *Das visuelle Zeitalter. Punkt und Pixel*, Göttingen 2016, p. 12.

2 See among others Ulrike Hick, *Geschichte der optischen Medien*, Munich 1999, and Oliver Grau, *Virtuelle Kunst in Geschichte und Gegenwart. Visuelle Strategien*, Berlin 2001. Jonathan Crary speaks of “models of continuity” that postulate steady progress in the representational realism, “in which Renaissance perspective and photography are part of the same quest for a fully objective equivalent of ‘natural vision.’” (Jonathan Crary, “Modernizing Vision”, in *Vision and Visuality*, edited by Hal Foster, Seattle 1988, pp. 29–50, here p. 30). Crary rejected this theory decisively as early as 1990 (Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the 19th Century*, Cambridge 1990).

3 Regarding the turn of the century, US-American media studies expert Mark B. Sandberg refers to a “culture of the effigy” (Mark B. Sandberg: *Living Pictures, Missing Persons. Mannequins, Museums and Modernity*, Princeton 2003, p. 3). Since both the term effigy and its principle have been familiar since antiquity, Sandberg’s proposal for using it to designate the period around the turn from the 19th to 20th centuries appears anachronistic.

Sculptural images were held to possess decisive didactic advantages – it was believed that they facilitated an intuitive, non-intellectual form of communication that reached broad target audiences. Spatial simulations were not however intended for actual physical contact with viewers. The content was “rendered perceptible” and “presented to the eye”, while not meant to be actually touched by users – unless metaphorically. Looking was however conceived as a physical process, and the body was factored into visual reception. The US-American art historian Jonathan Crary has characterized this interest in corporeality as a decisive dimension of the paradigm shift of 19th century culture of vision.⁴ He speaks of the “privileging of the body as a visual producer”.⁵ Shifting into the main focus of both scientific investigations and media productions now is the individual recipient, his/her body and his/her sensations.⁶

One of the three-dimensional illusionistic media that emerged during the 19th century was the habitat diorama, a type of display found in museums of natural history that presented taxidermy animals in artificial landscapes, set against painted backdrops. Such a landscape scene is designed to imitate the animal’s “natural” environment. Through indexical reference, and unlike photography, for example, the habitat diorama is intended not just to visualize a pre-existing reality, but to make it accessible to experience in an immediately physical way.⁷ The life-size prepared animals are positioned in relation to the viewer’s own body. The display’s actual physicality gives rise to multiple perspectives, and in a way that serves as a stimulus to movement. Real spatial depth calls upon the viewer to focus on diverse image levels. With a diorama, a close-up view is always possible, but can also be easily exchanged for a more distant one. The boundary demarcation of the viewing process is the glass pane: tactile values are presented, but cannot be experienced directly, only apprehended in purely visual terms.

The habitat diorama is neither a peculiar exception, nor a fixed component in the teleological development of illusionistic media.⁸ Like every image medium that is dedicated to imitating nature, it manifests specific strategies of authentication, along with intrinsic characteristics that identify it as human-made. In the present study, the habitat diorama and its medial characteristics are anchored in cultural history, without recourse however to the standard narrative of the illusionistic media. Here, human image-making activity is emphatically not conceived as a striving toward a continuously

4 Jonathan Crary, “Modernizing Vision”, in *Vision and Visuality*, edited by Hal Foster, Seattle 1988, pp. 29–50, here p. 33. Previously, according to Crary, theories of vision and of optics are characterized by their exclusion of the body (ibid.).

5 Crary 1988, p. 35.

6 As a contribution to the mindful use of language, this work attempts to use gender-equitable language.

7 For a comparison between the media-specific characteristics of photography and the habitat diorama, see pp. 305, 373 and 382.

8 On the question of illusion in the habitat diorama, see p. 273.

improving imitation of reality. A complete or seamless illusion is not the aim of the habitat diorama. The intention is instead to generate a specific form of physical presence, one that can be confused with reality momentarily, but is always secured by the awareness of being in the role of the observer.

Preceding an analysis of the reception situation is a detailed investigation of the contents of the exhibited scenarios. Habitat dioramas are by no means mere copies of nature or views that are devoid of commentary.⁹ Beyond conveying scientific knowledge about animals, their behaviour, and their environments, habitat dioramas also transmit moral values. Nature, and the “natural order” that it supposedly possesses serve to legitimate human-made norms.¹⁰ The presentation of nature and of “the natural” in museums constitutes a communicative basis for articulating the rules of human social cohabitation. Alongside biological systems of order, habitat dioramas also negotiate social ones, representing cultural norms and political units of space and territory. Through illusion and imitation, the transmitted content is imbued with the appearance of biological reality; the presentation acquires the status of a natural condition. This is why critical reflection is called for here in particular. By virtue of its claim to faithfully recapitulate reality, and by virtue of its multiple strategies of authentication, the habitat diorama is endowed with a specific visual effectiveness, and incorporates qualities that make it difficult to achieve critical distance. And precisely here, a well-founded scholarly analysis and a critical interrogation are urgently necessary.

Serving here as concrete examples are two dioramas, both produced around the turn of the century for the Senckenberg Museum in Frankfurt am Main: The “Flora and Fauna of German East Africa” (fig. 1) was placed on display in the museum beginning in 1908, and “Life on the North Pole” (fig. 2) beginning in 1910. Already the titles – which refer to geographical regions and not animal species – are suggestive of the enormous importance of political (and in many cases colonial) conceptions of space for habitat dioramas.

The historical period investigated here – which falls just before and after the turn of the 20th century – has been described as a time of rapid change and dramatic upheavals within European cultural history, as witnessing a “transformation of the world”.¹¹

9 Franziska Winter, “Drei Elche für ein Diorama. Zur mimetischen Qualität des raumbildlichen ‘Als-ob’”, in *Tierstudien*, Nov 2017, pp. 104–112, here p. 107.

10 Lorraine Daston, a historian of science, regards the derivation of the norms of human collective life from nature as a phenomenon that is prevalent in diverse cultures and historical eras: “Why do human beings, in many different cultures and epochs, pervasively and persistently, look to nature as a source of norms for human conduct?” Lorraine Daston, *Against Nature*, Cambridge MA 2019, p. 3. (<https://www.are.na/block/7805012>)

11 To invoke the title of a fundamental monograph by the historian Jürgen Osterhammel on 19th century history (Jürgen Osterhammel, *Die Verwandlung der Welt. Eine Geschichte des 19. Jahrhunderts*, Munich 2009).

Decisive for the present study is in particular the altered relationship between humanity and nature, the formation of a “modern nature”, to cite the historian Lynn K. Nyhart.¹² Susanne Köstering, a colleague of Nyhart’s, speaks of a “biological turn” that occurred around 1900.¹³ One aspect of this “turn” was the reconstruction and remodelling of museums of natural history, as well as the rise of new biological theories that would be endowed with visual expression through habitat dioramas. Another important feature of the period was the high interdependency between European and North American popular cultures.¹⁴ On the basis of the image material intensive and reciprocal processes of exchange can be assumed.

The norms of social coexistence and the perspectives of humanity and nature that became established around 1900 continue to be effective even today – along with their forms of visualization, an example being the habitat diorama, a type of display still present in many museums of natural history. For the most part, as Susanne Köstering points out, “museums of natural history continue up to the present to draw upon forms of presentation and communication that were devised more than 100 years ago, in the late 19th and early 20th centuries, in the context of the museum reform movement”.¹⁵ In a related observation, media researcher Franziska Winter remarks more critically that museum work continues to suffer from the “colonial patterns of entertainment and knowledge” that characterized its genesis.¹⁶ The legitimization of human-created orders and ethical value systems as “biological” or “natural” is a fundamental phenomenon of Western cultures that persists up to the present.¹⁷

For this reason, an examination of exhibition media such as the habitat diorama is relevant not just from a historical perspective, but for a more detailed understanding of contemporary phenomena as well. Despite competition from more recent media such as nature photography and film, the habitat diorama continues to hold its ground, and remains a standard media of presentation in natural history museums worldwide. Although regarded at the end of the 20th century as dusty and old-fashioned, and despite the fact that several presentations were dismantled, the habitat diorama in some respect has experienced an “astonishing comeback” and some have even been elaborately

12 Lynn K. Nyhart, *Modern Nature: The Rise of the Biological Perspective in Germany*, Chicago 2009.

13 See Susanne Köstering, *Natur zum Anschauen. Das Naturkundemuseum des deutschen Kaiserreichs 1871–1914*, Cologne 2003, p. 3. See also Susanne Köstering, *Ein Museum für Weltnatur. Die Geschichte des Naturhistorischen Museums in Hamburg*, Abhandlungen des Naturwissenschaftlichen Vereins in Hamburg, vol. 46, Hamburg 2018, p. 96.

14 Sandberg 2003, p. 8f.

15 Köstering 2003, p. 1.

16 Winter 2017, p. 112.

17 This hypothesis forms the basis of an essay on this topic by the historian of science Lorraine Daston (Daston 2018).

refurbished.¹⁸ Habitat dioramas enjoy a broad reception in the realms of science and contemporary art as well.¹⁹ As objects designed to shape the viewer's experience, they play a role in current discussions of exhibition strategies, of forms of display in museums and other cultural institutions.²⁰ In museums of natural history in particular, the current ecological crisis has resulted in significant contention regarding models of visualization and the suitability of historically evolved exhibition media such as the habitat diorama.

Key Findings: The Entanglement of Ideological Baggage and Aesthetic Experiences in the Reception Process

The present study investigates the habitat diorama as an image medium with reference to two displays from the Senckenberg Museum in Frankfurt, namely the “Flora and Fauna of German East Africa” and “Life on the North Pole”, both created around 1900. In the course of this research, it has become clear that the habitat diorama represents a complex medial structure, some of whose features are designed to authenticate highly charged messages. A decisive contribution – on both the political and aesthetic levels – is made by the diorama's spatiality. The habitat diorama defines a space that is presented as a biological unity, but often demarcates a political territory, or is at least associated with physical claims to the spatial environment. The space presented in a habitat diorama is perceived not just optically, but is experienced in spatial terms as

- 18 Speaking of a “comeback” are, among others, Schulze, Kurbel and Köhler (Arne Schulze, Michaela Kurbel, Jörn Köhler, “Zur Historie der zoologischen Dioramen im Hessischen Landesmuseum Darmstadt”, in *Naturkundliche Dioramen*, issue 19 of the publication series kaupia. Darmstädter Beiträge zur Naturgeschichte, Darmstadt 2014, pp. 7–16, here p. 5) and Stephen Quinn from the AMNH (Stephen Christopher Quinn, *Windows on Nature: The Great Habitat Dioramas of the American Museum of Natural History*, New York 2006, p. 21). 43 habitat dioramas at the AMNH were restored in 2012 (Winter 2017, p. 104), as well as, in 2011, the animal geography groups in Darmstadt (Mareike Munsch, Gabriele Gruber, Arne Schulze, Hartmut Schmiese, Aleksandra Angelov, Gunnar Riedel and Jörn Köhler, “Restaurierung der zoologischen Dioramen im Hessischen Landesmuseum Darmstadt”, in *Naturkundliche Dioramen*, issue 19 of the publication series Schriftenreihe kaupia. Darmstädter Beiträge zur Naturgeschichte, Darmstadt 2014, pp. 17–27). Even where habitat dioramas have been preserved for the sake of their historical interest, they have been presented in exhibition contexts not as historical exhibits, and instead, as before, without commentary alongside other images of nature.
- 19 In the present study, the use of taxidermy animals or allusions to display practices involving habitat dioramas in contemporary art plays only an ancillary role. Such references are found in on pp. 259–264. An essential publication on this topic was published by the art historian Petra Lange-Berndt (*Animal Art. Präparierte Tiere in der Kunst 1850–2000*, Munich 2009).
- 20 See among others *Ausstellen und Vermitteln im Museum der Gegenwart*, edited by Carmen Mörsch, Angeli Sachs and Thomas Sieber, Bielefeld 2017.

well. The material presence, three dimensionality, and spatial staggering of the image elements serve as a stimulus to a mobile, tactile and corporeal mode of looking. Central alongside this spatial experience is the presence of genuine animal skins, by means of which the habitat diorama generates evidence.

The “Flora and Fauna of German East Africa” and “Life on the North Pole” were among the first exhibition scenarios presented in the German Empire that displayed all of the elements of a fully elaborated habitat diorama. In the course of the 20th century, this visual medium became established in nearly all of the museums of natural history of the Western industrial countries, where it is still encountered frequently today. Despite its ubiquitous presence as part of the exhibition culture of natural history museums, the specific medial characteristics of the habitat diorama have to date been analyzed only in a rudimentary fashion. Instead, the habitat diorama is frequently regarded – like many forms of natural scientific imagery – as simply documenting pre-existing realities. The present study emphatically repudiates this understanding of the habitat diorama. With reference to the above-mentioned examples from Frankfurt, the first part of this study seeks to lay bare the cultural shaping and the contemporary ideological dependencies of the perspective of nature offered by the habitat diorama. The second part analyzes the media-aesthetic strategies through which the status of pre-existing nature is nonetheless attributed to the presented image. The central results of both parts are summarized and presented here.

Particularly in the 19th century, museums of natural history were places where the natural order was constructed and transmitted. The taxidermy animals found in museums define and represent an animal species that is classified, among other things, by the pose and expression with which it has been endowed through the production process. In the habitat diorama, this species is also characterized by the landscape within which it has been situated, by its juxtaposition with other animals in the diorama, and by the interactions implied by their combination. The giraffe is staged as a characteristic feature of the landscape of “East Africa”, while the East African landscape and peaceful coexistence with other ungulates are presented as being central to the giraffe’s identity. The deer, or the “deer family”, is presented as “characteristic” of the forest, while the forest is presented as the deer’s “characteristic” environment. The possibility of the reciprocal definition of animal and landscape is an essential innovation offered by the habitat diorama in relation to the previously customary forms of presentation, which involved presenting individual taxidermy animals in display cases.

The way in which the habitat diorama took up the animal’s social behaviour and living environment as an additional aspect of identification alongside physical morphology was an expression of the transformation taking place in biological research at that time. Expanding existing natural scientific concepts in fundamental ways, and raising new questions were the theory of evolution, animal geography and initial impulses toward ecological thinking. The US-American historian Lynn K. Nyhart has charac-

terized this process as “rise of the biological perspective”.²¹ Seen now from a biological point of view, however, was not just the animal world: human society was re-examined from this standpoint as well. In a newly forming bourgeois society, the “natural order” became a point of reference and a basis for legitimating social and political orders. Animal and human behaviour were compared, and commonalities postulated – an example being cohabitation in small families and other peaceful communities. Increasingly, zoological illustrations displayed genre scenes involving animals: the taxidermist Philipp Leopold Martin argued explicitly for the presentation of taxidermy animals in “family portraits”.²² The natural history museums in the German Empire – and the image media associated with them – served not just to transmit scientific knowledge, but also to establish a sense of identity. As centres of popular education addressed to a broad public, they also contributed to the formation of a national consciousness.

Habitat dioramas not only invent animal types, but spatial types as well. Oftentimes, the spaces defined by the displays were (and are) not by primarily biological, but instead political in character – as shown by titles like “The Flora and Fauna of German West Africa” or “The German Forest”. In 19th-century biological research, the places inhabited by animals and plants were understood as “Lebensräume”. These were defined primarily in physical and geographical terms, but also encompassed cultural and political dimensions: the presented community of creatures was “rooted” in a specific place. Habitat dioramas highlighted connections between animal and landscape that purported to be deterministic rather than relative. Habitat dioramas and habitat groups were hence ideal conveyors of the 19th century habitat concept.

In the Senckenberg Museum, German East Africa and the “Far North” were presented as spatial cubes into which specific animals and a specific landscape were inserted. But they conveyed something more to the Frankfurt public than ideas about biology and topography. The target locations of efforts toward colonial expansion were scenarized as “empty” – meaning spaces that lacked either populations or property claims –, and their appropriation was thereby morally legitimated. Habitat dioramas demarcated “domestic” and “foreign” spaces, identifying typologies that contributed to a sense of national identity, an example being “The German Forest”. Standing before the dioramas, beholders participated imaginatively in the spatial processes of nation-state formation.

The appropriation of space and of nature that is visualized in the habitat diorama already suggests the intimate interrelationship of these displays with hunting. Precursor display types and related forms of staging were created in hunting museums and exhibitions. In such contexts, to a far greater degree than in museums of natural history, the

21 Nyhart 2009.

22 See Martin 1880, pp. 15 and 74. See also Köstering 2005, p. 147.

taxidermy animal functions as a trophy, as an emblem of the victory of humanity over nature – relevant references being the private museums belonging to Louis Philippe Robert d'Orléans and Percy Powell-Cotton and the pavilions and “memory cabinets” of private hunters at the first International Hunting Exhibition in Vienna. Still, these – and in fact all habitat dioramas – are expressions of an asymmetrical relationship of power between humanity and the animal world. Along with the demarcation of space, the arrangement and classification of animals in the habitat diorama visualizes the supposed hegemony of humanity over nature. Indeed, most of the efforts toward the protection of nature undertaken in the late 19th and early 20th centuries should also be considered against the background of this conviction of human superiority. Given the breakneck changes introduced by modernity during this period, nature acquired a new status as a threatened entity. “Civilizational progress” and the associated destruction of natural landscapes were nonetheless regarded as unavoidable. Under these circumstances, the habitat diorama could become a kind of “memorial island”,²³ devoted to the memory of “unspoiled” nature. But habitat dioramas by no means preserved complex ecosystems whose natural processes were to be maintained in all of their vibrancy. It was instead a question of the conservation of individual animal species as “natural relics” and the fixation of individual landscapes in unalterable images. In the habitat diorama, spatial demarcations were set into place permanently.

The analyses contained in the first part of this study shows that habitat dioramas represent constructed orders that are in part highly problematical from a present-day perspective. Deterministic and naturalizing perspectives serve to obfuscate the responsibility of human actors for the formation of social norms and political spatial orders, suggesting the immutability of the represented structures. The ideological baggage found behind such scenarizations was implicitly conveyed, but rarely addressed. The analysis carried out in the present study supplements the habitat diorama with the kind of critical reflection that is absent from the medium itself. A central approach here is the application of deconstructive methods drawn from critical cultural studies, with the intention of exposing the immanent systems of social order and power relations that are implicit in these displays. The use of these methods is suggested in particular by the background of the two central examples from Frankfurt, both implicated in the history of colonialism. It should be unthinkable to write about a habitat diorama entitled “Flora and Fauna of German West Africa” without considering the critical perspectives of postcolonial studies, for example.

The second part of this study develops an emphatically art-historical perspective, examining the habitat diorama with an eye toward its specific media characteristics. A key question here is: How does the display succeed in appearing genuinely lifelike despite

23 Schmoll 2006, p. 53.

its evident deficits – with an excessive number of animals standing motionlessly and noiselessly amidst a conglomerate of landscape elements? How does a habitat diorama persuade its viewers that it is making a credible statement about reality? The analyses demonstrate that the medial peculiarity of the habitat diorama resides in the entanglement of its heterogeneous strategies of depiction and authentication. The habitat diorama can be perceived as a simulacrum, but also – at least momentarily – as a slice of reality, and it proposes effective arguments for both perspectives at the same time.

The materials of the habitat diorama show the development of a divergent and to some extent contradictory activation potential. The real animal skins – prepared for exhibition using dermoplastic methods – and their indexical reference to reality serve as persuasive forms of authentication, and in a way that influences perceptions of the display as a whole. The use of a pre-existing animal skin is however problematic, since it transgresses the canon of Western artistic creation, disrupting our acquired understanding of images. The precarious image status of the habitat diorama is not just revealed by scholarly analyses, but also becomes tangible with each individual viewing. The imitative materials and the illusionistic background painting function to confirm our acquired habits of interacting with representations, thereby re-stabilizing the image status of the habitat diorama. Here, it becomes clear that the recognizable artificiality of the sculpturally shaped landscape and the background painting does not represent a deficit for the habitat diorama, but is actually an important component of its effectiveness as an image.

The complete or seamless imitation of nature is never the aim of the habitat diorama. The notion that the dioramas are “media of representation and science that do not engage in reflexive self-reference to themselves as media” and which rely upon “transparency and the maximum repression of their perceptibly constructed character”²⁴ is consistent with the conventional narrative concerning the illusionistic media, which are held to strive toward an increasingly complete imitation of reality, yet without themselves ever emerging as intermediaries. The habitat diorama however, relies upon a replication of reality that is simultaneously recognizable *and* persuasive. Alongside the use of real animal skins, dimensional accuracy, three-dimensionality, and the detailed shaping of the image space are also important aspects of the convincing imitation of nature. When we focus on one of the numerous elements of the image narrative – all of them formulated down to the last detail – the boundaries of the pictorial space become indistinct. The autonomous liveliness that is attributed to living creatures, their “animal agency”, is deployed in a targeted way in order to activate the depicted events imaginatively. The natural lighting too enlivens the depicted scenario. And the glass pane that closes off the pictorial space renders the noiseless and odourless quality of the natural scene plausible.

24 Voss 2017, p. 202.

However, the use of real animal skins and natural illumination does not prevent the animal's immobility from interfering with an imaginative perception of its lifelikeness. The museum context and the architectural setting – in Darmstadt, even the round arches of the rear walls remain visible – ensure that the image character of the habitat diorama remains conspicuously present. The sculptural landscape is shaped imitatively, but the use of pre-existing materials is avoided for the most part, while the painted surfaces conceal their own materiality – in most instances papier-mâché – only to a limited extent. The recognizability of the display's artificiality is explicitly tolerated. The expanded perspective of the painted background landscape extends the space of the diorama visually, but at the same time clearly marks its spatial limits.

Consistently, the habitat diorama simultaneously deploys numerous strategies of the pictorial imagination *and* of picture consciousness. On one hand, it purports to be an equivalent of nature, while referring, on the other hand, to its status as a constructed representation. An awareness of the constructed character of the habitat diorama does not however interfere with the medium's persuasiveness – on the contrary, it strengthens it. A recognition of its artificiality is an important precondition for the viewer to surrender to risk-free imagination, deriving pleasure from the deception. It empowers him/her, allowing him/her to feel that he/she is in control of his/her perceptions and his/her reception of the image content.

The habitat diorama addresses the beholder and his/her body. The scale and three-dimensionality of the image elements, as well as their staggering in pictorial space, call for an awareness of his/her own body, while also necessitating physical movement. The juxtaposition of real and imitative materials elicits the tactile viewing of surfaces. The multisensorial character of perception evokes memories of earlier bodily experiences. It is precisely the aspect of corporeal perception that distinguishes the habitat diorama from other animal imagery such as zoological illustrations and paintings, photographs and films of animal life. The incorporation of the viewer's own momentary and recalled bodily perceptions generates a form of participation in the depicted events, an emotional connection that reinforces and enhances the imaginative liveliness of the display scenario. Once the beholder has become emotionally involved, it no longer matters that the habitat diorama is noticeably constructed – despite his/her awareness of the fictive character of the depicted events, the emotions elicited by the scenario are nonetheless genuine.²⁵ It is the authenticity of our subjective responses, and not the authenticity of nature as such that endows the habitat diorama with its persuasive power.

Profound subjective perceptions are triggered by bodily experiences and associative memories, for example past contact with an animal pelt, making the reception of the

25 See Van Eck 2015, p. 21. Van Eck writes here in general about the “fictions” of imitative art works, not about the habitat diorama specifically.

habitat diorama an individualized process. Nevertheless, the authentication process of the habitat diorama functions primarily thanks to practiced supraindividual habits of looking. The credibility of the habitat diorama and its reception process as a whole – including the involvement of the body and individual perceptions – relies upon cultural conventions.²⁶ That we attribute to the habitat diorama the capacity to make credible statements about reality is the result of a complex process of negotiation, one that is not supratemporal, but is instead bound up with a specific historical context. An understanding of the historical and cultural conditionality of imitation calls into question the conventional teleological narrative, which claims that image production in the West continually strives toward greater perfection in imitating nature. The habitat diorama shows us that the mimetic is not always equivalent to the authentic.

As a medium, the habitat diorama exemplifies the importance of three-dimensionality for simulacra of nature around 1900, and the crucial status of corporeality for perception during that period. At that time, three-dimensional imitation – for example display window mannequins or simulations of rock formations in artificial grottoes – was of greater importance than the production of formal similarity. Other media – the panorama and stereoscopy, for example – used other methods in order to reproduce reality, and different forms of authentication, but pursued a similar strategy of bodily involvement in ways comparable to the habitat diorama. Comparisons with displays at world's fairs and industrial exhibitions and the presentation of commodities in display windows on the boulevards of metropolises have shown that the habitat diorama elicits a mode of looking that had already been well practiced elsewhere: a mobile, probing form of vision that grasps, inspects, and compares material qualities optically.

The case of the habitat diorama also demonstrates that every “naturalistic” image exploits its own peculiar strategies for imitating reality. At least as important, however, is the way in which such images also exploit specific strategies for disrupting illusionistic effects, for signalling their status as images. This becomes particularly evident when we examine photographs of habitat dioramas, which consistently show the image motif, but almost never the image medium itself. Rarely is the frame of the diorama incorporated into the photographic image; seldom is the pane of glass rendered visible. Photography takes advantage of its own strategies for image creation and authentication, which to some extent efface those of the habitat diorama. The media strategies of photography allow the medial strategies of the habitat diorama to become transparent. In many cases, a black-and-white photograph of a diorama is difficult to distinguish from a black-and-white photograph of a living animal in a real landscape. Supplanting the realistic

26 The US-American art historian Jonathan Crary (who has already been cited a number of times in this study) has used optical apparatuses and digital media to make explicit a number of the cultural conventions of looking in the 19th century. He emphasizes in particular the new significance of the body for practices of reception during this period (see Crary 2014, here p. 33).

dimensions, real materials, corporeality and coloration of the habitat diorama now are indexical qualities and “mechanical objectivity”, which emerge as essential strategies for authenticating the photograph.²⁷

Yet an awareness of the constructed quality of the habitat diorama does not necessarily lead toward an awareness of the constructed quality of the cultural orders it represents. On the contrary, the political messaging of the habitat diorama acquires a special authority through the aesthetic experience it offers. The habitat diorama makes supratemporal claims to veracity, excluding any thematization of the cultural and historical conditionality or shaping of its image content. Evading visibility in the final display are not just the “morbid” and “violent aspects”²⁸ of the habitat diorama’s manufacturing process: also unrecognizable for the most part are the social norms, cultural orders and political claims to the control of space that it transmits. Within the reception process, aesthetic experience authenticates the ideological baggage of the image content. This functions most effectively when the display’s ideological baggage, or at least aspects of them, are already commonly accepted. The visual message becomes amalgamated with recollected and associated subtexts, as when a view of an animal skin evokes memories of and associations with other encounters with animals.

This summary is intended to show that the part of the study devoted to the ideological baggage of the habitat diorama and the one devoted to aesthetic experience should not be regarded as separate elements, but instead as interwoven with one another. In particular, a cognitive practice that involves bodily experience predestines the habitat diorama as a contributor to processes of identity formation. And it is precisely the reference to a specific habitat or the life environment, the recognition of familiar and established motifs and imaging practices that facilitates a mode of perception that integrates bodily experience. It is only when the aesthetic dimension of the habitat diorama is taken into consideration that the full power and significance of its political aspects come to light.

Forecast: The Habitat Diorama in the 21st Century

The historical conditionality of the habitat diorama, which emerges with clarity in this study, could conceivably make a close examination of this media appear anachronistic. And in fact, the time has long past when all of the habitat diorama’s strategies of communication and authentication could function unimpaired. Competing with this form of display are visualization media and their characteristic features, computer-generated

27 See “mechanical objectivity”, in Lorraine Daston and Peter Galison, *Objectivity*, 2007, pp. 115–190.

28 Voss 2017, p. 205.

virtual realities, for example. In Germany and many other Western industrial nations, nevertheless, habitat dioramas are still encountered in museums of natural history.²⁹ Presumably, this circumstance is partly due to the high cost involved in producing a diorama, and the considerable expense entailed by its removal. Moreover, some exhibition organizers and museum educators are still convinced of the effectiveness of the habitat diorama and its superiority in relation to other media of presentation in this specific context.³⁰ In 2011, for example, the animal geography displays in the Hessisches Landesmuseum in Darmstadt were given an elaborate restoration.³¹ And in 2012, New York's American Museum of Natural History invested in the comprehensive restoration of many of its habitat dioramas.³²

Given the current state of ecological crisis, museums of natural history are the focus of renewed attention today. Many such institutions are searching for new forms of presentation in order to visualize the urgency of environmental and climate protection. Berlin and Munich have initiated major investment programs for their museums, and a new natural history museum is currently in planning for Hamburg.³³ It appears questionable, however, whether the habitat diorama will continue to play a role in the context of the reorientation of museums of natural history in the 21st century. Today, we can still experience the efficacy of the habitat diorama. The bodily dimension of the reception experience and its personal and individual quality are well-suited to the visual habits and needs of the contemporary public. And just as around 1900, the objective of many natural history museums is to communicate with immediacy and without reliance on textual material.³⁴

29 Most of these scenarios date from the second half of the 20th century. Earlier dioramas – those in Frankfurt, for example – were destroyed in World War II, or could no longer be preserved and were hence dismantled.

30 See for example Scheersoi 2014.

31 Munsch et al. 2014, for further information on the Darmstadt dioramas see pp. 215–223.

32 Winter 2017, p. 104. See also <https://www.amnh.org/explore/news-blogs/on-exhibit-posts/restoring-iconic-dioramas-in-the-bernard-family-hall-of-north-american-mammals> (last accessed on 16 April 2024)

33 The Museum für Naturkunde in Berlin is to be modernized and expanded (see <https://www.museum-fuernaturkunde.berlin/de/zukunft/zukunftsplan>, last accessed on 16 April 2024 and https://www.museumfuernaturkunde.berlin/sites/default/files/mfn_zukunftsplan_digital.pdf, last accessed on 16 April 2024). A new museum of natural history is currently under construction in Munich; designed to replace the current Museum Mensch und Natur in Nymphenburg Palace, it has already inaugurated its “Biotopia Lab” (<https://www.biotopia.net/de/>, last accessed on 16 April 2024). In Hamburg, there are plans for a new museum of natural history, to be called the Evolutioneum (<https://leibniz-lib.de/neues-museum/> last accessed on 16 April 2024).

34 The research project “Model Learning with the Aid of Dioramas and VR and Other Experiential Spaces” was carried out in 2020–2023 at the Museum für Naturkunde in Berlin under the direction of Dr. Alexandra Moormann (<https://www.museumfuernaturkunde.berlin/de/wissenschaft/modelllernen-anhand-von-dioramen-vr-erlebnissen-und-anderen-erfahrungsraeumen>, last accessed on 16 April 2024).

Elsewhere, the habitat diorama seems anything else but contemporary: writing about habitat dioramas and animal taxidermy has made the shift in norms that has taken place in our society with regard to the relationship between humans and animals over the past hundred years abundantly evident. To an increasing degree, the practice of animal taxidermy has become negatively valued as a hegemonial act imposed on animals by humans. Far from appearing in private homes as status symbols, taxidermy animals have been banished for the most part from everyday contexts in recent decades, and are tolerated at most as study objects in school and museum collections. From a contemporary perspective it seems paradoxical that in the 19th century, habitat dioramas emblemized the recognition of the natural world and its appreciation, that their development was intimately intertwined with the tradition of nature conservation. In light of recent critiques of such exhibition practices grounded in concerns for the ethical treatment of animals, efforts by museums to use taxidermy animals to call attention to phenomena such as extinction or the disappearance of biodiversity have come to seem problematical.

It is not just the taxidermy animals but also the spatial configuration of the habitat diorama that testify to an anthropocentric perspective of nature, a paradigm that is being critically interrogated today in the cultural sciences. This is exemplified by the debate about the concept of the “Anthropocene”. Natural scientists have proposed using the concept to define a new epoch in the development of the earth, namely the one during which humanity represents the most important factor of influence for events on the planet, now that we have irreversibly altered the climate, bodies of water and the surface of the earth.³⁵ The Anthropocene designation assigns a central position to humanity and the human influence on nature, thereby emphasizing the drastic character of these transformations. Critics, however, regard this debate as perpetuating the narrative of humanity as the master of nature,³⁶ a narrative in whose context the habitat diorama first emerged.

35 Most theoretical discussions attribute the term to the Dutch meteorologist and atmospheric chemist Paul Crutzen (Paul J. Crutzen and Eugene F. Stoermer, “The ‘Anthropocene’”, in IGBP Global Change Newsletter, no. 41, May 2000, pp. 17–18; Paul J. Crutzen, “Geology of mankind”, in *Nature*, 415, 2002, 23; and W. Steffen, P.J. Crutzen, J.R. McNeill, “The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?”, in *Ambio*, 36, 2007, pp. 614–621). The term received approval as a new technical expression in geology in 2019 at an international congress (see Meera Subramanian, “Anthropocene Now: Influential Panel Votes to Recognize Earth’s New Epoch”, in *Nature*, May 2019, <https://www.nature.com/articles/d41586-019-01641-5>, last accessed on 16 April 2024). Ultimately, the term Anthropocene was not formally adopted: in 2024, it was rejected by an international panel of geologists (see Christian Schwägerl “Keine Epoche für die Menschheit”, in *Spektrum*, 6 March 2024, <https://www.spektrum.de/news/geologen-lehnen-neues-erdzeitalter-anthropozoen-ueberraschend-ab/2210153>, last accessed on 16 April 2024).

36 See Jürgen Manemann, *Kritik des Anthropozäns. Plädoyer für eine neue Humanökologie*, Bielefeld 2014, and *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism*, edited by Jason

In light of the concrete impact of the current ecological crisis on human existence, the presentation of nature as a “detached, physical, non-human, non-cultural, non-social Other”³⁷ – an accurate characterization of the image habitat dioramas are producing – no longer seems appropriate. If we are to adequately emphasize political demands for the protection of nature and the climate, it is imperative that we underscore the ubiquitous interwovenness and interdependency of nature. It remains unclear to what degree current discussions of animal ethics and a new conception of nature as a protagonist that is the equal of humanity is being integrated broadly into social practices, and what concrete implications this might have on image objects such as the habitat diorama.

The picture act of the habitat diorama represents an individual experience, and develops anew with every reception situation. Despite changes in the political environment, in social values and in conceptions concerning illusionistic imagery, and despite competition from photography, film and computer-generated virtual realities, the medium of the habitat diorama has survived up to the present as a visual dispositive in museums of natural history. It continues to function despite being bound up with its historical context, both thematically and in terms of media aesthetics. The material presence of the taxidermy animals, along with bodily perception and other aspects such as the highly detailed configuration of the image space, are still capable of engendering the impression of a direct encounter with an animal. The obstinacy of the medium and its capacity to evoke experiences of immediacy and presence has retained its potency up to the present.

Today, the collections of natural history museums still consist to a great extent of taxidermy specimens, and these institutions continue to operate taxidermy workshops, while habitat dioramas are still present in large numbers. A number of institutions have however begun substituting models for taxidermy animals.³⁸ At the same time, digital animations of animals are found with greater frequency in natural history exhibitions.³⁹ In terms of the aesthetics of reception, such objects transport a completely different message than a taxidermy animal – but in relation to animal ethics as well. It remains uncertain whether the use of plastic models and digital animations is merely

W. Moore, Oakland 2016. In order to avoid the term Anthropocene and the concept underlying it, Donna Haraway developed her theory of the “Chthulucene” (*Staying with the Trouble: Making Kin in the Chthulucene*, Durham 2016).

37 Gesing/Knecht/Flitner/Amelang 2019, p. 18

38 In March of 2020, a NDR report presented the “animal carver” Reiner Götsche, who – among other things – furnished Sea Life in Timmendorfer Strand with animal models. (<https://programm.ard.de/TV/Programm/Alle-Sender/?sendung=282262864998218>, last accessed on 25 April 2022).

39 At a special exhibition on the Eocene, on view from April 2021 until January 2022, the Zoologisches Museum in Hamburg showed a digital animation of a primeval horse.

a short-lived trend, or instead represents a long-term transformation of exhibition practices. And it remains to be seen what decisions the institutions will arrive at within the field of tension between materiality – a genuine museal quality – and digitalization, and which ethical standards will prevail when it comes to representations of nature. Against the background of the search for new forms of presentation in museums of natural history, scholarly analyses of the image media they employ and reflections on their associated political implications are of great significance. The present study demonstrates that “nature” cannot be deployed naïvely, and that habitat dioramas are not free of ideological baggage. This also holds true for contemporary images of nature. Exhibited in museums of natural history is not a pre-existing and immutable nature, but instead, and always, depictions of nature that are designed in specific ways.