THE 20TH HORST GERSON LECTURE

ART HISTORY AND PREHISTORIC ART

Rethinking their Relationship in the Light of New Observations



Horst Bredekamp

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Art History and Prehistoric Art: Rethinking their Relationship in the Light of New Observations

Translated by Mitch Cohen

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HORST GERSON LECTURES

1 ALBERTI'S DEFINITION OF THE PICTURE

How far back humanity goes in the past depends on the definition of what produces its characteristics. With a view to the artifacts produced by humans, Leon Battista Alberti gave a far-reaching definition in his book De Statua, according to which we can already speak of a "picture" (*simulacrum*) when a natural structure, for example a tangle of roots, that has a similarity to familiar forms is subjected to a minimum of human intervention.[1] This applies to naturalia that are collected because they inherently seem to display a semantic of their own, like the Chinese sandstone forms that possess the form of a flying cloud (Ill. 1).[2]

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1 Leon Battista Alberti, *De Statua. De Pictura. Elementa Picturae / Das Standbild. Die Malkunst. Grundlagen der Malerei,* ed. and transl. Oskar Bätschmann and Christoph Schäublin, Darmstadt 2000: De Statua, Par. 1, p. 142.

2 Laurie J. Monahan, Finessing the Found: 20th Century Encounters with the "Natural" Object, *Oriental Art* XLIV / 1 (1998), pp. 39-45.

Only a closer look makes it clear that this effect was achieved by means of subtle interventions, after which the structure was put on a pedestal as the perfect interplay between nature and art and to attest to a valence that can be described as latent pictorial activity.[3]

Alberti's definition of the picture has, first, a morphological component. Its concept of the picture, which is as broad as can be imagined, anticipates a definition of art history as a general pictorial history that includes every formed material. Around 1900 in Vienna and Hamburg, after a plethora of precursors and alongside contemporaries with similar ideas, Alois Riegl and Aby Warburg gave this assertion justification that remains sustainable today.[4] According to this tradition, no object is too lowly to be taken seriously as an object of a historicizing determination of form. This can range from clothing to the body's gestures and its body-schematic form of moving and thinking. The anti-dualistic connection between body, object and mind, based in this, stands in the context of an enactivistic philosophy of embodiment that aims at an environmental determination of consciousness.[5] In this context, the philosopher John Michael Krois and I pursued the project "Pictorial Act and Embodiment", in which a broad concept of the picture was applied in the certainty that shaped forms are in no way passive

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3 Horst Bredekamp, *Image Acts. A Systematic Approach to Visual Agency,* Berlin and Boston 2018, pp. 16-18.

4 Horst Bredekamp, A Neglected Tradition? Art History as Bildwissenschaft, *Critical Inquiry* 29 / 3 (2003), pp. 418-428.

5 *Philosophie der Verkörperung. Grundlagentexte zu einer aktuellen Debatte*, ed. Jörg Fingerhut et al., Berlin 2014; Jörg Fingerhut, Verkörperung, in: *23 Manifeste zu Bildakt und Verkörperung*, ed. Marion Lauschke and Pablo Schneider, Berlin and Boston 2018, pp. 183-190. Our approach can be seen within a wider framework shaped by authors such as Lambros Malafouris, *How Things Shape the Mind: A Theory of Material Engagement*, Cambridge 2013.

when experienced, but actively shape their own perception.[6]

This paradox was already effective at the beginning of all human formative power. It has to do with the determination of what characterizes the first humans. I have long taken part in these considerations, which have taken on an explosive power of their own in light of recent discoveries. The following elucidations contribute to them.[7]

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6 The initiation of the publication series "Actus et Imago" was made by the anthology: *Sehen und Handeln*, ed. Horst Bredekamp and John M. Krois, Actus et Imago. Berliner Schriften für Bildaktforschung und Verkörperungsphilosophie, vol. I, Berlin 2011. Programmatic among others was the volume: *Das Entgegenkommende Denken. Verstehen zwischen Form und Empfindung,* ed. Franz Engel and Sabine Marienberg, Actus et Imago. Berliner Schriften für Bildaktforschung und Verkörperungsphilosophie, vol. XV, Berlin 2015.

7 The following integrates several articles of mine: Der Muschelmensch. Vom endlosen Anfang der Bilder, in*: Transzendenzen des Realen. Mit Laudationes zu den Autoren von Wolfram Hogrebe, Günter Abel und Mathias Schmoeckel*, ed. Wolfram Hogrebe, Göttingen 2013, pp. 13-74; Höhlenausgänge, in: *ArteFakte: Wissen ist Kunst - Kunst ist Wissen. Reflexionen und Praktiken wissenschaftlich-künstlerischer Begegnungen*, ed. Hermann Parzinger et al., Bielefeld 2014, pp. 37-56; Prekäre Vorbilder: Fossilien, in: *VOR-BILDER. Ikonen der Kunstgeschichte. Vom Faustkeil über Botticellis Venus bis John Wayne*, eds. Sandra Abend and Hans Körner, Munich 2015, pp. 11-25; Der Faustkeil und die ikonische Differenz, in: *Das Entgegenkommende Denken,* 2015, pp. 105-118; Bildaktive Gestaltungsformen von Tier und Mensch, in: *+ultra. gestaltung schafft wissen*, ed. Nikola Doll et al. for the Cluster of Excellence Image Knowledge Gestaltung. An Interdisciplinary Laboratory of Humboldt University Berlin, exh. cat., Berlin and Leipzig 2016, pp. 17-25.

2 ART HISTORY AS GENERAL IMAGE HISTORY

The question of the origin of pictorial forming takes us back to the original designation of art history as an academic discipline, founded as part of the philosophical faculty at Berlin's Berliner Friedrich-Wilhelms-Universität in 1810.[8] The first-appointed professor, Aloys Hirt, postulated the concept of a universal history of art, which is mostly forgotten today.[9] Also almost forgotten for a long time as an art-historical proponent of universal history was Franz Kugler, a consultant with the Ministry of Culture and university professor.[10] In concordance with his comprehensive activity as an instructor, in his "Handbuch der Kunstgeschichte" (handbook of art history), published in 1842, he developed the notion of art as a possibility open to all peoples.[11] His concept extended from European art history and Islamic art through Roman and Greek Antiquity to the art of non-European communities. In the vertical temporal axis, Kugler's system began with prehistoric artifacts. As a matter of course that required no justification, he began his art history with intentionally hewn and collected stones, up to the monumental testimonies of Carnac and Stonehenge (Ill. 2).[12]

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8 Horst Bredekamp and Adam Labuda, Kunstgeschichte, Universität, Museum und die Mitte Berlins 1810-1873, in: *Geschichte der Universität Unter den Linden 1810-2010*, ed. Heinz-Elmar Tenorth, vol. 4, Genese der Disziplinen. Die Konstitution der Universität, Berlin 2010, pp. 237-263, in particular pp. 242f.

9 Bredekamp and Labuda, 2010, pp. 245-247.

10 Horst Bredekamp, Franz Kugler and the Concept of World Art History, in: *Cultural Histories of the Material World,* ed. Peter N. Miller, Ann Arbor 2013, pp. 249-262.

11 Franz Theodor Kugler, *Handbuch der Kunstgeschichte*, Berlin 1842.

12 Ernst Guhl and Caspar Joseph, *Denkmäler der Kunst,* vol. I, Stuttgart 1851, plate I.

Because Kugler's art history embraced the entire realm from earliest times to his own epoch, his "handbook" proved to be a universal human history of the artifact.[13] With this orientation, the Neues Museum was erected in 1855 on Museum Island in Berlin as a universal museum that included all of human history (Ill. 3). While works from non-European art history were presented in the southwestern part of the ground floor, the opposite side exhibited objects from the Stone, Bronze, and Iron Ages.[14] This museum thereby connected a horizontal axis with a vertical one reaching deep into prehistory.

The discovery of the Altamira cave paintings in 1879 could have reinforced this concept. And in fact, these works were located within the history of art after initial doubts about their authenticity were dispelled. But the opportunity to sustain art history and its methods in the framework created by Kugler was squandered. The reason for this did not lie in the wealth and heterogeneity of the works, but in the methodologically based resistance to their interpretation as pictorial magic. Arrows appeared in the bodies of powerful animals like the bison of Lascaux (Ill. 4), suggesting a hunt, making the belief in magical effects at a distance seem evident. But with this, the boundary that had been drawn between ethnology and art history was crossed. While all forms of pictorial magic were allotted to ethnology, art history accepted only supposedly unmagical forms. Suspected of action at a distance, prehistoric art fell out of the possible canon

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13 Henrik Karge, Franz Kugler and Carl Schnaase - Zwei Projekte zur Etablierung der "Allgemeinen Kunstgeschichte", in: *Franz Theodor Kugler. Deutscher Kunsthistoriker und Berliner Dichter*, ed. Michel Espagne et al., Berlin 2010, pp. 83-104.

14 Horst Bredekamp, Der lange Atem der Kunstkammer: Das Neue Museum als Avantgarde der Vorvergangenheit, in: *Museale Spezialisierung und Nationalisierung ab 1830. Das Neue Museum in Berlin im internationalen Kontext*, ed. Ellinoor Bergvelt et al., Berliner Schriftenreihe zur Museumsforschung, vol. 29, Berlin 2011, pp. 25-36.

of a comprehensive art history.[15] Only outsiders like Max Raphael kept Kugler's tradition alive,[16] and it is only recently that this endeavor is taken up in a most fruitful way.[17]

15 Fundamental on this process: Ulrich Pfisterer, Altamira - oder: Die Anfänge von Kunst und Kunstwissenschaft, in: *Vorträge aus dem Warburg-Haus*, vol. 10, Berlin 2007, pp. 13-80.

16 His deliberations on the art of cave painting from the year 1945 have been reprinted under the title "The Hand on the Wall" (Max Raphael, *Die Hand an der Wand. Vorgestellt von Gernot Grube*, Zürich and Berlin 2013).

17 See for example: John Onians, Neuroarchaeology and the Origins of Representation in the Grotte de Chauvet: a Neural Approach to Archaeology. In: *Image and Imagination: a Global Prehistory of Figurative Representation*. ed. Colin Refrew and Iain Morley, Cambridge 2007, pp. 307-320 and by the same author: *European Art: a neuroarthistory*, New Haven and London 2016, especially pp. 18-44; See also: Whitney Davis, *A General Theory of Visual Culture*, Princeton 2010.

3 ETERNAL MODERNISM

As the exhibition "Préhistoire. Une énigme moderne", presented from May to September 2019 in the Centre Pompidou, comprehensively showed, the fascination the cave paintings exerted on Europe's avant-garde was all the greater.[18] Artists like Otto Dix, whose "Pregnant Woman" (Ill. 5) from 1919 was inspired by prehistoric Venus statuettes (Ill. 6), showed themselves impressed, if not obsessed, by the art of prehistory and early history as precursors of their own activity.[19] The list of artists invoking this early art could be lengthened almost at will: from Jean Arp, Pablo Picasso, Joan Miró, Max Ernst, Alberto Giacometti, and Henri Michaux through Lucio Fontana, Jean Dubuffet, and Henry Moore, to Louise Bourgeois, Joseph Beuys, Richard Long, and Michael Heizer.[20] While art history sequestered itself from prehistoric and early art, the approaches of the artistic avant-garde radicalized their access to the thesis of an eternal contemporaneity of the art of all times and all peoples.[21]

The Frankfurt ethnologist Leo Frobenius developed this bracketing time together into an extremely influential image of history. In 1946, the Museum of Modern Art in New York exhibited his photos of rock paintings; the title left no doubt of the model of history he unfolded: "Modern Art 5,000 Years Ago".[22] The exhibition shown

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18 *Préhistoire. Une énigme moderne*, ed. Cécile Debray et al., exh. cat., Paris 2019.

19 Rainer Beck, *Otto Dix. Die kosmischen Bilder. Zwischen Sehnsucht und Schwangerem Weib*, Dresden 2003, p. 122f.

20 Countless examples have been gathered in the Parisian exhibition of 2019 (*Préhistoire*, 2019). See also the special number of the Cahiers du Mnam edited by Maria Stavrinaki: *Les Cahiers du Mnam* 126 (2013/2014).

21 Numerous examples can be found in: Walter Grasskamp, *Ist die Moderne eine Epoche?*, München 2002, pp. 25-41.

22 Brochure for the exhibition "Modern Art 5,000 years ago...Modern Art Yesterday...and Modern Art TODAY", New York 1946, n.p.

two years later in London, "40,000 Years of Modern Art" extended the prehistoric reference point eightfold.[23] This extended Modern Art's reference to prehistoric art once again. Strictly speaking, there was only one kind of art, Modernism, and this was valid for a period of 40,000 years.

The finds in recent decades of small sculptures in the Swabian Jura in Germany's *Land* of Baden-Württemberg, some of which go back up to 45,000 years, support this construction of an eternal Modernism.[24] In their fully plastic three-dimensionality, we recognize a stupendous mixture of mimesis and abstraction. In the course of excavations in the cave of Hohle Fels, a 6-cm ivory statuette was found (Ill. 7) that is about 35,000 years old – i.e., ca. 5,000 years older than the oldest figurine previously known, the Venus of Willendorf.[25] The front side of the figure from the Swabian Jura shows two huge, protruding breasts, beneath which the two hands with their fingers are incised. Between the two stump-like legs, a pubic triangle and a deeply grooved vulva are equally clearly present. In place of the head, a small eyelet rises, with which the figure could be used as a pendant, so that the head of the person wearing it would complete the figurine.[26]

The majority of these figures up to 45,000 years old from this oldest known sculptors' school are of animals.

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23 *40.000 Years of Modern Art*, ed. W. G. Archer and Robert Melville, ex. cat., London 1948.

24 The first comprehensive account on it was given by Joachim Hahn, *Kraft und Aggression. Die Botschaft der Eiszeitkunst im Aurignacien Süddeutschlands?*, Tübingen 1986. In 2009 an exhibition in Stuttgart awoke broad public interest: *Eiszeit. Kunst und Kultur*, ed. Martina Barth et al., exh. cat., Ostfildern (Ruit) 2009. A splendid interpretation on the basis of most recent research was published in 2015: Sibylle Wolf, *Schmuckstücke. Die Elfenbeinbearbeitung im Schwäbischen Aurignacien*, Tübingen 2015.

25 Luc Moreau, Die Zeit der starken Frauen. Das Gravettien, in: *Eiszeit. Kunst und Kultur,* 2009, p. 97.

26 Nicholas J. Conard, Die erste Venus, in: *Eiszeit. Kunst und Kultur,* 2009, pp. 268-271. Cf. Wolf, 2015, p. 284-286.

Their artistic quality supports the assumption that they were the products of "art centers or ivory carver schools".[27] The idea that the small sculptures could have served as models for larger plastic figures made of clay or limestone[28] corresponds to their change of scale. Thus, the hollow of a fist is not very large, but it is not possible to see that it is holding something, because the object is formed in miniature (Ill. 8). When the fist opens, the format of the tiny mammoth, miniaturized in its own tusk (Ill. 9), is astonishing. With its raised back, its head bowed forward, and the outstretched front legs, the mammoth reveals a veritable tension, and at least in it, the change of scale is tied to an intuitively applied statics (Ill. 10).[29] The center of gravity lies in a supported part of the body, and the four legs are coordinated in such a way that they can underpin the freestanding body. This is obviously a special case, because the horizontal direction does not generally belong to the orientation dimensions of these figures.[30] From their own framework, these small forms are able to create an astonishing world of artifacts. Despite their huge temporal distance, they make us think of jewelry and apprentices' pieces whose forms seem absolutely modern.[31]

The cave paintings also give the impression of modernity, especially those discovered in December 1994 in the 8,000-m^2 cave of Chauvet in the Ardèche River Valley in southern France (Ill. 11). More than 400 pictures are painted on its walls; between 32,000 and 35,000 years old, they exceed all previous estimates regarding

27 Gustav Riek, *Die Eiszeitjägerstation am Vogelherd im Lonetal*, Vol. 1, Die Kulturen, Tübingen 1934, p. 299; For a contrasting opinion, see Hahn, 1986, p. 47, who points to the plethora of this sort of centers, that have been uncovered to date. Yet, this is not necessarily a contradiction, as this plenty might as well be viewed in favor of Riek's proposition.

28 Riek, 1934, pp. 297-298.

29 *Eiszeit. Kunst und Kultur,* 2009, p. 262.

30 Hahn, 1986, p. 162.

31 Rieck, 1934, p. 299.

painting of this quality (Ill. 12). Werner Herzog's 2011 reflections on these paintings have given impressive form to the approach of seeing in them an early history of Modernism. His film about Chauvet is suffused with a seriousness of sublimity that overcomes the film people when, in one step, they go back millennia and are confronted with their own artistic activity as if in a deep historical canyon. With their breadth of up to 12 m, the paintings indeed resemble the surface of a cinema screen. One of the most impressive moments of the film is the demonstration that paintings like those of the wild horses referred to each other across immense spans of time, as if each of them possessed a presence of everlasting currency (Ill. 13). Older works became patterns for a new investment even after millennia. This technique, which says something about the esteem for already executed paintings, displays in an inimitable manner a diachrony of pictorial art in which each picture and each artifact is inscribed in a living continuum.

How the wall was covered over huge periods was reconstructed step by step in the sense of Alberti's definition of the picture (Ill. 14). The painters initially responded to the traces left by a cave bear scratching the wall to sharpen its claws; then, an ever more complex composition arose in whose ambience the four horses also found their place. "It is impossible not to see in this the fruit of an artistic approach in the most contemporary sense of the term," conclude members of the research team.[32]
In his film, Herzog repeatedly shows sequences of "snapshots" lined up beside each other as early anticipations of Futurism's pictures of motion (Ill. 15). Their motifs are approached in the pictures of horses in which Franz Marc saw spirituality incarnated in the world of

32 Carole Fritz and Gilles Tosello, in: *Chauvet Cave. The Art of Earliest Times,* directed by Jean Clottes, Salt Lake City 2003, p. 116.

post-diluvial horses (Ill. 16).[33] In the face of the latency of motion in these "snapshots", the shaken film director acknowledges that his equals were at work tens of thousands of years ago.

This pattern of interpretation is continued to this day. The walls of the magnificent 2009 exhibition in Stuttgart "Ice Age – Art and Culture" were covered with the statements of modern artists; and the exhibition "Ice Age Art" that created a sensation in London in 2013 juxtaposed sculptures mostly from the Swabian Jura and works of Modern Art, without identifying the difference.[34]

The connection made here between early history and modernity hypostatizes the visual world culture of a moderate abstraction. It takes up ideas expressed around 1900, especially with a view to ornament.[35] Mocking all rules of scientific historicization, but unbeatable as a legitimizing basis for the recent past and as a conciliatory answer to the conflicts of globalization, this plausible and anachronistic narrative proves to be an astonishing success story.

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33 Andreas Hüneke, *Franz Marc. Tierschicksale. Kunst als Heilsgeschichte,* Frankfurt a.M. 1994, pp. 58-61.

34 Jill Cook, *Ice Age art: arrival of the modern mind,* exh. cat., London 2013.

35 Susanne Leeb, *Die Kunst der Anderen. "Weltkunst" und die anthropologische Konfiguration der Moderne,* Berlin 2015.

4 SEMANTIC SCRATCHES

This "grand narrative" of an eternal Modernism fueled by the most recent discoveries initially refers to those cultures that have to do with the early history of Homo sapiens and his spread around the world. The determination of what characterized the modern human pushes like a milling machine through walls that until now defined the temporal and geographic boundary of humanity.

Among the group of figures from the Swabian Jura is the sculpture of a mammoth whose plastic modeling emphasizes the massive body by means of bulges on the surface, under which the shoulder blades and the hips are both visible (Ill. 17). Spectacular are – and this adds a completely new component – the rows of X-shaped or Andreas-cross-shaped scratches covering the back and belly.[36] Similar signs are found on the head of a cave lion sculpture found in Vogelherd, which oscillates wonderfully between individual characterization and abstraction (Ill. 18). Similar scratches can be recognized at the base of its neck.[37]

Such figures are able to adjust our image of the early history of sculpture so lastingly that they provoke a veritable revision of our image of humanity's development. Clearly these are independent forms reminiscent of script that point to the fact that, as Wilhelm von Humboldt formulated it in one of his most magnificent texts, the development of language cannot have succeeded solely based on sound.[38] Rather, the formation of language goes hand in hand with the externalized

36 *Eiszeit. Kunst und Kultur,* 2009, p. 249.

37 Hahn, 1986, pp. 106-109.

38 Wilhelm von Humboldt, Das bildende Organ der Gedanken, in: *Wilhelm von Humboldt. Das große Lesebuch,* ed. Jürgen Trabant, Frankfurt am Main 2010, pp. 193-218, in particular p. 204.

use of *graphemes*. From the beginning, language is both sound and shaping.[39] An echo of this prehistoric event could lie in the double sense of the Greek verb *graphein*, which means writing, but also drawing and painting.[40]

About 300 km east of Cape Town, a seaside cave containing traces of intelligent shaping has been investigated since 1991; the finds pushed the beginning of such figures twice as far back as previously thought.[41] For the last 80,000 years, Blombos Cave has harbored intentionally perforated seashells and intentionally painted and scratched stones that doubtless possess a semantic, though so far it has not been possible to decipher it (Ill. 19). A similarly scratched bone, more than 400,000 years old, was found in Bilzingsleben in Central Germany, pushing art's origins back five times as far in prehistory (Ill. 20).[42] Finally, distinct scratchings were proven in seashells and other items from Java that date back about 500,000 years. Of particular interest were lines scored as if with a ruler, probably with the aid of a shark tooth. In one example, they formed a structure

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39 Cf. Jürgen Trabant, Language and Image as Gesture and Articulation, in: *Symbolic Articulation. Image, Word, and Body between Action and Schema*, ed. Sabine Marienberg, Berlin 2017, pp. 47-69 and in the same volume Alva Noë, The Writerly Attitude, p. 73-87.

40 Jacques Jouanna, Graphein "écrire" et "peindre". Contribution à l'histoire des mots et à l'histoire de l'imaginaire de la mémoire en Grèce ancienne, in: *La littérature et les arts figurés de l'Antiquité a nos jours. Actes du XIVe Congrès de l'Association Guillaume Budé, Limoges, 25 - 28 août 1998,* Paris 2001, pp. 55-70.

41 Christopher Henshilwood, *Holocene Prehistory of the Southern Cape, South Africa. Excavations at Blombos Cave and the Blombosfontein Nature Reserve,* Oxford 2008, pp. 47f.; Christopher Henshilwood et al., Engraved ochres from the Middle Stone Age levels at Blombos Cave, South Africa, *Journal of Human Evolution* 57 (2009), pp. 27-47, in particular pp. 32-34.

42 K. Schößler, Versuch zur Deutung des Strichmusters auf dem Knochenartefakt Bilzingsleben Nr. 208, 33 - Mondkalender ? -, in: *Praehistorica Thuringica* (2003), vol. 9, p. 29-34. Cf. Hartmut Thieme, Der grosse Wurf von Schöningen: Das neue Bild zur Kultur des frühen Menschen, in: *Die Schöninger Speere. Mensch und Jagd vor 400.000 Jahren,* ed. Hartmut Thieme, exh. cat., Stuttgart 2007, pp. 224-228, in particular p. 227f.

recalling an N and, more clearly visible, an M; of course, we should not think they have anything to do with the Latin alphabet (Ill. 21).[43] About half a million years ago, in various places around the world, clearly form-related figures were created that present an as yet not interpretable but clearly existing semantic.

43 Josephine C. A. Joordens et al., Homo erectus at Trinil on Java used shells for tool production and engraving, *Nature* 518 (2014), pp. 228-231 (doi: 10.1038/nature13962).

5 THE MOST RECENT INTRIGUING DISCOVERIES

Along with the channels into prehistory provided by figurative art, iconic stone artifacts also take us to the image of a symbolically charged early human history; and with this step, we reach once more the level that Franz Kugler's "Handbook of Art History" had already attained. This is the field in which what may be the most spectacular movements have taken place.

Through recent publications, this development has destabilized the great narrative of the history of the expansion of "modern" humanity. The dominant teaching is that the highly intelligent species of modern humans originated in Africa. This doctrine is particularly tied to what is called the Levallois technique, which denies that a stone was chipped away until it could be used as a tool in favor of the idea that an underlying stone "anvil" was chipped with targeted blows to produce pieces with sharp edges that could be used as tools and weapons (Ill. 22). Each blow aimed at an invisible horizon that defined in imagination the conditions of the results. This was a kind of shaping that presupposed that the toolmaker was very able to imagine the spatial structure of the stone. This technique requiring deep knowledge of stone structure is thought to have been invented 200,000 to 300,000 years ago.[44]

But it remains inexplicable why this technique was widespread at the same time among the Neanderthals, although until now it has been presumed that Homo sapiens did not leave Africa until about 100,000 years ago to spread across the world, thereby displacing, exterminating, or integratingly absorbing related human species

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44 Jürgen Richter, Das Levallois-Konzept, in: *Steinartefakte vom Altpaläolithikum bis in die Neuzeit*, ed. Harald Floss, Tübingen 2012, pp. 222-236.

like the Neanderthals. In the fall of 2018, "Nature" magazine published an article about artifacts found in Guanyindong Cave in southern China that were produced by the Levallois technique (Ill. 23). 160,000 to 170,000 years old. They collide with the assumption that Homo sapiens did not settle in this region until 40,000 years ago.[45]

The problem emerging here was underscored by an article in "Nature", published in July 2019, about traces of "modern" humans in southern Greece that appear to be up to 210,000 years old.[46] Manifestly, early populations of Homo sapiens lived in this region long before the period previously assumed; they came into contact with Neanderthals, as genetic analysis has confirmed in general.[47] Only much later did a second wave of globally expanding Homo sapiens settle here.

In a corresponding movement, Neanderthals have mostly lost their earlier characterization as a species of human with inferior intelligence.[48] The evidence that Neanderthals were just as symbolically active as Homo sapiens is simply too diverse for that idea. Approximately 300,000-year-old spears were discovered near Schöningen in Lower Saxony that have such perfect ballistic construction that they could be thrown

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45 Bo Li et al., Late Middle Pleistocene Levallois stone-tool technology in Southwest China, *Nature* 565 (2018), pp. 82-85 (doi:10.1038/s41586-018-0710-1).

46 Katerina Harvati, Carolin Röding et al., Apidima Cave fossils provide earliest evidence of Homo sapiens in Eurasia, *Nature* 571 (2019), pp. 500-504 (doi:10.1038/s41586-019-1376-z).

47 C. Posth et al., Deeply divergent archaic mitochondrial genome provides lower time boundary for African gene flow into Neanderthals, *Nature Communications* 8 (2017), article no. 16046, n. p.

48 Joao Zilhao, The emergence of language, art and symbolic thinking, in: *Homo Symbolicus. The dawn of language, imagination and spirituality*, ed. Christopher S. Henshilwood and Francesco d'Errico, Amsterdam and Philadelphia 2011, pp. 111-131.

accurately up to twenty meters.[49] We now also have knowledge of the Neanderthals' burial symbolism.[50] In 2016, the more than 175,000-year-old rings of stalagmites in the cave of Bruniquel (Ill. 24), which indubitably interplayed with the warmth and light of fire,[51] created as great a sensation as the evidence, published in February 2018, of 60,000-year-old cave paintings in Spain.[52] All of this was as if genetically caught up to via DNA analyses.[53]

That the starting points and localizations of what defines the origin of humanity and where the process of human development took place are changing at a breathtaking pace was also documented in an article published in "Nature" in July 2018. It presented artifacts from Shangchen, a village in China's Shaanxi province, the oldest of which are estimated to have been produced 2.1 million years ago (Ill. 25).[54] These are stone

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49 Hartmut Thieme, Der grosse Wurf von Schöningen: Das neue Bild zur Kultur des frühen Menschen, in: *Die Schöninger Speere. Mensch und Jagd vor 400.000 Jahren*, ed. Hartmut Thieme, exh. cat., Stuttgart 2007, pp. 224-228. Cf. Annemieke Milks et al., External ballistics of Pleistocene hand-thrown spears: experimental performance data and implications for human evolution, *Scientific Reports* 820 /9 (2019), n.p. (doi:10.1038/s41598-018-37904-w).

50 Eudald Carbonell and Marina Mosquera, The emergence of a symbolic behaviour: the sepulchral pit of Sima de los Huescos, Sierra de Atapuerca, Burgos, Spain, *Comptes Rendus Palevol* 5 (2006), pp. 155-160 (doi10.1016/j.crpv.2005.11.010).

51 Jacques Jaubert et al., Early Neanderthal constructions deep in Bruniquel Cave in southwestern France, *Nature* 534 (2016), pp. 111-114 (doi:10.1038/nature1829).

52 D. L. Hoffmann et al., U-Th dating of carbonate crusts reveals Neanderthal origin of Iberian cave art, *Science* (2018), vol. 359, article number 6378, pp. 912-915; Cf. the critique of the dating by Maxime Maxime et al., Early dates for Neanderthal cave art may be wrong, *Journal of Human Evolution* 125 (2018), pp. 215-217.

53 Aylwyn Scally and Ricard Durbin, Revising the human mutation rate: implications for understanding human evolution, *Nature Reviews/Genetics* 13 (2012), pp. 745-753.

54 Zhaoyu Zhu et al., Hominin occupation of the Chinese Loess Plateau since about 2.1. million years ago, *Nature* 559 (2018), pp. 608-612 (https://doi.org/10.1038/s41586-018-0299-4).

tools straightened and made to fit the form of the hand and suitable for scraping, cutting, and drilling.[55] If these finds' dating is accurate, then the idea, long considered settled, that humanity spread across the globe in repeated waves from Africa is tottering, because the oldest fossils from the African continent are about 200,000 years younger than the Shangchen finds.

All these discoveries agree in indicating that the presence of Homo sapiens came much earlier and above all regionally more expansively than asserted by the "Out of Africa" theory that has dominated until now. No less spectacular is that comparable achievements in technology and symbol formation can be attributed to the Neanderthals. And finally, the finds in Asia raise the question whether the "Out of Africa" theory may suffer the same fate as the theory that European culture derives solely from Greek origins. In no way can we assume a single path to the human beings living today, but rather diverse paths of "cave exits", to use Hans Blumenberg's formulation.[56] There was not just one Homo sapiens, but classes of Homines sapientes that were not different species, but different ways of early representation of what we are. What Johann Gottfried Herder criticized about Johann Joachim Winckelmann's fixation on Greece, which underestimated existing mutual interactions from the beginning,[57] could repeat itself on a global scale in relation to the fixation on Africa as humanity's continent of origin.

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55 Op. cit., fig. 4.

56 Hans Blumenberg, *Höhlenausgänge*, Frankfurt a. M. 1996, p. 26; cf. also p. 35-37.

57 Johann Gottfried Herder, *Kritische Wälder. Erstes bis Viertes Wäldchen. Paralipomena* (= *Ausgewählte Werke in Einzelausgaben. Schriften zur Literatur* 2/1), ed. Regine Otto, Berlin and Weimar 1990, p. 654.

6 THE HAND AXE AS A SYMBOLIC FORM

In this broadly opened geographic and temporal realm of humanoid artifact production, the hand axe takes up the largest time span with the most decisive kind of shaping. It is like the backbone of the processes by which, through externalized shaping, hominids could unfold their self-reflection and develop their abilities. This is the core of the panorama that I am trying to sketch as a new determination of the relationship among anthropology, early and prehistory, and art history.

As an artifact appearing in Africa, Europe, and Asia over the gigantic span of between about two million and 40,000 years before our time, the hand axe with its sharp edges was used as a tool, but was no less striking for the sovereignty of its beautiful stereometric forms, as the 1.8-million-year-old example from the shore of Lake Turkana in Kenya shows (Ill. 26).[58]

When, in the first half of the 19th century, new finds everywhere fueled interest in prehistoric antiquities, these structures were considered evidence that human beings were artists from the beginning, even before all their technological abilities. This understanding was lost in the further course of the 19th century, which was fixated on function. But now it has returned as an essential interpretive approach.[59]

In his book "Man the Toolmaker", first published in 1949, Kenneth P. Oakley found the famous formulation for human beings as the "tool-using animal". According to Oakley, the hand axe marked the boundary between

58 J. Christopher Lepre et al., An earlier origin for the Acheulian, *Nature* 477 (2011), pp. 82-85.

59 This interpretation arguably reached its peak in Gottfried Semper, *Der Stil*, 2 vols., Frankfurt am Main and Munich 1860-1863.

animal and human; and the world of modern machines was not a qualitative, but solely a quantitative advance over the production of hand axes.[60]

But this statement did not mean that Homo sapiens had stood the test solely as an outstanding functional animal; rather, from the beginning, there has been an interplay between utility and semantic.[61] The handbook "Steinartefakte" (stone artifacts) reads downright emphatically: "It is indisputable that an effort for aesthetics is immanent in these pieces. The functional dimension probably includes a spiritual one, to the degree that the producer shapes the material in the direction of what he regards as the necessary ideal form, which offers no advantage in functional terms."[62]

The most convincing interpretation of the hand axe's concrete iconography sees its external form as an abstraction of the human hand (Ill. 27).[63] With the aid of the processed stone, a "third hand" in objectified form could be drawn out from its creator and user.[64] This probably contributed to the phenomenon that many hand axes were clearly slightly asymmetrically produced, as if to make use of the principle of an enlivening tension.[65]

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60 Kenneth P. Oakley, *Man the Toolmaker*, London 1972, pp. 90f. Cf. Victor Comment, Contribution à l'étude des silex taillés de Saint-Acheul et de Montières, *Bulletin de la Société Linée du Nord de la France* 36 (1907), pp. 345-369.

61 Miriam Noë Haidle, *How to think Tools? A comparison of cognitive aspects in tool behaviour of animals and during human evolution*, Tübingen 2006, p. 267-27 and passim (urn:nbn:de:bsz:21-opus-60146).

62 Jean-Marie Le Tensorer, Faustkeile, in: *Steinartefakte vom Altpaläolithikum bis in die Neuzeit*, ed. Harald Floss, Tübingen 2012, pp. 209-218, in particular p. 215.

63 Robert Rudolf Schmidt, *Der Geist der Vorzeit*, Berlin 1934, p. 100.

64 Kenneth P. Oakley, Emergence of higher thought 3.0-0.2 Ma B.P., *Philosophical Transactions of the Royal Society of London*, *Series B. Biological Sciences* 292 / 1057 (1981), pp. 205-211, in particular p. 207, with reference to Schmidt, 1934, p. 100.

65 Michel Lorblanchet has analysed this principle using the example of the interplay of convex and concave outlines; see: id., *La Naissance de l'Art. Genèse de l'art préhistorique*, Paris 1999, pp. 125-130.

An especially impressive example from Syria displays this ability through its axis, which is shifted to the left and upward (Ill. 28).[66] All these elements of form make it seem too simple, if not nonsensical, to tie the hand axe solely to its function. Numerous examples were too small to be used as tools, and many were functional without ever being used.[67] Use and appearance cannot be separated in any stage of their development. The schooling of the creation of form and the use of the hand axe is obviously inscribed in the structures of intelligence, based on form and motoric activity during the Old Stone Age.

The biologist Gerhard Neuweiler – tellingly, together with the virtuoso of the interplay between hand and brain, the musician and composer György Ligeti – has presented a convincing model of this process.[68] In a treatment that has gained fame, the American philosopher Nicholas Rescher has emphasized in a related sense the "amphibious" status of human beings between experienced reality and imagination.[69] This double character can be transposed to the poles of use and aesthetics, tool and semantic. The two components were never separated, but united from the beginning; they evolved together. This is the fundamental lesson to be drawn from the material of early history.

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66 Op. cit., 1999, p. 141.

67 M.-H. Moncel et al., Non-utilitarian Lithic Objects from the European Paleolithic, *Archeology, Ethnology & Anthropology of Eurasia* 40 / 1 (2012), pp. 24-40.

68 Gerhard Neuweiler and György Ligeti, *Motorische Intelligenz: Zwischen Musik und Naturwissenschaft*, Berlin 2007.

69 Nicholas Rescher, Amphibious man, *European Review* 10 / 3 (2002), pp. 339-344.

7 THE INCLUSION OF FOSSILS AND CONCEPTUAL THINKING

Part of design and shaping is the ability to produce a sense for difference and appreciation through comparison. But differentiation is the basis of every conscious creation of order and of every taking distance. This thinking in "iconic differences", to use Gottfried Boehm's formulation, has been underscored by a series of finds.[70] They have to do with the way that fossils were integrated in the front side of hand axes, and this is a relatively sharply bounded field.

Regarding these inclusions, each case must be studied individually to decide whether the fossil was recognized in its inherent value and exhibited, or if chance played a role. A striking example is one of the quartzite polyhedrons that appear in the Old and Middle Stone Age alongside the hand axe and the cleaver, probably with the function of a scraper. The Middle Stone Age example from the crater cone in the eastern Eifel region impresses, first, with the finesse with which the sides of this stone were straightened (Ill. 29).[71] One of the surfaces displays the fossil of a heart-shaped shell. It could be objected that we cannot assume this really was intentionally emphasized, because the shell is situated eccentrically on this surface. But the drawing of the artifact makes it clear that above and to the right of this

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70 Gottfried Boehm, Die Wiederkehr der Bilder, in: *Was ist ein Bild?*, ed. idem, Munich 1994, pp. 11-38, in particular p. 30; see also id., *Wie Bilder Sinn erzeugen. Die Macht des Zeigens*, Berlin 2007, pp. 34-38.

71 Joachim Schäfer, *Der altsteinzeitliche Fundplatz auf dem Vulkan Schweinskopf-Karmelenberg*, Phil. Diss., Cologne 1990, Ill. 43, 2, plate 37, p. 81, pp. 129f.; id., Un gisement préhistorique de la fin du pléistocène moyen. Schweinskopf-Karmelenberg, en Rhénanie moyenne, in: *La vie préhistorique*, Dijon 1996, pp. 42-47. Cf. Gerhard Bosinski, *Urgeschichte am Rhein*, Tübingen 2008, p. 142.

shell there was probably no stone material that would have made it possible to move it closer to the middle (Ill. 30).[72] All the more astonishing is the care with which the right side of the shell was preserved, although the surface on which it sits would otherwise have required straightening. What on first glance could be regarded as a chance position turns out on closer examination to demonstrate particularly fine efforts to preserve the intactness of this special form.

As this first example shows, fossils were also emphasized in hand axes. Another example shows a large fossil seashell pointing toward the center of the stone (Ill. 31).[73] Around its head, which comes to a point on the left, a strip has been left as if out of respect, while on the side of the shell's broadly fanned ribbing, a smaller band was left, no less regular. Turning the stone into a hand axe would have required chipping off the left-hand side, but this was not done. The artifact's task was apparently not to be used as a tool, but to be collected and seen. The fossil's natural picture may thus have been given a frame, to bring it into position in relation to the surrounding margin.

An especially remarkable example of these forms of shaping is offered by a ca. 400,000-year-old hand axe from Swanscombe in England (Ill. 32).[74] It is rather expansive in its belly portion, and on the right-hand side it shows an unusual bulge. At its bottom are two protruding humps that seem like two feet, and in the middle is the fossil of a sea urchin. All around the circular fossil, the stone recedes, so that the sea urchin is as if

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72 Joachim Schäfer, Die Wertschätzung außergewöhnlicher Gegenstände (non-utilitarian objects) im Alt- und Mittelpaläolithikum, *Ethnographisch-Archäologische Zeitschrift* 36 (1996), pp. 173-190, in particular p. 181.

73 Lorblanchet, 1999, Ill. 82, p. 91.

74 Id., p. 89, Ill. p. 90; cf. Oakley, 1981, p. 209, fig. 3 and Kenneth J. McNamara, *The Star-Crossed Stone. The Secret Life Myths, and History of a Fascinating Fossil*, Chicago and London 2011, pp. 22-24.

presented on a pedestal (Ill. 33).[75] As this lateral photo shows, very probably this was how the stone appeared when the prehistoric artisan found it. On the left-hand side, he tried to remove the stone that protruded above the fossil, in this way achieving a regular accentuation of the ornamented round.

This is clearly recognizable to the left above the middle, precisely where the point of a percussive tool was placed, where the round extends (Ill. 34). Here, a part of the sea urchin circle has chipped off, probably losing the left-hand segment of the circle with this blow, but in the entire lower left area, the artisan tried to work in depth along the edge of the circle. Overall, the circular outline of the fossil animal remains, so that the central positioning of the sea urchin can be interpolated in its full circle. Here it becomes clear why the ability to accept form as an autonomous dimension bound to the principle of iconic difference can be acknowledged as a component of the humanoids becoming human. The creator is constrained to accept the conditions of forming.

75 Oakley, 1985, p. 104, pl. IV, b.

8 THE IMPETUS OF THE FORM

The question of the degree to which we can speak of "art" in relation to such forms of shaping remains open. In a visionary thrust more than twenty years ago, the founder of the Center for Art and Media in Karlsruhe, Heinrich Klotz, pleaded decisively to apply the term "art" to early historical and prehistoric artifacts: "Even if the functional aesthetic of Modernism does not permit the recognition of all shaped form and its generalization leads to dogmatism, the term can still be applied to the first object produced by humans. The artificiality of the hand axe is also art and its functionality is also beauty."[76] One of the outstanding specialists, Harald Floss, recently warned against seeing the hand axe as an early form of art. The recognition that Homo erectus and the Neanderthals possessed advanced intellectual abilities is a "sensational" result of recent anthropology, he says; but the "enthusiasm for this recognition must not entice us to assume that such objects should already be recognized as precursors of art or even as art itself."[77]

The skepticism expressed here could be met on the level of terminology by introducing a neologism like "prehistoric functional aesthetics". Prehistory and early history themselves do not agree on this point, however. An exhibition in 2018 in Dallas in the United States tried to show that every blow to a stone was simultaneously functionally and semantically intended and that we must therefore speak of "art" from the beginning. The hand axe in itself, say the archaeologist Tony Berlant and the sculptor Thomas Wynn as organizers of

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76 Heinrich Klotz, *Die Entdeckung von Çatal Höyuk. Der archäologische Jahrhundertfund*, Munich 1997, pp. 12f.

77 Harald Floss, Paläolithische Steinartefakte. Die ältesten Werkzeuge der Menschheit, in: *Das Entgegenkommende Denken,* 2015, pp. 89-104, in particular p. 103.

the exhibition, already has a specific pleasing shape in its eye drop form; and the shaping of the oldest known hand axe from Lake Turkana in Africa, almost 1.8 million years old, already speaks for it having more than utility (Ill. 26), and this would allow us to use the term "sculptor".[78] The shape, they say, possesses such powerful latency that we can speak of an inner pictorial activity, or "agency".[79] This becomes especially plausible with artifacts that were either too large or too small to be primarily intended as tools or that display an obvious visually striking form.[80] The intentional chipping of the stone, for example in an object from Egypt, directs the gaze to a naturally arisen form that seems like a filled hole here (Ill. 35),[81] and in a ca. 10-cm-wide hand axe from historical Thebes, the impression of an eye imposes itself (Ill. 36).[82] These examples each show a respective play with the found natural form that was recognized as something special and a careful intervention that underscores this form, making it into a picture in the sense of Alberti, quoted at the beginning. The process fulfills Alberti's definition of the picture precisely. All these phenomena can have arisen by chance, but their sheer number and markedness permit the conclusion that it was the interplay between chance form and conscious intervention that produced the respective shape.

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78 *First Sculpture*, ed. Tony Berlant and Thomas Wynn, exh. cat., Dallas 2018, p. 38.
79 Op. cit., p. 38.
80 Op. cit. p. 42; cat. no. 12, p. 43; cat. no. 15, p. 52.
81 Op. cit., cat. no. 49, p. 135.
82 Op. cit., cat. no. 48, p. 135.

9 THE WONDER OF WEST TOFTS

This is true also for the showpiece of the ca. 200,000-year-old hand axe from West Tofts, Norfolk in England (Ill. 37).[83] Its silhouette adheres to the style of symmetrical-asymmetrical processing, but, additionally, the fossil shell *Spondylus spinosus* sits in the middle of its belly. The shell has been brought with remarkable finesse into the central axis of the piece. Traces of weathering of the shell indicate that it lies on the surface in order to attract the attention of an eye that would recognize the value of this special feature.

Of course, the prehistoric sculptor had no idea what a fossil was, but his eye must have perceived this form with such esteem that he framed it with a sense of proportion (Ill. 38).[84] By framing this object, and as such transforming it into a picture in accordance with the definition given at the beginning of my lecture, he brought the genre of the "picture within a picture" into the world.[85] The fossils can be regarded as the impetus to develop, through the experience of iconic difference, a pictorially based consciousness of distance. Already graspable here may be what Aby Warburg defined as the "conceptual space of rationality", the *conditio sine qua non* for the development of a sphere of reflection.[86]

For a long time, only the front side of this incredibly small artifact was publicly known, and the exhibition in Dallas, too, published only this side. But the stone's

83 Oakley, 1981, pp. 208f.

84 John Feliks, The Impact of Fossils on the Development of Visual Representation, *Rock Art Research* 15 / 2 (1998), pp. 109-124, in particular pp. 114-116.

85 Fundamental on the "picture within a picture": Martin Warnke, Italienische Bildtabernakel bis zum Frühbarock, in: *Nah und Fern zum Bilde. Beiträge zu Kunst und Kunsttheorie,* ed. Michael Diers, Cologne 1997, pp. 40-107.

86 See on this: *Warburgs Denkraum, Formen, Motive, Materialien,* ed. Martin Treml et al., Munich 2014.

reverse side also reveals astonishing craftsmanship (Ill. 39).

This zone of the stone's original surface forks to the right, so that the lower branch covers the entire underside of the hand axe, while the entire length of the upper branch pointing to the right is no less skillfully framed by the surfaces of the processed stone than is the seashell on the front. The porous and swooping brown surface is as if surrounded by a bright halo. The stone's chance coloration and the sensitivity of an ordering eye work together in this section, too. This principle is especially striking on the upper right-hand margin, where the branch was made parallel to the outer contour line of the stone. The procedure is all the more impressive because, beyond the bright, quasi-mother-of-pearl collar formation, a dark layer of stone creates a second frame for the brown branch shape. Together, the front and rear sides show a consistent principle of forming that takes account not only of the formation of depths and the possibility of high collaring and hollows, but also of the different materiality and coloration of the stone.

Recognizable in the incorporated fossils and the spatial and coloring shaping is a driving force of form that is separate from the question of the "modernity" of these prehistoric creations. The point here is rather a constant anthropological variable that grasps dealing with the material of the form as a pictorially active interplay between a chance find and shaping, just as Alberti applied for the definition of the picture. In its surplus character, the form harbors the driving force that has nothing to do with magic, but with the form's offering, with the "affordance" that James Gibson attests for the entire environment.[87] This is a sharp turn away from all forms of ego-logical grasping of the world.[88] Here it is the entire environment that, out of its

87 James J. Gibson, *The Ecological Approach to Visual Perception,* Boston 1979.
88 *Philosophie der Verkörperung,* 2014, pp. 77f.

own independence, offers itself to human beings: the activity of the consciousness of difference, turned into form, as challenging dimension.[89]

Arnold Gehlen already captured this phenomenon in 1956 in his book "Urmensch und Spätkultur" (prehistoric man and late culture). According to him, in the production of stone tools, "certain processes of abstraction are in play that must at least be imagined, whether they can be put into words or not"; tools like the hand axe are thus "stone concepts".[90] No less apposite is the aforementioned "amphibious" double structure of human beings imputed by Nicholas Rescher. There is no contradiction between the experienced constraint of reality and imagination, utility and significant freedom of form, but rather a relationship of a mutual influence. The new results about early history provide the picture of a twin birth of function and form-significance. From the beginning, the human being is both: a utility optimizer and a producer of pictorially active forms that determine him no less than his dealings with the environment do.

The process of the hominids developing into human beings unfolds with the processing of stone, in Latin: *sculpere*, and with the interplay with the accommodating form as a kind of primal material of conceptual-distanced thinking and of enacting action. The sculpting (in German: Bild-hauende, picture-hewing) human being *Homo sculpens*, is as much the focus of anthropology as of art history and the philosophy of embodiment. Their interplay is an imperative of self-knowledge. The complexity of the development of consciousness can hardly be reduced to individual components, but it appears to be high time that they at least regain the comprehensive task that they already possessed in the first half of the 19th century.

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89 Bredekamp, 2018.

90 Arnold Gehlen, *Urmensch und Spätkultur,* Bonn 1956, pp. 12f.

ILLUSTRATIONS

Illustrations

1



White sandstone from Taihu region of northern China, with marked overhang and perforations, reworked and supplied with a pedestal, Ming to Qing dynasties, 17th/ 18th centuries, Richard Rosenblum collections, New York (from: Monahan, 1998, p. 44).



Monuments of ancient northern European history, a visualization of Franz Kugler's art history (from: Ernst Guhl and Joseph Caspar, *Denkmäler der Kunst,* vol. I, Stuttgart 1851, plate I).

Illustrations

3



Adolf Etzner, Panoramic bird's-eye view of Berlin, etching, 1886, detail: Museumsinsel (Museum Island) and Humboldt University (then Friedrich-Wilhelm-Universität).

4



Bison pierced by arrows, wall painting, 19,000 – 17,000 years old, Lascaux Cave near Montignac, France.



Otto Dix, Pregnant Woman, oil on canvas, 1919, 135.2 x 72.3 cm, Private Collection (from: Beck, 2003, p. 235, Ill. 180).

6



Nude Woman, found in Barma Grande Cave, Balzi Rossi, yellow steatite, H. 4.7 cm, Musée d'Archéologie nationale, Saint-Germain-en-Laye, Paris (from: Cook 2013, p. 92, Ill. 40).



So-called "Venus Hohle Fels", found in Hohle Fels Cave, Swabian Jura, Mammoth ivory, c. 40,000-35,000 years old, H. 5,97 cm, Museum der Universität Tübingen (from: *Eiszeit. Kunst und Kultur,* 2009, p. 270, Ill. 322).

8



Closed hand of the author, photography by Barbara Herrenkind, 2017.

9



Opened hand of the author, revealing a true-to-scale reproduction of the mammoth from Vogelherd Cave (Ill. 9), photography by Barbara Herrenkind, 2017.

10



Mammoth, mammoth ivory, found in Vogelherd Cave, c. 35,000 years old, L. 3.7 cm, Museum der Universität Tübingen (from: *Eiszeit. Kunst und Kultur,* 2009, p. 262, Ill. 314).

11



Rocky massif near Ardèche River with Chauvet Cave underneath, Ardèche, France (from: Chauvet Cave, 2003, pp. 14-15).



Illustrations

12



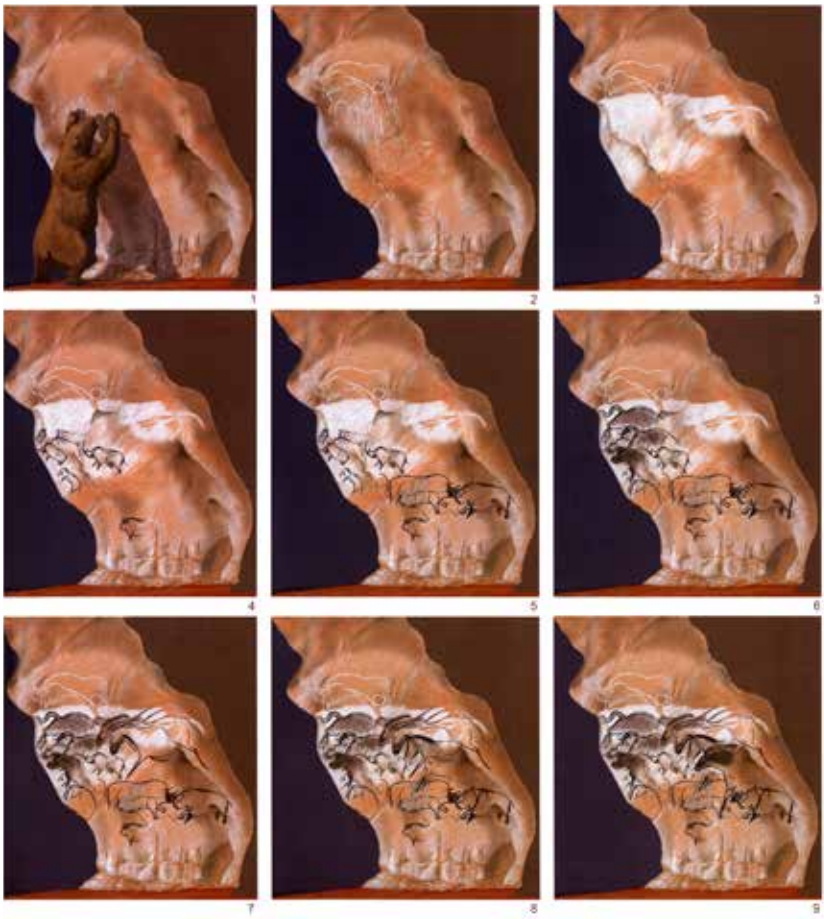
Procession of predators, Chauvet Cave, Left wall of the End Chamber, wall painting, 35,000 – 32,000 years old (from: Chauvet Cave, 2003, Foldout n.p., Ill. 126).

13



Researcher in front of palimpsest on the so-called "Panel of the Horses" in Chauvet Cave, film still from Werner Herzog's documentary *Cave of forgotten dreams* (2010).

14



Reconstruction of a possible chronology of composition, Panel of the Horses, Chauvet Cave (from: Chauvet Cave, 2003, p. 117).

15



Horses' upper bodies from the Panel of the Horses, Chauvet Cave, film still from Werner Herzog's documentary *Cave of forgotten dreams* (2010).

16



Franz Marc, The Tower of Blue Horses, 1913, oil on canvas, location unknown (missing since 1945) (from: Bredekamp, 2013, Ill. 14).

17



Mammoth, mammoth ivory, found in Vogelherd Cave, 36,000 – 29,000 years old, H. 3.1 cm L. 5 cm, Museum der Universität Tübingen (from: *Eiszeit. Kunst und Kultur,* 2009, p. 249, Ill. 294).

18



Incised head of a lion, mammoth ivory, found in Vogelherd Cave, 40,000 – 32,000 years old, H. 2.5 cm, Württembergisches Landesmuseum Stuttgart (from: *Eiszeit. Kunst und Kultur,* 2009, p. 43, Ill. 33).

19



Incised ochre stone, c. 75,000 years old, found at Blombos Cave, Western Cape, South Africa, Iziko South African Museum, Cape Town (from: *Eiszeit. Kunst und Kultur,* 2009, p. 112, Ill. 85).

20

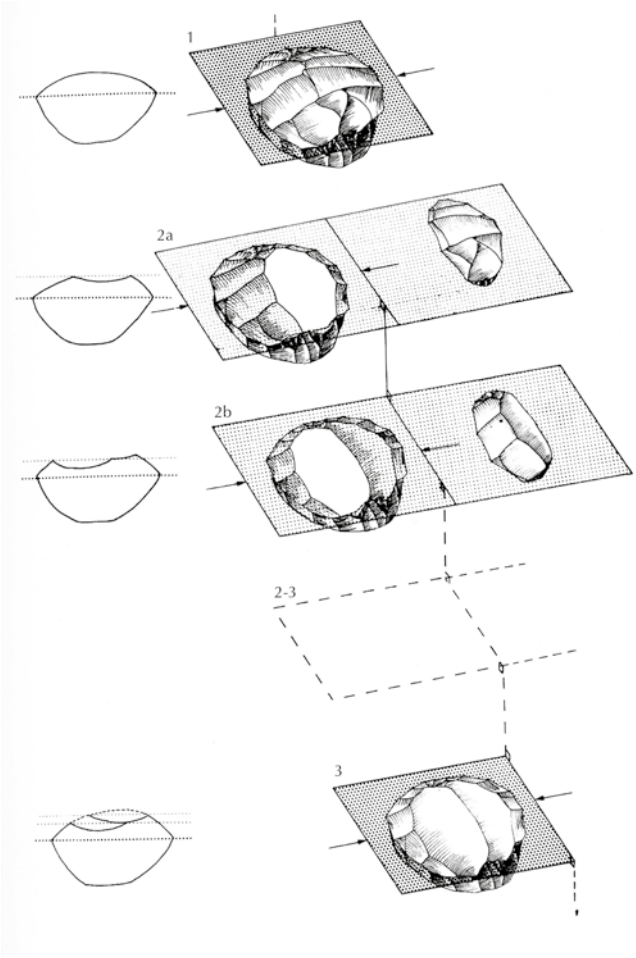


Bone utensil with incised, fanned out line-succesions, L. 40 cm (in total); found in Bilzingsleben (Thüringen), c. 400,000 years old (from: *Die Schöninger Speere,* 2007, p. 227, Ill. 184).

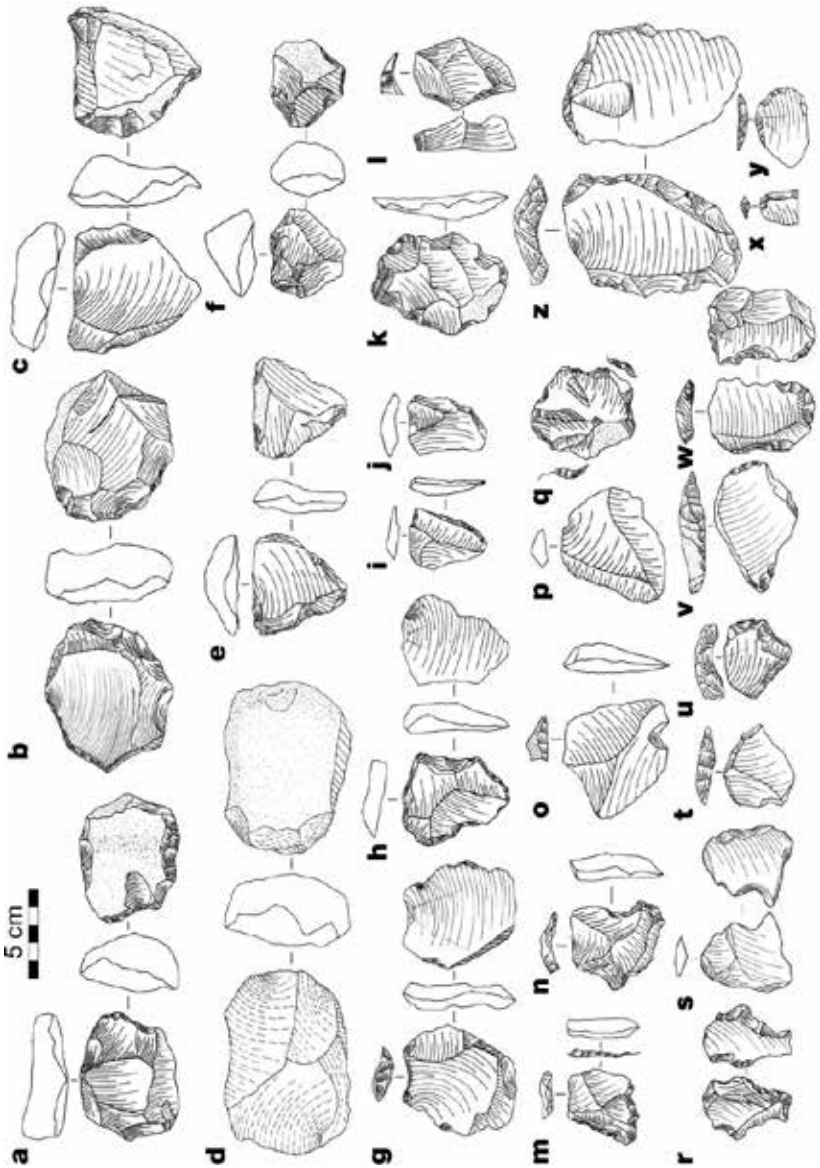


Incisions on a freshwater bivalve, found on Java, Indonesia, ca. 500.000 years old (from: Joordens et al., 2014, Ill. 2).

22



Levallois technique for knapping a hand axe, schematic from: Facchini, 2006, p. 142, Ill. 10.



Line drawings of selected artefacts from Guanyindong Cave (from: Bo Li et al. 2019, p. 84, fig. 3).

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24 **General view of the main Bruniquel Cave structure with superposed layers of aligned stalagmites, c. 176,500 years old, Tarn-et-Garonne, France (Image credit: E. Fabre, SSAC).**



25



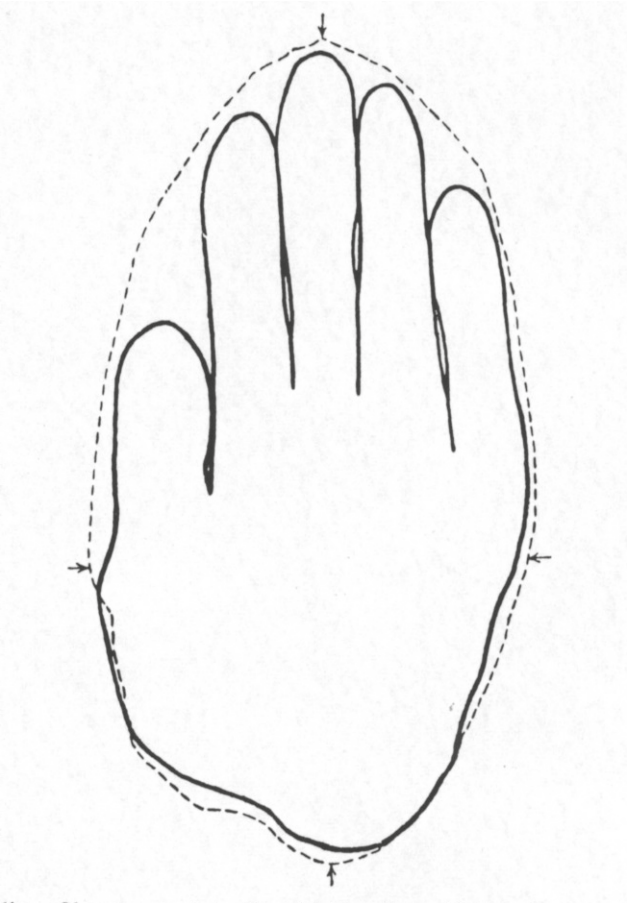
Selected artefacts found in the Shangchen Palaeolithic locality, c. 2.1 million years old, (from: Zhu et al., 2018, p. 611, Ill. 4).

26



Oldest known Acheulian hand axe from Africa, found at the shore of Turkana Lake in Kenya, c. 1.76 million years old, H. 23 cm (from: *Nature* 477 (2011), No. 7362, front page).

27



Abstraction of a hand as a hand axe (from: Schmidt, 1934, p. 100, Ill. 1).

28



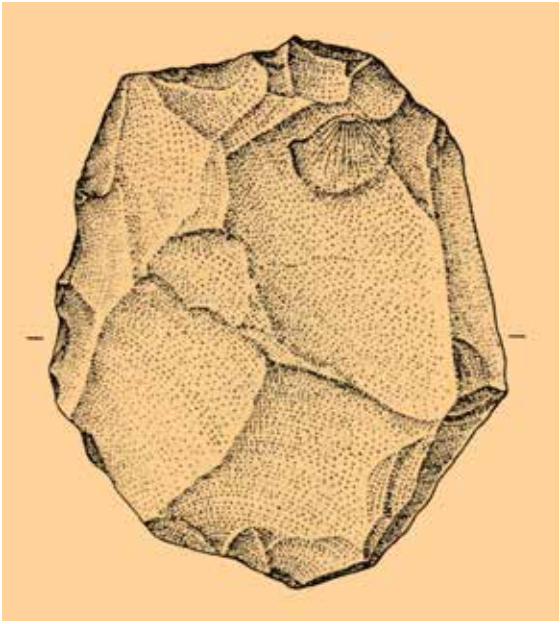
Hand axe found in Nadaouiyeh Aïn Askar, Syria, Acheuléen, photograph by E. Jagher (from: Lorblanchet, 1999, p. 141, detail).

29



Scraper (polyhedron) with inclusion of a shell, Devonian quartzite, found in the volcanic cone Schweinskopf, Osteifel, Germany, Middle Paleolithic Period, Schloss Monrepos, Neuwied, Archäologisches Forschungszentrum und Museum für menschliche Verhaltensevolution (from: Schäfer, 1990, Ill. 43, 2, plate 37, 29).

30



Redrawing of Ill. 29 (from: Lorblanchet, 1999, Ill. p. 92, no. 2).

31



Hand axe with fossil shell, found in La Palne, Dordogne, France, Moustérien, Middle Paleolithic Period, finder A. Turq, photography by Michel Lorblanchet (from: Lorblanchet, 1999, Abb. 82).

32



Hand axe with fossil of a sea urchin, found in Swanscombe, England, c. 400,000 years old (Lower Paleolithic), Liverpool, World Museum (from: Lorblanchet, 1999, p. 89, Ill. p. 90).

33



Profile view of the Swanscombe hand axe (Ill. 31) (from: Oakley, 1985, p. 104, pl. IV, b).

34



Detail of the sea urchin fossil, photography by Liverpool, World Museum.

35



Scraper, Egypt, c. 500,000 – 50,000 years old, Tony Berlant Collection (from: *First Sculpture,* 2018, p. 137).

36



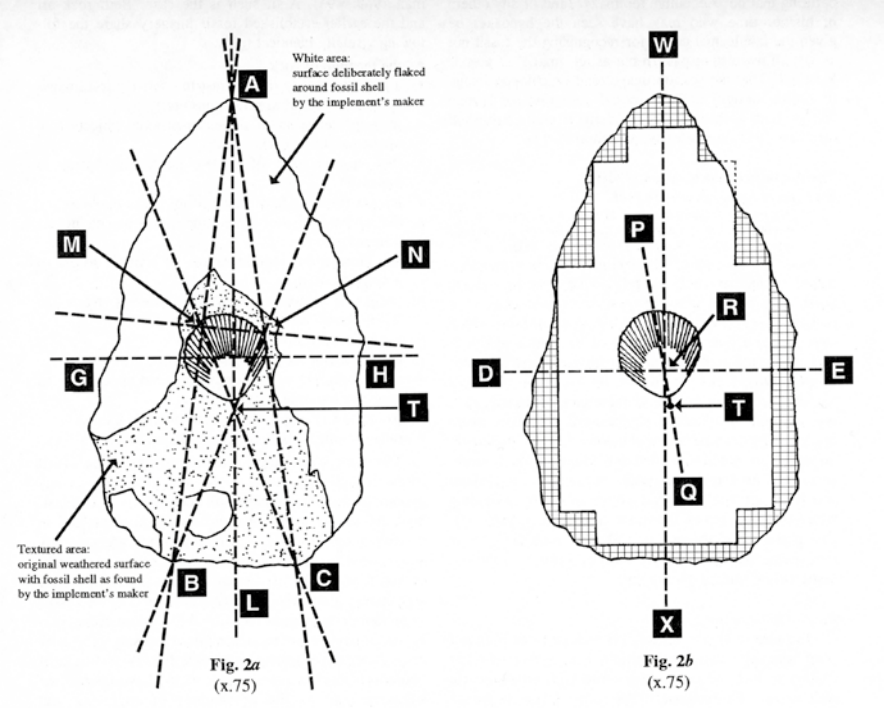
Artefact, Egypt, c. 500,000 – 50,000 years old, Tony Berlant Collection (from: *First Sculpture,* 2018, p. 136).

37



Hand axe of the Acheulean type, incorporating fossil scallop shell (*Spondylus spinosus*), flint, c. 200,000 years old, found at West Tofts, Norfolk. Cambridge Museum of Archaeology and Anthropology.

38



Proportions of the West Tofts hand axe, schematic by John Feliks (from: Feliks, 1998, p. 115).



Back side of the West Tofts hand axe (Ill. 37).

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