

Harry Lehmann

Gehaltsästhetik

Eine Kunstphilosophie

Wilhelm Fink

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Eigenvalues

Experiences arise from the interplay of two moments: remembering and valuing. A person is experienced when they possess a network of evaluated memories and can therefore connect almost any new situation with a remembered evaluation. In practical contexts, the origin of values in experiential processes can be described quite simply: a purpose creates the expectation that this purpose will be realized, and this expectation can either be fulfilled or disappointed and marked by a positive or negative bodily feeling. In aesthetic contexts, by contrast, which are based on comparisons of perception, all practical considerations fall away. Instead, one enters the comparison of perceptions with the expectation that different perceptual impressions also possess different affective values, and the remarkable fact is that this “expectation of perception” is indeed fulfilled. But where do these values originate—the values that are called upon as soon as one enters the field of aesthetic judgment and comparison?

Plants, which nourish themselves autotrophically and whose resources—water, air, minerals, and light—are available in the same place, can take root. Animals, which nourish themselves heterotrophically from the metabolic products of other living beings, must move about and therefore generate information about their environment. To this end, animals developed sensory organs that register environmental stimuli and a nervous system capable of calculating recognizable forms from this information. Together, sensory organs and the nervous system constitute a perceptual apparatus that, in every animal species, is adapted to a particular ecological niche. Accordingly, the general function of perception is to identify behaviorally relevant objects such as food, but also conspecifics, predators, and mating partners, so that an organism can move toward or away from them.

Perceiving means synthesizing forms from a vast multitude of heterogeneous environmental stimuli—forms to which behavioral patterns can then be attached. That this is a perceptual schema that is always active becomes evident when one automatically begins to see specific shapes in amorphous phenomena such as clouds or rock formations. Yet current form perception does not occupy all perceptual resources; peripheral stimuli at the horizon of perception are always registered as well: someone approaches the garden gate—the dog pricks up its ears; someone enters through the door—all eyes turn toward them. It is therefore insufficient to define perception solely in terms of form formation. Equally constitutive of perception is an attentional mechanism that is directed both toward presently perceived forms and toward potentially expected forms. Something may always occur in an animal’s environment that requires more attention than the phenomenon on which the animal is currently focused. Even a mouse searching for food must reserve attentional resources for the cat that may be hunting it. In other words, animal perception itself must contain a mechanism through which perceptual activity can be redirected toward a new, indeterminate cluster of stimuli in which a vital form may be hidden.

In his *New Experimental Aesthetics* (*Neuen experimentellen Ästhetik*), Daniel E. Berlyne demonstrated that novelty, uncertainty, complexity, and ambiguity in perceptual objects increase an organism’s level of arousal, and that this heightened level of activation is experienced positively up to a certain point. Translated into everyday language, this means: the newness of a phenomenon arouses curiosity. However, once the “novelty” of the observed phenomenon exceeds this optimal level of arousal, the positive experiential value of the

perception declines again and can even become negative. In other words, as soon as a stimulus pattern becomes too indeterminate, the perceptual apparatus judges it to be “incapable of forming a gestalt” and loses interest in it.

Thus, two perceptual mechanisms are constitutive of perception: form formation and concentration (attention). Attention is directed not only toward currently perceived forms but also toward suddenly occurring sensory stimuli about which no prior knowledge can indicate whether they will be behaviorally relevant or not. This bipolar model of perception will serve as the foundation for determining the intrinsic values of perception.

It will be shown that two aesthetic intrinsic values can be found in relation to each of these moments: on the side of form formation, these are beauty and the sublime; on the side of attention, the event and ambivalence. Whereas the intrinsic values of beauty and the event are based on locally intensified processes of form formation and concentration, the sublime and ambivalence are privative intrinsic values in which the failure of form formation or the absence of a stable perceptual gestalt triggers the aesthetic effect. This approach offers the opportunity not only to place the classical ideas of the beautiful and the sublime, but also the characteristic guiding ideas of modern aesthetics—the event and ambivalence—on a common perceptual-theoretical foundation. An aesthetics of intrinsic values can therefore attempt to build a bridge between classical and modern aesthetics.

The term “eigenvalue” is borrowed here from mathematics, where it originally refers to the solutions of systems of equations used to describe a wide variety of physical processes, including the natural frequencies of steel springs, piano strings, bells, drums, bridges, or machines. Such natural frequencies can be amplified or dampened, making it possible both to build musical instruments and to protect washing machines from resonance catastrophes. When the following discussion speaks of “eigenvalues of perception,” the term alludes to this kind of feedback effect: aesthetic eigenvalues are values that inhere in the perceptual apparatus by virtue of its own structural principles.

Beauty

The observation that there are more or less attractive forms underlies the entirety of traditional aesthetics. Gestalt psychology also assumes that a “good Gestalt” (good form) exists and that “laws can be found according to which a concrete form is perceived as ‘better’ than another (such as a closed circle compared to a broken or deformed circular line).” Today, it is more common to say that particularly memorable forms possess a high degree of “Gestalt prägnanz” (salience/visual clarity). Rudolf Arnheim demonstrated how “perceptual forces” operate in classical paintings; “seeing is the perception of directed tensions,” was his credo. Furthermore, empirical studies have shown that there is a perceptual preference for “prototypes”—for example, prototypical faces—and that objects with high “fluency” (i.e., a higher “cognitive processing fluency” by the brain) are preferred by the viewer. Speaking of a “good Gestalt,” “Gestalt prägnanz,” “perceptual forces,” “prototypicality,” and “processing fluency” equally implies that the perception of a form is inherently normative in itself. The question is: where does this intrinsic normativity of perception originate?

Among the standard aesthetic phenomena is the Golden Ratio. It has been known since antiquity that dividing a line possesses a distinct aesthetic appeal precisely when the short

section relates to the long section in the same way the long section relates to the sum of both parts. The founder of empirical aesthetics, Gustav Theodor Fechner, conducted a test with various rectangular shapes as early as 1876, which revealed an aesthetic preference for the Golden Ratio.; What is still missing today, however, is a theory that adequately explains this well-known phenomenon. The zoologist Klaus Richter addresses this dilemma openly: "Even today, we cannot provide any causal evidence as to why the proportions of the Golden Ratio have such a basal aesthetic effect. It appears as though the dilemma of all philosophical aesthetics condenses precisely in the operation of the Golden Ratio." Empirical aesthetics can prove the preference for the Golden Ratio, Gestalt aesthetic theory can redescribe it as a "good Gestalt," and evolutionary aesthetics runs into an unsolved problem here: "And even if the favorite obsession of all proportional mathematicians—the Golden Ratio—actually increases the probability of beauty significantly, evolutionary theory's work with this finding would only just be beginning. It would still need to be clarified why this exact proportion of all things should have increased human 'fitness' in an evolutionary sense more than any other proportion. A plausible 'Darwinian' thesis for this is currently still lacking."

If one assumes that a perceptual apparatus spontaneously begins to analyze all information for its potential to form a Gestalt, then it must also be expected that the higher degree of order inherent in the Golden Ratio—compared to all other ways of dividing a line—is co-perceived by this apparatus. Precisely with this division, one and the same proportion is present twice; the eye perceives the exact same proportional relationship twice within the same phenomenon. The preference for the Golden Ratio would be rooted in a hyperfunction of Gestalt perception: because the brain, which is actually busy recognizing forms, generates a resonance effect on the side. "Beauty" would be an intrinsic value (eigenvalue) of perception—a functionless side effect of a biological function.

Theories describing the origin and genesis of aesthetic perceptions are indispensable, yet they operate on an explanatory level where most questions of aesthetics do not even arise. Neuronal resonance effects can describe the mechanism underlying every experience of beauty, but they cannot be perceived in everyday life, and they contribute very little to analyzing concrete aesthetic phenomena in art or design. Anyone who experiences something as beautiful does not recognize a resonance, nor do they perceive the increased processing fluency of their brain; rather, they exclusively feel the affect of liking something.

Beyond the naturalistic level of explanation, a phenomenological level of explanation is therefore required, on which the same question—what it means to perceive something as beautiful—is answered in a complementary manner. It is necessary to investigate which sensory characteristics allow us to recognize aesthetic phenomena that cause perception to become hyperfunctional or dysfunctional. Particularly regarding beauty, a whole range of identifying features present themselves, such as: Symmetry, Proportion, Coherence, Harmony, Simplicity, Complexity, The contrast of light and shadow and Colorfulness. In William Hogarth's *The Analysis of Beauty* from 1753, all these aesthetic attributes are already assembled.

To address the question of whether these traditional criteria of beauty can also be reconstructed as intrinsic values of perception, one can build upon Gestalt theory. The prototype of a Gestalt perception is the visible figure that stands out from a background; however, the term refers just as much to an acoustic Gestalt. Gestalts are first and foremost perceived as units. Since units exhibit a distinct degree of order, Gestalt perception must also be based on perceptual schemata with which redundancies can be identified. Furthermore, evolution produces structural order in the animal and plant kingdoms insofar as the genetic

code contains general construction blueprints that generate redundancies, identities, similarities, proportions, and symmetries—such as when one and the same leaf shape is replicated thousands of times on a tree. Animals, in turn, possess a highly pronounced body symmetry: they have an even number of limbs, eyes, and ears, and often possess a species-specific division between head, torso, and tail. In a biotope where the perception of conspecifics and predators is vital, it is an evolutionary advantage if perception can specialize in registering such proportions and symmetries, and if neuronal schemata develop to estimate sizes and distances. In this respect, the degree of order would be the first parameter determining the Gestalt-like quality of a form.

Just as fundamental to Gestalt perception as the inner unity of a form is the difference between a form and its external environment. This perceptual difference is registered as contrast. Visual contrasts include color contrasts, light-dark contrasts, or the contrast between matte and glossy surfaces. Acoustic contrasts include the contrast between high and low pitches, the loud-soft contrast, and the contrast between short and long-lasting acoustic stimuli. Because animals had to adapt to very different ecological niches by improving their contrast perception, a variety of different contrast schemata developed.

Gestalt perception is therefore based on both order and contrast schemata. In the context of an intrinsic value theory, this raises the question of whether highly ordered order and highly contrasting contrast are two separate intrinsic values of perception. Undoubtedly, such phenomena can be observed, and they possess a particular salience on their own, such as the black-and-white contrast in a zebra's coat. However, it only makes sense to differentiate between different intrinsic values if they exist independently of one another. Order and contrast, however, are two complementary aspects of Gestalt perception that reinforce each other—and in this way, can produce even more salient forms. Therefore, it is not "strict order" or "sharp contrast" that can be defined as an intrinsic value of perception, but rather the highly Gestalt-like interplay of order and contrast. Even the Golden Ratio is not a pure effect of order in which the same neuronal proportion schema is stimulated twice by a single form. The aesthetic preference for the asymmetrical "golden" division of a line over a simple symmetrical halving can be explained by the additional contrast effect generated by the two differently sized segments. The Golden Ratio unites proportional order and size contrast within one and the same figure.

Order and contrast are two interfering elements of perception that are at play in every instance of Gestalt perception, and in certain formations, they trigger a self-reinforcement of Gestalt perception. These particularly Gestalt-like forms are experienced as salient (*prägnant*) shapes, one of whose properties is a very low susceptibility to perceptual disruption. A salient form is easily recognized even under changing observation conditions, such as different lighting, discoloration, distances, and angles. This higher perceptual stability can be attributed to the fact that, with salient forms, perception can "multiply utilize" the order and contrast schemata of normal Gestalt formation processes, thereby becoming less prone to errors.

The hyperfunction of perception underlying salient forms is triggered not only by geometric shapes but is also found in the perception of colors, pitches, and tonal durations. Octave equivalence occurs because two different tones—one of which vibrates at double the frequency of the fundamental tone—can stimulate the auditory apparatus twice on the same frequency. Hermann von Helmholtz had already formulated such a resonance theory in 1863 in his *On the Sensations of Tone*, but it could only be empirically confirmed at the end of the 20th century. Today, it can be stated definitively: "The pleasure derived from consonant chords thus has a clearly defined physiological substrate in the functionality of the

microstructures of the Organ of Corti. The beauty of harmonic chords is naturally predetermined and already rooted in the inner ear. Likewise, an additional aspect of unity comes into play when acoustic events repeat at equal time intervals, for they are not perceived as individual, distinct events, but as linked events separated by one and the same temporal distance. Many properties traditionally associated with "beauty"—symmetry, proportion, rhythm, or harmony—mark resonance points where a self-reinforcement of perceptual processes occurs. The experiential intensity of such structural order effects multiplies even further when the highly ordered forms are structured in a highly contrasting manner.

If aesthetic perception is based on intrinsic values of perceiving, it stands to reason that animals can also perceive their environment aesthetically. It is well documented experimentally that animals prefer forms with a higher degree of order—for instance, when chimpanzees, vervet monkeys, and capuchin monkeys are given a choice between uniform and irregular structures; and obviously, the peacock's tail attracts the peahen, and the nightingale's song is attractive to its peers. The critical question, however, is how to interpret this perception of aesthetic forms in animals. Evolutionary aesthetics assumes that these are "sexual ornaments" that enable "sexual selection," which in turn is where our own sense of beauty originates. Yet, what evolutionary aesthetics fails to explain is how such a selection for beautiful forms and shapes could occur in animals in the first place. If a specific feature on plumage, fur, or a bird's voice—which from our perspective is "beautiful"—is reinforced in a sexual selection process, one must already presuppose that a natural perceptual preference for this aesthetically attractive feature exists in these animals. If this preference did not exist, no evolutionary process could kick off to reinforce this trait. The theory of aesthetic intrinsic values could close this explanatory gap, as it assumes that every perceptual apparatus automatically generates more or less pronounced intrinsic values due to its constitution, thereby making natural differences in attractiveness noticeable among perceived environmental phenomena.

Due to the preferences for particularly "formful forms" inherent in the nature of perceptual processes, strong structural couplings develop between fauna and flora. Flowers, for example, selected and reinforced those mutations that led to random ornament formation, increased contrast, and shaping, because they hit the intrinsic values in the perceptual apparatus of insects by which these plants are pollinated. If insects could not perceive, flowers would not be beautiful. Conversely, beautiful ornaments indicate food, so further specialization of insects toward perceiving such patterns is functional. In harmony with evolutionary aesthetics, one can say: "Contrary to a long-standing anthropocentrism that still prevails today, the capacity for aesthetic discrimination is tending to develop throughout the entire animal kingdom and has thus come down to humans as an archaic heritage."

Aesthetic evolution in human societies starts just as it does in the animal kingdom: there is an heightened initial sensitivity to highly contrasting orders that spontaneously catch the eye in the natural environment. Such attractive objects likely included colorful feathers, sparkling stones, the shells of mussels and snails, or blossoms. However, the context of selection is now social rather than biological. "Beautiful things" may have fulfilled a cultic or identity-establishing function, for example, by indicating family or tribal affiliations. In this initial scenario, aesthetic evolution was still limited to seeking and finding beautiful things in nature. The primary criterion for collecting was discovering particularly salient objects, not how attractive they were compared to one another. Aesthetic experiences played hardly any role in these situations because the basis for comparison was missing.

A next stage of aesthetic evolution is reached when aesthetic objects are not merely sought and found, but manufactured. The oldest human evidence of an aesthetic practice currently verifiable consists of geometric patterns engraved on a piece of ochre approximately 77,000 years ago (Fig. 3). This higher-level form of aesthetic evolution also sets in spontaneously and would repeat under similar conditions anywhere. As soon as tools are used, humans discover how geometric patterns can be produced. For example, if the stone blade of a scraper is not completely smooth but has jagged edges, parallel lines are created on the worked surface with every movement of the hand, forming an accidental ornament in the process.



Fig 3: Engraved ochre from Blombos Cave, c. 77,000 years ago

A phenomenon is always "beautiful" when a mutual reinforcement of highly contrasting and highly ordered perceptual impressions occurs. Accordingly, the ornament can also be viewed as an "ur-phenomenon" (proto-phenomenon) of the beautiful. It is based on the principle of redundancy (which creates order) and variation (which allows higher-level contrasts to emerge) and aims to generate salient perceptual patterns. According to Niklas Luhmann, "the function of the ornamental lies in a heightened level of redundancy and variety that cannot be achieved otherwise," and he suspects "the origin of art under conditions that knew no corresponding concept, let alone an autonomous art system, to be in the ornament." The linear pattern on the ochre stone from the Blombos Cave is empirical evidence for this hypothesis.

Accidental finds like particularly beautiful bird feathers and accidental discoveries like the ornamental character of carved patterns remain minor incidents in human history as long as they are not functionally integrated into a social context. The same applies to cave paintings and small sculptures from the Ice Age. Humans will have occasionally observed that animal forms are hidden within a piece of wood and can be clearly carved out with a stone tool. Or they noticed that the shadow of a figure cast onto cave walls by fire can be traced with a charred stick. Yet such discoveries remain without consequence as long as they find no practical use in a hunter-gatherer society.

It is generally assumed that prehistoric artworks possessed a magical, shamanistic, or other cultic significance. A ritual or cult initially creates stable reproduction conditions for certain craft practices, such as drawing or carving figures. If the first primitive sculptures and drawings are used in a ritual, there is a strong motive to produce them. A more far-reaching question, however, is how an impressive aesthetic perfectionism—as observed in cave paintings and small sculptures from over 30,000 years ago—could develop under such conditions. The ritual only provides a social context for creating such works, but not one for

"improving" them aesthetically; they can fulfill their cultic function even as aesthetically imperfect works. Furthermore, to unfold their spiritual effect, cult objects are normally reproduced identically rather than varied, which additionally limits the scope for artistic creativity as we understand it today. From this, one can only draw the conclusion that the aesthetic evolution of prehistoric art could not have taken place like in modern art, where the creative subject creates a perfected work in a dialogue with their own aesthetic experience.

Evolutionary processes consist of three components: variation, selection, and the restabilization of the chosen variants. A variation from normal perception, which aesthetic evolution can latch onto, comes into play with every sculpture and every drawing. The salient outline drawing of a horse's head on a stone or a small mammoth figurine made of ivory, which can be held in the hand and viewed from all sides, allows for the immediate perception of an animal form in a way that is not possible when looking at the animal in the wild. Both the two-dimensional and three-dimensional artwork pre-process a part of the perceptual work that would occur under natural viewing conditions, and precisely this higher Gestalt-prägnanz, which is accompanied by an increased processing fluency of perception, is felt to be attractive and experienced positively. The evolutionarily exciting question, however, is how and why such a "perceptual variation" was selected and restabilized by prehistoric artworks.

Even though prehistoric painting can only be found in caves, one can assume (for reasons discussed in the chapter on events) that it originally developed outdoors. For the initial phase of prehistoric painting, various scenarios are conceivable in which an unintended perfection of draftsmanship occurs. One such scenario would be, for example, that over time many different drawings emerged on rock walls and stones in the living space of a group of hunter-gatherers, which reproduced an animal form with varying degrees of success. It could then happen that a rock featuring a particularly salient drawing is chosen as the site for a ritual due to its perceived "magic." The drawing itself thus moves into the center of attention and is consequently used much more often by other group members as a template for other drawings. This allows a selection process to set in, through which the drawings and the manual skills of the draftsmen perfect themselves aesthetically, even though the primary goal is actually the efficacy of a spiritual practice in which images are used as cult objects.

Another scenario could be designed for the small sculptures of the Ice Age. If only because of the immense labor required to carve a figure out of a piece of ivory using stone tools, but also due to the fact that one could only carry a small number of mobile sculptures during moves, their number must have been limited. Such figures had to be replaced when necessary—i.e., when they were left behind, lost, or broken—but they did not need to be reinvented. Rather, other figures or fragments of figures could be used as templates to imitate the formal inventions stored within them. During such sporadic reproduction processes, variants can emerge through which the original is imitated better or worse. If the aesthetically more sophisticated copies are then systematically preferred, such a practice sets an aesthetic evolution in motion. It is conceivable, once again, that a particularly attractive figure was attributed special magical powers and was therefore protected more than other figures from loss and destruction during moves. This improves not only the original but also the template, allowing a selection process to begin in which the copies of copies perfect themselves aesthetically behind the backs of everyone involved.

This type of aesthetic evolution through imitation—which was unintended by the subjects and could take place over generations—presumably produced all of prehistoric art and was still active in medieval "symbolic art."^{6B} Since it is ultimately spiritual criteria that underlie such an aesthetic evolution, the development can also take different directions and does not

necessarily have to align with the intrinsic value of the beautiful. In the imitation mode, aesthetic evolution can also reinforce completely different aesthetic characteristics, such as extremely voluptuous body shapes in the Venus figurines or hybrid body shapes like the Lion-man of the Lonetal—if these features are of importance for the ritual within the context of a lion-man or fertility cult. Crucially, the selection process underlying an aesthetic evolution in the imitation mode does not take place at the level of creative form-finding processes or aesthetic experience, but rather on a level of social interaction.

By contrast, the capacity for aesthetic experience so familiar to us is likely a relatively late cultural achievement. It could only fully develop when a sustainable practice of aesthetic comparison also formed within a society. Such spaces of aesthetic comparison presumably emerged with the first archaic marketplaces, where one had to decide among a plurality of similar trade objects—such as weapons, fabrics, or vases—which items to acquire and which not. Precisely because a choice must be made in a market situation between things that possess the same function and the same appearance, the techniques of ornamentation and painting gain an additional purpose. With them, an aesthetic value can be generated beyond the utilitarian value of the objects, thereby increasing the exchange value of the goods offered.

Of all trade objects, ceramic tableware was likely predestined for developing the capacity for aesthetic experience. Vases, jugs, pitchers, plates, and bowls are everyday objects that were used everywhere and—as fragile goods—had to be continuously reproduced. Furthermore, they possess a large, smooth surface into which a relief can easily be carved and which can be painted well. Unlike jewelry, which is only perceptible singularly on a person, decorated ceramics repeatedly lead to comparative situations in the household and in the marketplace where pitchers, vases, jugs, and plates stand side by side.

In addition, ceramics are a non-perishable good that can be traded over long distances and used to open up new, distant marketplaces. Minoan pottery, which spread throughout the Mediterranean region about 4,000 years ago, already reveals a saturated aesthetic field with design solutions that can hardly be perfected further. An example of this would be the beak-spouted jug painted in the Kamares style from the Old Palace period, manufactured around 1800 BCE (Fig. 4). The extraordinary aesthetic quality of the painting was achieved through a targeted maximization of order and contrast. The two main motifs on the jug exhibit a high degree of order: in the center of the illustration, two spiral lines can be seen, which generate a pattern of circular black-and-white lines; to the left and right of it, a pattern of oval discs is arranged into a repetitive sequence. However, contrast perception is also maximized, insofar as the jug has a black base coat, causing the white lines to stand out particularly strongly against the black background.

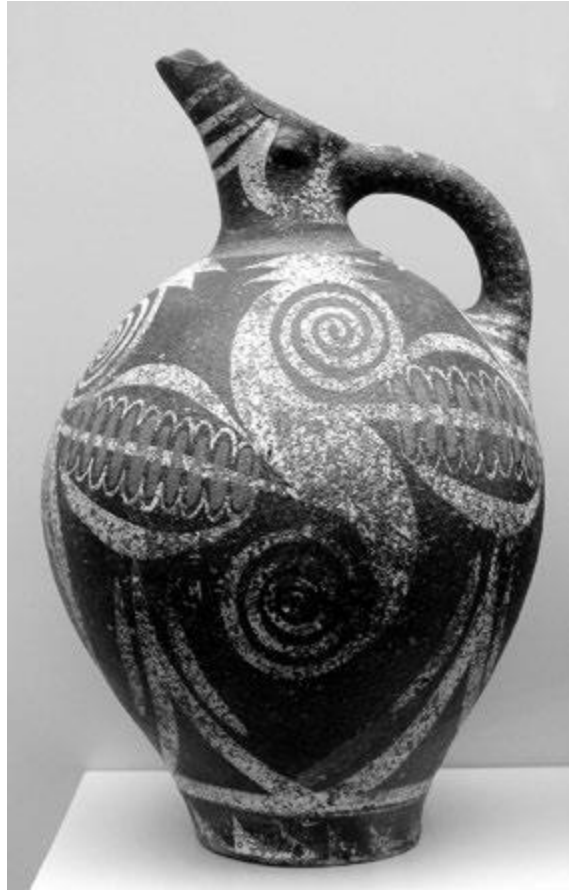


Fig 4: Beak-spouted jug in the Kamares style, Protopalatial period (1800–1700 BCE)

The decoration with geometric ornaments and the utilization of black-and-white contrasts do not, in themselves, produce the Kamares style; rather, it is additional arrangements that generate this effect. For instance, the contrast effect of the oval discs (which are red in the original) is reinforced by small white semicircles at their rounded ends. Furthermore, the black space between the discs and their white borders now stands out as a distinct Gestalt. Finally, the white band connecting the discs achieves two additional structural order effects: On the one hand, the line links the oval discs into a continuous pattern, so that even the sequenced elements appear as a unified form. On the other hand, the white line introduces an additional axis of symmetry, which increases the degree of order of the entire disc ornament.

One can hardly escape the impression that the entire painting looks like modern design. This cannot be attributed simply to the abstract language of form; rather, it is due to subtle formal decisions—such as the fact that the white bands do not run parallel but form an oblique angle. This layout also increases the contrast intensity of the ornament—not between figure and ground, but between two figures that are identical yet distinguishable due to their alignment. Similarly, the two spirals do not merely repeat the same pattern but create a new "unity of differences" through a vertical mirroring.

This example demonstrates a multi-level iteration of Gestalt formations common to all ornaments: The shapes generated from a combination of order and contrasts at an elementary level of observation are used as building blocks at the next higher level of observation, combining into a large-format Gestalt. Through this intensification of order and contrast, complex ornaments can capture attention much longer than simple forms. Consequently, it is not the square or the circle that are experienced as exceptionally beautiful shapes, but rather

arrangements that playfully combine such elementary forms. The ornament shows most clearly that "beauty" cannot be traced back simply to the processing fluency with which a shape is recognized. Instead, those very forms that are processed most fluently can themselves be used as elements in a complex composition. When these elementary forms are integrated into a higher-order shape that remains quick to grasp, the composition is experienced as an intensified, exponential expression of beauty.

To maintain the rigorous scholarly tone, complex German compound concepts like *Wahrnehmungsvergleiche* and *Beobachtungsverhältnisse* have been translated into precise English academic equivalents (e.g., "perceptual comparisons" and "conditions of social observation").

Even under the most favorable circumstances, the impressive decoration of the Minoan beak-spouted jug could not have emerged through the mode of aesthetic imitation. The aesthetic effect of these finely balanced patterns is far too subtle to be restabilized through non-aesthetic, cultic functions. Normally, that particular "oblique angle" would diminish rather than increase the order of an ornament. In this respect, it must be assumed that elaborate aesthetics, such as those produced by Minoan art, can only develop through direct perceptual comparisons and must be anchored in an aesthetic practice in which aesthetic judgment is trained to recognize such fine distinctions. That spirals or a sequence of circular elements have a particularly appealing effect can be gleaned from nature or discovered through trial and error. However, how to arrange these design elements themselves on a curved surface can only be learned from comparisons that reveal which design solution works and which does not.

It was presumably in the decoration of pottery that aesthetic evolution was able to shift into the mode of aesthetic experience for the first time. This market hypothesis is also supported by the fact that the Kamares style developed precisely at the time when the fast-spinning potter's wheel began to spread across Crete. This technical innovation meant that a large number of uniform, everyday objects were now produced in small batches, differing from one another primarily aesthetically—that is, by virtue of their painted decoration—and for this reason alone, they bound to provoke perceptual comparisons. This development was further accelerated when Minoan pottery, due to higher production output, could be traded throughout the Mediterranean. This created a vast marketplace where the aesthetic surplus value of the decoration could fuel demand for this pottery, which likely led to the formation of a stable practice of aesthetic judgment.

Prehistoric art developed perfect forms of representation for the singular figure, yet there were scarcely any noteworthy iterations within or with these striking forms. Even though many different animal figures were drawn next to each other on the rock walls in cave paintings, they may be linked by a narrative, but their arrangement does not itself follow aesthetic considerations; that is, the proportions and distances in the constellations of figures were not specifically balanced. Minoan art, by contrast, exhausted the aesthetic potential of such higher-order combinations of forms, not only in abstract but also in figurative representations. During the Neopalatial period (c. 1700–1450 BCE), the Floral style and the Marine style emerged—a style of painting in which the depicted plants and animals are themselves ornamentally designed and enter into a harmonious arrangement with one another. Such complex, nested design achievements can, in all probability, only be realized in the mode of aesthetic experience and presuppose conditions of social observation that permanently provoke perceptual comparisons between similar works of art and challenge comparative aesthetic judgments about them. In the terminology of Gestalt psychology, one could say that

there are no limits to aesthetic imitation in terms of creating perfect works regarding "Gestalt purity" (*Gestaltreinheit*). Its limitations concern "Gestalt depth" (*Gestalthöhe*)—that is, the degree of structured complexity within a work.

The theory of aesthetic eigenvalues [or *intrinsic values*] can be reformulated in terms of media theory. This opens up the possibility of also "representing" those anomalous states into which a perceptual apparatus falls when it encounters its own eigenvalues. Here, media are generally understood as media for form-building. They are defined as a set of "loosely coupled elements" that, depending on the occasion, can combine into a "strictly coupled form" (Fig. 5). A vivid example of this would be the medium of language, whose "elements" are individual words that can be linked into meaningful sentences with the help of a grammar. In this case, the grammar would fulfill the role of the "loose couplings," while the meaningful sentences would be the "forms" that can be built within the medium of language.

Analogously, the elements of a perceptual medium would be the stimuli produced by the sense organs. Its loose couplings would be perceptual schemata, which are computational instructions of the brain used to construct Gestalten [or *shapes/forms*] from these perceptual elements. The loose couplings of a perceptual medium generate information relevant to the living being from a stream of diffuse environmental information. If a concrete constellation of stimuli hits the retina (for example, when a mouse appears in a cat's field of vision), the loosely coupled elements of the visual perceptual medium coagulate into the strictly coupled Gestalt of an identifiable image. If a concrete constellation of stimuli hits the eardrum (for example, when a cat hears the rustling of a mouse), the loosely coupled elements of the acoustic perceptual medium coagulate into the strictly coupled form of an identifiable sound.

The perception of the beautiful has its point of crystallization where the perceived Gestalten are themselves structured in a Gestalt-like manner, or where processes of Gestalt-building iterate. In the strict couplings of the beautiful form, the loose couplings of the perceptual medium become present, insofar as they manifest as particularly strong couplings (Fig. 6). One perceives those very schemata that underlie the formation of the Gestalt. When we like something because it is beautiful, our animalistic, latent "perceptual interest" in Gestalten becomes manifest in that pleasure. In this sense, one could also say that the medium of perception reflects upon itself in the aesthetic perception of beauty.

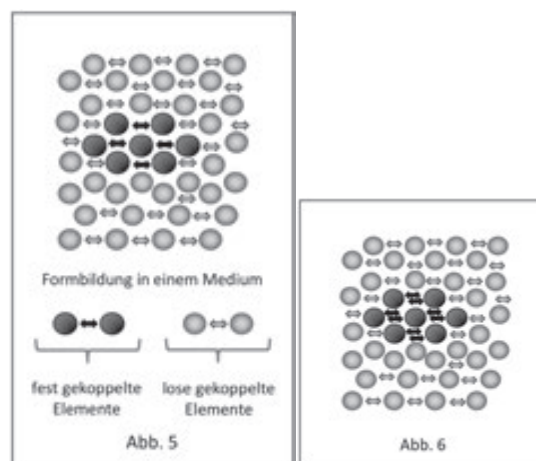


Fig 5 and 6

The Sublime

There has always been a second aesthetic value alongside beauty, one that can be traced back to antiquity: the sublime. Looking out over the open sea, into the endless desert, down into a vast valley, or up at a mighty mountain range is sublime; the sight of massive herds of animals or flocks of birds, the distantly flickering sea of city lights, or the star-studded sky is sublime; and a roaring waterfall or an active volcano appears sublime. The difficulty of grasping the sublime theoretically lies not least in the fact that one is dealing here with three completely different classes of phenomena: with homogeneous and nearly empty perceptual impressions, with an uncountably infinite quantity of distinct elements, and with the forces of nature.

When looking at a windless sea, one sees a blue-gray surface stretching to the horizon, unbroken by any wave and unruffled by any breeze. Color contrasts, brightness contrasts, and texture contrasts cannot be discerned on the water's surface. In fact, contrast schemata fulfill the function of contrasting Gestalten against a background that is itself no longer part of that Gestalt. The smooth surface of the water, by contrast, is ground without Gestalt — a homogeneous continuous stimulus of the perceptual medium, whose evolutionary biological purpose actually lies in the generation of form within it.

The feeling with which one reacts to such an emptying of the perceptual world has nothing to do with the affect that arises during the experience of the beautiful: the beautiful landscape, the beautiful vase, or the beautiful plumage give pleasure; the experience of a sublime landscape or sublime silence, on the other hand, strikes one with awe. Not pleasure, but awe is the affect that accompanies the experience of the sublime. Kant had already described the feeling of the sublime as a specific kind of "wonder" [*Verwunderung*]. One is fascinated not by a particularly harmonious phenomenon, but by the fact that one sees or hears something that is actually an "impossible" perception. Awe registers a perception in which there is "nothing" to perceive.

The gaze out over the sea appears sublime not only because of the empty surface of the water, but also because it reaches all the way to the horizon. Many animal species, as predators or prey, rely on estimating distances for attack and flight. This requires a schema of proportion, with the help of which the diminished size of a distant Gestalt can be converted into a behaviorally relevant distance. As with the experience of contrastless emptiness, the perceptual apparatus encounters an anomaly here as well: the schema of proportion converges toward $1/\infty$. One marvels at an "impossible" distance that cannot be estimated and which is therefore registered as infinity.

While the experience of beauty is based on a hyperfunction of perception, the experience of sublimity is based on a dysfunction. Whether it is the eye of an eagle or a fly, it is adapted to its own specific ecological niche and enables distance estimations within a species-specific range. Anything that occurs beyond such "existential distances" holds no attentional value for animals; consequently, animals cannot experience their environment as something sublime. In human societies, by contrast, cultural motives can develop that encourage the gaze to wander into such behaviorally and biologically meaningless distances.

If one believes, for example, in the myth that Poseidon is a god of the sea, then there is a good reason to look out into the open ocean. The strange feeling of sublimity that then sets in can be interpreted as an unmistakable sign that the god actually exists—so that the ocean validates the myth. Presumably, the sublime effect of natural phenomena was recognized early on and used to generate evidence within cults and religions. Depending on geographic conditions, the starry sky or a high mountain range can also act as a source of the sublime—the Greek gods, as is well known, lived on Mount Olympus.

It is extremely demanding to represent the aesthetic experience of the sublime in a painting, for it requires that the aesthetic principles of the sublime, such as 'infinity' and 'nothingness,' be reflected upon—as occurred in idealist philosophy and Romantic poetry at the beginning of the 19th century in Germany. Within this cultural context, a painting like Caspar David Friedrich's *The Monk by the Sea* (1808–1810) could emerge, in which the aesthetics of the sublime itself is brought to representation. Without the small, dark figure in the center of the painting, one would be dealing with abstract painting rather than a sublime picture; it is this tiny figure alone that calibrates the pictorial space to infinity. The monk provides perception with the unit of measurement needed to estimate the depth of the seascape, because in comparison with the small human form, the ocean appears immeasurably wide and the horizon immeasurably distant. Such a latent yardstick is at play in every experience of the sublime. Anyone looking out at the sea in the open air is still standing on a strip of shore that ends before them. In this sense, Friedrich's sublime painting reflects sublimity as an eigenvalue of human perception, because it demonstrates that the perception of infinite magnitudes is always based on a proportion of scale.

Infinite perceptual effects, which underlie the experience of the sublime, can be observed not only in the visual but also in the acoustic medium. A particularly impressive example is the minute of silence. What is improbable is not just a minute of silence in everyday life, but above all, that a massive crowd of people behaves completely quietly. Here too, suppressed coughing and quiet throat-clearing become the acoustic unit of measurement against which the silence is measured. In relation to these micro-noises, the all-encompassing weight of the soundlessness grows immeasurably, and an "infinite silence" spreads across the crowd.

The perception of the sublime is traditionally linked to "magnitude" [or *greatness*]: "We call sublime that which is absolutely great," as Kant states. "Absolutely great," translated into our terminology, means that—according to our human standards of scale—a height, width, depth, circumference, or volume appears infinitely large. In a culture in which the aesthetic experience of the sublime is sufficiently practiced, even a tiny stick figure standing lost in its DIN-A4 universe can appear sublime. The previous examples dealt primarily with phenomena of visual and acoustic emptiness, but ultimately, emptiness can also be understood as a special case of "formlessness." The aspect that truly matters in sublime perceptions of emptiness is that the mind's Gestalt-building process fails, and one is confronted with a formless phenomenon.

As with the idea of the beautiful, which can be defined via the two parameters of "order" and "contrast," the question also arises regarding the idea of the sublime as to whether "formlessness" and "infinity" are independent eigenvalues [or *intrinsic values*] of perception. Anyone who closes their eyes or covers their ears does not feel sublime—in this state, the organism simply does not expect perception. Similarly, an anechoic chamber or a darkroom are not places of sublimity; it is only when the senses are activated that one enters into a state of aesthetic awe. The tiny figure in Friedrich's *Monk by the Sea* fulfilled precisely this

function: to sensitize the viewer's perception to infinite estimations of scale. Conversely, looking into an infinite distance also presupposes that this landscape is largely emptied out. As soon as objects emerge in the middle ground, a finite proportion becomes visible, which annuls any potential perception of infinity. This is likely the very reason why Caspar David Friedrich painted over two sailing ships in his *Monk by the Sea*—a finite relationship had established itself between the monk and the hulls of the ships, weakening the experience of the sublime. What does not impair the experience of sublimity, however, but rather intensifies it, are the barely discernible seagulls in the painting, which act as trigger points for the sublime within the abstract landscape of color. In this respect, "infinity" and "formlessness" represent two complementary parameters with which sublime phenomena can be described.

The sublime painting unfolds its effect at a specific, optimal distance, which in Friedrich's work is defined both by the figure of the monk and by the picture frame. On the one hand, one must stand close enough to the painting to perceive the figure as a pictorial scale; on the other hand, one must maintain sufficient distance so that the entire seascape, and not just a section of it, appears within the field of vision. The abstract, large-scale paintings of Barnett Newman are also intended to evoke a sense of sublimity, which is only possible if one follows the artist's explicit instruction to view them from up close; only then do the fields of color completely fill the viewer's entire field of vision. When museums use these paintings merely as eye-catchers, even these oversized canvases turn into nothing more than colored rectangles on a white wall, failing to function as a sublime surface. Newman's largely monochrome paintings often feature a narrow vertical stripe of color, which likewise provides a scale for perceiving proportions. However, these stripes of color do not dictate a viewing distance with the same immediacy as Friedrich's monk, meaning that Newman's painting must supply the intellectual concept along with it.

Under the parameter of infinity, scholars have subsumed not only vast distances or expansions, but also those phenomena that strike the viewer as sublime due to their sheer numbers. Prominent examples include a clear starry night sky, a flock of migratory birds taking flight, or a military cemetery where cross after cross aligns into the horizon. What unites the sea of stars, the flock of birds, and the endless field of graves is that each consists of a multitude of identical elements: identical points of light, identical living beings, identical objects. Each of these elements composing the multitude is perceived as a single sensory stimulus. The relative homogeneity of the perceivable events, their mutual distinctness, and their elemental character are constitutive of the sublime of the vast number. Such unordered, supernumerary multitudes activate the perceptual apparatus to compute their potential for Gestalt-building, whereby the astonishing experience is that no Gestalt perception occurs, even though clearly defined Gestalt elements are recognizable everywhere. Awe is the bodily reaction to the fact that an elementary process of Gestalt-building is triggered but not fulfilled.

Looking into the starry sky demonstrates with particular clarity that the sublime of the vast number does indeed rest on blocked processes of Gestalt-building. Even if one knows that these are celestial bodies millions of light-years away from each other, one automatically begins to assemble the particularly bright stars into figurative constellations. The Big Dipper seen in the night sky gives pleasure and can be perceived as a beautiful Gestalt due to its form-like quality, but also due to its distinctive contrasts in brightness. If one consciously looks *through* this constellation, choosing not to perceive the faintly glowing stars merely as a background flicker, the constellation dissolves back into its elements and causes the infinite sea of stars to appear sublime. Here, within one and the same phenomenon, one can experience the difference between beauty and sublimity that Kant already clearly articulated: "The beauty of nature concerns the form of the object, which consists in limitation; the

sublime, by contrast, is also to be found in a formless object, insofar as boundlessness is... represented... in it."

In the *Analytic of the Sublime*, Kant had distinguished between the "mathematically sublime" and the "dynamically sublime" (whereby the adjective "mathematical" refers to measurable magnitudes, and "dynamical" relates to the Greek word *dynamikós*, which means something like "powerful," "forceful," and "strong"). Accordingly, the mathematically sublime manifests itself in that "which is great beyond all comparison," while the dynamically sublime manifests itself in relation to the "might" of nature. For Kant, the dynamically sublime is a phenomenon of reason rather than of perception, "for the sublime proper cannot be contained in any sensible form, but concerns only ideas of reason... Thus, the vast ocean heaving in a storm cannot be called sublime. Its sight is horrible; and one must have already filled the mind with all sorts of ideas if it is to be attuned by such an intuition to a feeling which is itself sublime."

The argument with which Kant derives the feeling of the dynamically sublime is based on an experience of impotence: "Bold, overhanging, as it were threatening rocks, thunderclouds towering up in the sky, moving along with lightning and crashes, volcanoes in all their destructive violence, hurricanes with the devastation they leave behind, the boundless ocean set into outrage, a high waterfall of a mighty river, etc., make our capacity to resist into an insignificant trifle in comparison with their might." This experience of impotence, which would immediately induce a negative affect of fear or anxiety, turns—according to Kant—into a positive feeling of sublimity. In the face of such vistas, human beings undergo an experience of difference in which they recognize themselves as beings of reason and not merely as beings of nature. In relation to this "nature," he writes, "the irresistibility of its might gives us... our physical impotence to recognize... but at the same time reveals... a superiority over nature"—the superiority of the human being as a moral, rational being who possesses the "power of reason" to conduct themselves with sovereignty toward their own sensibility.

It bears witness to Kant's intellectual honesty that he himself mentions the artificiality of this line of argument: "This principle seems, to be sure, too far-fetched and subtilized, and hence extravagant for an aesthetic judgment; yet observation of the human being proves the opposite." Yet what could be observed in humans back then—"the invincibility of their mind by danger"—is difficult to comprehend in unheroic, affluent cultures. Moreover, in a high-tech society, one no longer has to feel impotent in the same way as two hundred years ago. Ultimately, the technical reproducibility of the "dynamically sublime" through film, television, and video has meant that one can now perceive storms, volcanoes, thunderstorms, and natural disasters of all kinds purely aesthetically—that is, free from all background anxieties.

There is much to suggest that we must fundamentally start anew in our analysis of the dynamically sublime. The difference between the dynamically sublime and the mathematically sublime is exemplarily demonstrated between the stormy sea and the mirror-smooth sea. How is it possible that one can experience the windless calm and the hurricane upon the ocean equally as sublime phenomena?

Among the early evolutionary achievements of animals, one must count not only perceptual schemata with which distance can be estimated, but also those that allow for inferences regarding physical forces. There are many situations in which animals must decide whether a territorial battle with a conspecific is worthwhile or whether an attack on a large prey animal

is promising. Because avoiding hopeless confrontations offers an evolutionary advantage, such perceptual schemata are likely to have developed early in the animal kingdom. In our own everyday lives, we too constantly link objects and phenomena with an expectation of the forces they might release. These force-schemata are retrieved whenever we come near forces of nature such as hurricanes, volcanic eruptions, waterfalls, or a heavy surf, and our expectation is quite right that the forces at work here are—for us—infininitely large and powerful.

While the aspect of the "infinite" can easily be reconstructed in the case of natural forces, the aspect of "formlessness" is not immediately recognizable. If one perceives a surf with two-meter-high waves from a distance of one hundred meters, one sees time and again a single wave that builds up and breaks on the shore. This natural spectacle is imposing for a while, but it is not sublime. If, however, one approaches the surf to within a few meters and the waves crash down with full force directly in front of one, then one experiences the forces released by nature not only as "infininitely" large, but it also results in a failure of Gestalt perception. Whether one actually experiences such forces of nature as sublime depends heavily on whether one experiences them from a distance or up close and personal. While during the experience of the sublime in the face of an infinitely vast and silent surface of water one finds oneself at the lower stimulus threshold—which leads to a perception of emptiness—one finds oneself at an upper stimulus threshold when facing masses of water that appear infinitely powerful, where the pain threshold can also be exceeded. The surf is deafening, and the sea rolling toward one is a visual super-phenomenon. This sensory overload of the faculties throws the human being into a dysfunctional mode of perception in which there are hardly any perceptive resources left for normal Gestalt perception. Each crashing wave floods the senses; any concentrated perception of a form is marginalized by the intensity of the event. One must expose oneself to a roaring waterfall, a hurricane, or a volcano to such an extent that one is overwhelmed by one's own sensory impressions; it is this overstimulation alone that leads to that anesthesia of form (*Formanästhesie*) which strikes one with awe.

Thus, the dynamically sublime can also be described as a perception of "infinite formlessness," even though the failure of form perception within consciousness is generated not by a deficit, but rather by a surplus of sensory stimuli. With this naturalistic approach based on the aesthetics of perception, one can also agree with Kant that "nature... excites the ideas of the sublime most in its chaos, or in its wildest and most irregular disorder and devastation, provided it allows magnitude and might to be seen."

Sublimity is an aesthetic eigenvalue, which can manifest itself as the sublime of magnitude, number, and strength. In all three cases, normal Gestalt perception is compromised, marginalized, or blocked, so that the sublime can generally be described via the element of formlessness in all its variations, such as emptiness, the amorphous, the diffuse, or the chaotic. On the other hand, this idling of Gestalt perception enables the presencing of magnitudes that can only be registered by a finite perceptual apparatus as "infininitely great." While the experience of beauty is a hyperfunction of perception, the experience of sublimity occurs when the perceptual apparatus enters an anomalous operational mode. Both the elements (the sensory stimuli) and the relations (the perceptual schemata), from which strictly coupled forms (Gestalten) are normally built, are activated—and yet no strict connection between the elements occurs, and consequently, no form-building takes place (Fig. 7).

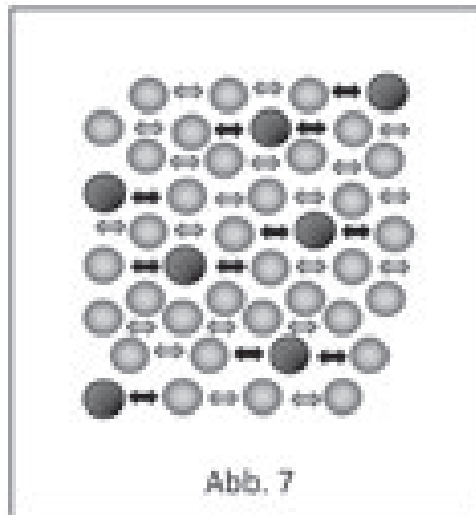


Fig 7

Event (*Ereignis*)

The analysis of aesthetic eigenvalues [or *intrinsic values*] is based on a two-pole model of perception containing a Gestalt-building component and a concentration component. Thus far, this investigation has moved exclusively on the side of Gestalt-building, inquiring into the secondary effects that can accompany Gestalt perception. In doing so, it was demonstrated that "beauty" can be reconstructed as a highly Gestalt-like (contrastingly ordered) perception, and "sublimity" as a highly formless (infinitely empty) perception. Accordingly, "beauty" and "sublimity" represent two eigenvalues of Gestalt perception that trigger the affect of pleasure and awe, respectively. The question now arises whether corresponding eigenvalues can also be found on the side of perceptual concentration.

Attention is directed not only toward currently conscious perceptions, but also toward potential Gestalten—that is, toward the diffuse patterns of stimuli that appear vaguely on the horizon of perception. It is an early evolutionary achievement essential for survival that animals can instantly redirect their perception toward unspecific stimuli, regarding which it is still completely undetermined whether they are behaviorally relevant or not. The Gestalten that are already being perceived, and to which more or less attention is allocated, almost always possess an estimable, "finite" relevance. By contrast, a sensory impression that is radically new could be of "infinite" relevance at any moment. For this reason, a highly developed perceptual apparatus possesses a preference not only for the identifiable Gestalt, but also for the novel stimulus. For perceiving beings, the novelty of a phenomenon is just as much a value as its Gestalt-like quality itself.

If it is a general function of perception to be able to focus on novel phenomena, one may ask whether there are extraordinary perceptions that are registered as particularly "novel" and can consequently draw attention to themselves with exceptional strength. Such a heightened novelty value is possessed by events that are "absolutely" new to perception. Attention cannot escape the lightning bolt that suddenly flashes or the clap of thunder that suddenly roars. No matter what a perceptual apparatus is occupied with at that moment, if there is such an abrupt rupture in the continuum of the visible or the audible, the entirety of concentration is directed toward the suddenly perceived phenomenon.

The parameters by which the eventfulness of a phenomenon can be described are evident: the flash of lightning and the clap of thunder are both suddenly occurring and extremely intense stimuli. It therefore seems plausible to assume that suddenness and intensity determine the event-character of a perception. A thunderstorm also clearly reveals the affective response with which the body reacts to a perceptual event: attention is completely captivated. The event does not please in the way a beautiful object does, nor does it inspire wonder like a sublime landscape; rather, it seizes and entralls the one who perceives it.

The sudden by itself is not yet an aesthetic value in its own right, for the attractive power of an event also depends on its intensity. Only when a sudden stimulus exceeds a certain threshold of intensity does it acquire the power to direct attention toward itself. The thunderstorm is the exemplary natural event not only because lightning and thunder combine an acoustic with a visual event, but also because these events, in their intensity—that is, in the strength of their sound and light—approach the limits of perceptual pain.

The relationship between suddenness and intensity can also be analyzed from the opposite direction. In that case, it becomes clear that intense perception by itself is not an event either. One does not necessarily increase the event-character of a phenomenon by continually heightening the intensity of sensory stimuli. As long as it remains a continuous stimulus, one is merely dazzled by glaring light or engulfed by deafening noise. In an event, by contrast, strong stimuli suddenly assert themselves over weaker ones within the medium of perception.

An event, too, is a perceptual effect which, like the aesthetic value of beauty, constitutes a hyperfunction of perception. When an event triggers perception, the elements of the perceptual medium become extremely activated, yet without producing loose couplings among those elements (Fig. 8). Events possess no value for the formation of perceptual Gestalten; rather, they serve solely and exclusively to coordinate attention.

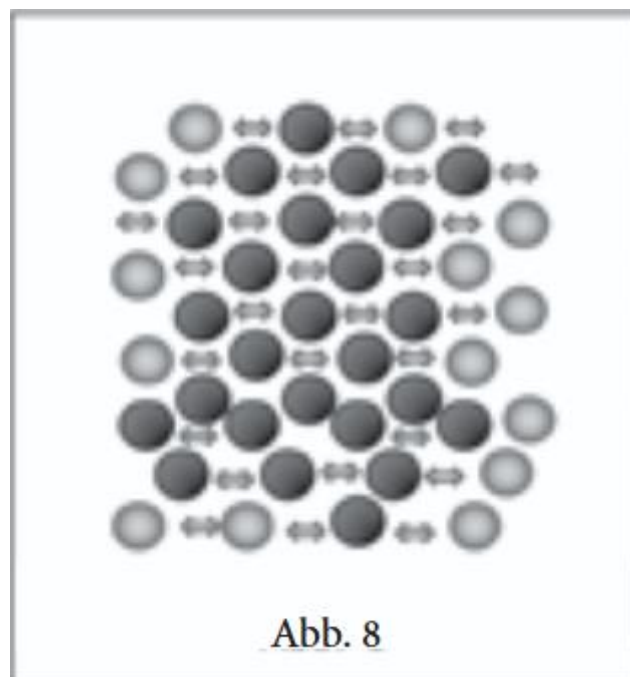


Fig 8

As intrinsic values of perception, events are exploited by biological evolution no less frequently than the intrinsic value of beauty, which permits the development of sexual

ornaments. In almost all animal species, events are linked to various stimulus-response patterns and can trigger flight behavior, freezing in shock, or aggressive behavior. Furthermore, animals themselves develop event-like behaviors, for example to deter enemies or communicate with members of their own species. The alarm calls of birds, the barking of dogs, a bear rearing up on its hind legs, the hissing of cats with arched backs and erect tails, or the inflation of a pufferfish all fulfill such a biologically coded event function.

The first “instruments” used to produce events artificially were probably two stones, sticks, or bones struck against one another. Less obvious, however, is the event-character of prehistoric visual art. At first glance, one is inclined to associate the aesthetics of cave painting with the aesthetic value of beauty. The woolly rhinoceros from the Chauvet Cave (Fig. 9) possesses all the characteristics of a perfect drawing, rendering a highly distinctive and expressive image of the animal with only a few lines. Yet these animal drawings were not originally viewed as they are today in well-lit reproductions. They were seen in remote sections of caves, illuminated only by sparse, flickering torchlight. The drawn horses, rhinoceroses, deer, and lions would suddenly emerge from the darkness, appear indistinctly and unsteadily on the rock walls, and then disappear back into shadow with every step or movement of the observer’s head. Thus, the rhinoceros’s elongated horn is drawn into a protruding section of rock, so that depending on the viewing angle it may be concealed within the stone, appear distorted, or suddenly stand out. Under such viewing conditions, the animal figures likely functioned more as events than as stable images. The beauty of prehistoric painting—which fascinates us so much today—was, at that time, subordinate to its event-character.

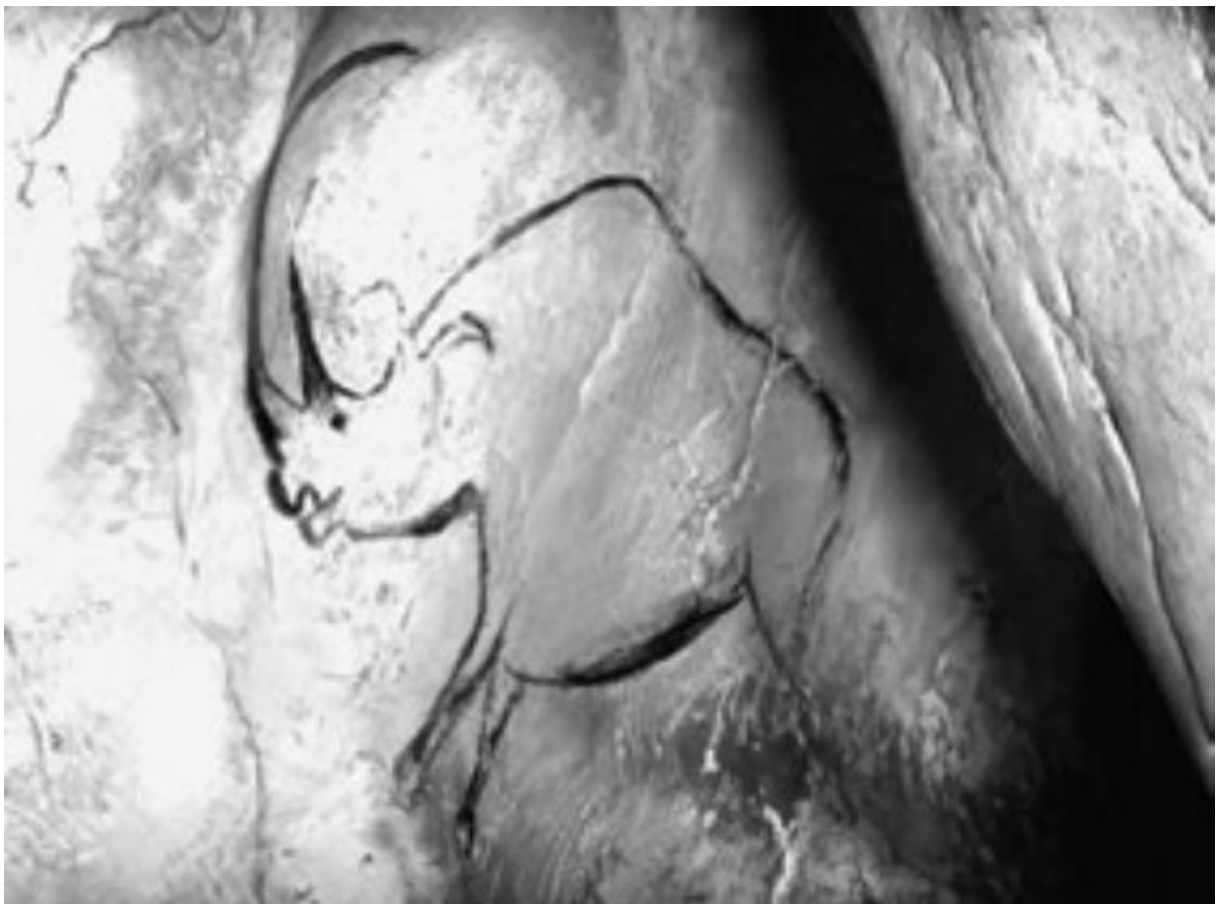


Fig. 9. Drawing of a woolly rhinoceros, Chauvet Cave, approximately 32,000 years old.

There is something paradoxical about the fact that prehistoric art was capable of producing aesthetically perfect images, yet created these works in places where a large part of their aesthetic effect could not fully unfold. On the one hand, it may be assumed that the aesthetic evolution of these images took place within the context of a cult. On the other hand, the cult itself seems to have regulated the placement of the images, ensuring that they were created not near the entrance of the cave but deep within its interior. This raises the question of why prehistoric art developed a sophisticated aesthetics of beauty only to have these works subsequently experienced through an aesthetics of eventfulness.

The only profound theory that has been able to explain why prehistoric paintings are found in such inaccessible parts of caves was put forward by the archaeologist David Lewis-Williams in his book *The Mind in the Cave*, in which he demonstrates that this art was intimately connected with shamanistic practices. Thus, if one attempts to understand cave painting as an aesthetics of eventfulness, there is no way around engaging more closely with the groundbreaking work of Lewis-Williams. His research provides a point of departure that can both be built upon and, in certain respects, challenged when it comes to explaining the beginnings of the aesthetic evolution of prehistoric art.

One may assume that at least some cave paintings depict the visions of shamans. Experiments have shown, for example, that people in trance states experience precisely those dots, zigzag lines, and geometric patterns that are also found on cave walls. Alongside these so-called entoptic phenomena, three-dimensional objects with which people are culturally familiar also appear as flat images in altered states of consciousness. Since we know that the perception of two-dimensional images is not innate but must be learned culturally, David Lewis-Williams concludes that it was an image-generating cult during the Ice Age that first made painting possible: “Here, I suggest, lies the answer to the riddle of the two-dimensional image. Human beings did not ‘invent’ two-dimensional images, nor did they discover them in natural signs [...]. The first two-dimensional images were therefore not two-dimensional representations of three-dimensional things in the real world, as researchers have always assumed. Rather, they were ‘fixed’ mental images.” This argument appears all the more convincing because the paintings are located in places whose remoteness subjected people to sensory deprivation, a condition known to induce hallucinations—that is, precisely the kind of altered state of consciousness associated with shamanic experience.

From the standpoint of aesthetics, however, one may ask how an aesthetic evolution could emerge under the conditions of shamanistic practice. Visions are extremely unstable images, since they occur within the minds of individuals and cannot be observed by other members of the group. In a society unfamiliar with the perception of two-dimensional images, mental pictures reproduced by a shaman would not have been communicable to the group and therefore could not have initiated an aesthetic evolution in either the perception or production of drawings. Moreover, the shamanism theory does not adequately explain the aesthetic quality of cave paintings, which exhibit perspective, abstraction, and shading—features that would have been impossible to develop without close observation of nature outdoors and extensive practice in daylight. The clear, fluid, and confident line work visible in the rhinoceros with the elongated horn could only have been achieved by someone who had already produced hundreds of rhinoceros drawings. Equally striking is the fact that the two anatomically distinctive features of the woolly rhinoceros—the prominent shoulder hump and the long horn—are deliberately exaggerated. This increases the recognizability of the animal and thus the visual force of the drawing. Such artistic choices testify to a trained eye and a practiced hand, skills that can only be acquired through the imitation of nature. Likewise, the shading beneath the rhinoceros's belly and the perspectival foreshortening of its massive body

derive from knowledge rather than visions. All these details suggest that the relationship between shamanism and cave painting should be reconsidered.

Lewis-Williams proceeds from the premise that nature contains no flat images that can be directly imitated. Yet hunters who butcher animals would naturally know that their blood-smeared hands can leave a two-dimensional imprint on skin or stone. This was surely the original observation that led to the positive and negative handprints found on cave walls. Footprints and the impressions left by animal carcasses in sand likewise produce distinctive contour lines suitable for two-dimensional drawing. Above all, however, there are shadows, whose outlines can be observed and recorded in everyday life. A natural drawing surface, for example, would be a free-standing rock face on which, when the sun is low, the sharp silhouettes of trees, humans, or animals are projected and can be traced directly. If such drawing practices became integrated into a cult, they could already have set in motion an aesthetic evolution that, through aesthetic imitation, led to ever more striking and refined drawings. Once an interest in drawing had emerged, everyone in the group could participate in this art—with a hand axe on a rock wall, a piece of charcoal on stone, or simply a finger in damp riverbank sand. Because especially distinctive drawings are the easiest to recognize as two-dimensional images, they would also, at least initially, be the easiest to imitate.

The origin of drawing, therefore, may very well be traced—contrary to Lewis-Williams's premise—to the imitation of nature and certainly did not arise from shamanism alone. If this is correct, however, one is once again confronted with the puzzle of why such an image-centered cult would later have moved into the depths of caves. Aesthetic reasons may well have been decisive here. In an initial phase, the art of drawing could have developed independently of shamanism in the open-air settings provided by nature. The images would have continued to fulfill their intended ritual function so long as each generation produced representations that were increasingly vivid, fascinating, and technically accomplished. Every time the cult succeeded in aesthetically surpassing the existing world of images, the newly created drawing became a testimony to its power.

Later, however, a cult that had tied its own authority and evidential force to increasingly elaborate painting may have encountered a problem of its own making. If one assumes that the aesthetic impact of prehistoric painting was interpreted as a sign of “magic,” then people would also have experienced the fact that images gradually lose their magical power over time. In terms of perception theory, this simply means that even highly striking works of art become subject to habituation when viewed repeatedly.

At this point, prehistoric painting may have sought the protective concealment of caves and entered a second phase—namely, the true phase of cave painting. At some point, people may have noticed that the magical effect of animal figures returned and could be preserved when they were painted in remote caves. There, the animal images appeared under ever-changing lighting conditions and could no longer imprint themselves upon memory as stable, distinctive, and self-identical forms, as they would in daylight. If access to the images was made extremely difficult and if the art of painting came to be practiced only by shamans (who possessed exclusive access to the caves), then it becomes conceivable that a cult could maintain a stable relationship to its own image production over thousands of years. It is also possible that it was only during stays within the caves that people discovered the hallucinations through which an older hunter-gatherer cult became enriched with shamanistic techniques. In this scenario, prehistoric cave painting would have differentiated itself through the aesthetic value of beauty, yet could preserve its effectiveness only as an aesthetics of

eventfulness. Shamanism would not have given rise to cave painting; rather, cave painting would have given rise to shamanism.

This brief excursus on Lewis-Williams's theory of shamanism is intended above all to show that, while the theory can explain very well why prehistoric painting existed specifically as cave painting, it need not also bear the burden of explaining the origin of art itself as a product of shamanism. Aesthetic evolution could at any time have begun with the intrinsic aesthetic values of perception and, through the process of aesthetic imitation, have produced distinctive drawings and sculptures. Within a shamanistic cult, moreover, it is obvious why one would be more interested in an aesthetics of eventfulness than in an aesthetics of beauty.

Prehistoric humans were already confronted with two different forms of events. On the one hand, there were thunderstorms, solar eclipses, passing comets, meteor impacts, volcanic eruptions, the roar of a nearby lion, or the sudden appearance of a rhinoceros in the grass. These may be called unconditional events, insofar as they are capable of capturing the entirety of one's attention solely through the strength of their sensory impact. By contrast, cave paintings constitute events that occur only under very specific conditions of perception. They are defined by a particular event horizon that shields perception from all other possible perceptual events. In this sense, merely entering the cave already established that one would encounter only animal figures on the rock walls by torchlight, without having to expect storms, living animals, or any other surprises.

Even today, images can still function as events, although they follow a different logic of eventfulness than cave painting. Photography, in fact, was predisposed from the outset to develop an aesthetics of events. Because photographic equipment was initially heavy and cumbersome to operate, however, photography could not immediately realize this aesthetic potential and instead first sought to secure its contested status as an art form by imitating painting. This development reached its peak with the Pictorialists around 1900, who deliberately employed soft-focus effects in order to achieve painterly qualities in photography. By the beginning of the twentieth century, portable and easy-to-use cameras had become available, making it possible for an uninvolved observer to capture a photograph at any moment. When the first mass-produced 35mm camera—the Leica I—appeared on the market in 1925, the snapshot had already established itself as a distinct genre of photography. The photographic medium, which made the snapshot possible, eventually gave rise to its own aesthetics of eventfulness.

Photographers such as André Kertész, Brassai, and Henri Cartier-Bresson began to search the visible world through their camera lenses for motifs that had never been seen before or that could not be seen because of their fleeting nature. An image emerges from the continuous stream of perception, immediately captures the photographer's attention, and prompts the pressing of the shutter. The photographic gaze thus enabled a second-order observation—a perception of visual perception itself directed toward the unique and singular perceptual event. As with photography generally, intensity cannot be tied to any specific stimulus strength; rather, it is determined by the novelty of the phenomenon being seen. A photograph that becomes an event has no model or precedent; it preserves an “unseen image” within its rectangular frame.

Images can function as events only when they are surprisingly new to the viewer. Cave painting and photography developed two contrary strategies for achieving this. Prehistoric painting preserved the novelty of images by restricting access to them and exposing them to unstable conditions of observation, preventing them from being remembered as fixed and self-

identical images. Photography, by contrast, preserves novelty through an intensified practice of discovery. It seeks to capture moments within the continuum of visual perception that are unrepeatable as motifs, moments of movement, framings, perspectives, or patterns of shadow.

Ambivalence

The investigation of the intrinsic values of concentration began with the question of whether there are perceptual phenomena that are inherently interesting for attention itself. On the one hand, we have seen that it represents an evolutionary advantage when the capacity for concentration develops a preference for any new stimulus. On the other hand, there is also a negative mechanism of attention that manifests not in curiosity about new phenomena, but in weariness and boredom with already perceived “old” phenomena. Gustav Theodor Fechner already noted: “According to innate disposition, in order to feel comfortable in active or receptive engagement with an object, human beings require a certain variation in the moments of activity or impressions, which the object must provide through a diversity of points of engagement. If this is lacking, the object produces an unpleasant impression of monotony, uniformity, dullness, emptiness, barrenness, poverty, and thereby drives one to turn to other objects.”

Complementary to the preference for the “new,” perception also possesses a dispreference for the “old.” The capacity for inattention is likewise an evolutionary advantage for animals that must orient themselves perceptually. Once an environmental event has been identified, either a specific behavior follows the stimulus, or it is judged uninteresting. Attention then wanders and scans the environment for other novel phenomena. Perception is therefore subject to a double economy of attention, based both on the capacity to become attentive and the capacity to become inattentive.

The spontaneous turning away from currently present phenomena and the turning toward events at the perceptual horizon that have not yet been focused on is a mechanism of inattention that allows a further intrinsic value of perception to be defined. What is particularly interesting is not only the “absolutely new” phenomenon—the event that captures all attention—but also a perception that can renew itself in relation to a phenomenon. This occurs precisely when perception encounters ambivalent phenomena and enters a loop of attention. The thesis is thus that ambivalence—analogue to beauty, the sublime, and the event—is a fourth intrinsic value of perception.

The affect with which the human body responds to an ambivalent perceptual situation is tension. The ambivalent phenomenon keeps perception in suspense because it promises a determinate form but does not fulfill this promise. Beauty pleases, the sublime inspires awe, the event captivates, but ambivalence makes perception exciting.

Just as the golden ratio is an emblem of beauty, so a reversible image (vexier image) is the emblem of ambivalence. In such images, two different figures can be perceived, but only in such a way that one sees either one form or the other, never both at the same time. The Necker cube (Fig. 10) is a simple and illuminating example. It contains exactly two points at which a horizontal and a vertical line intersect, but there is no indication of whether the vertical line lies in front of the horizontal or vice versa. This depth dimension, which every three-dimensional cube possesses, is absent in the two-dimensional representation, so that the two

squares can equally be perceived as the front or back side of the cube. Technical drawings avoid this ambiguity effect by representing hidden edges with dashed lines, thereby eliminating the information deficit of the Necker cube. Strictly speaking, such flip-image effects occur only in two-dimensional representations—they are, as the name suggests, image effects in which there is a complete indifference between figure and ground.

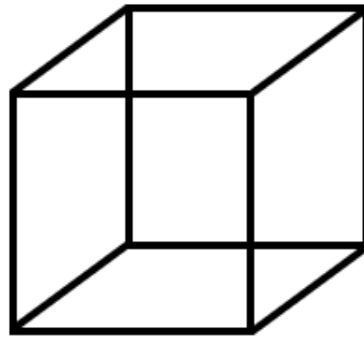


Fig 10 Necker cube

In nature, flip-image effects are not intended, insofar as perceptual capacities have evolved in such a way that they serve the unambiguous identification of forms. Animals do not perceive ambivalence; at most, they can misperceive—like the shark that mistakes a surfer for a seal. In underdetermined perceptual situations, species-specific behavioral patterns follow: some animals respond with curiosity and approach the unknown object; some observe or listen attentively until the perceptual puzzle resolves itself; others flee as a precaution.

As with the aesthetic experience of the sublime, the perception of ambivalence is also a dysfunction of perception. Just as a special reason is required to let the gaze drift into the distance where there is, strictly speaking, nothing to see, so too a special motive is needed in order to interpret an indeterminate perception as ambivalence. The ivory figurine of a lion-man (Fig. 11) suggests that such a cultural motive already existed 40,000 years ago in the Swabian Jura. The approximately 10 cm tall sculpture was carved from the tusk of a young mammoth and shows, according to the common interpretation, the body of a human with the head of a lion.



Figure 11. Lion-man figurine carved from mammoth ivory, approximately 40,000 years old. (Photo: Dagmar Hollmann / Wikimedia Commons)

However, due to the body proportions (long torso and short legs) and the incomplete reconstruction, it could also represent a lion in an upright human posture. It is assumed that the lion-man depicts a shaman who disguised himself as a lion during ritual practices.

Regardless of which belief system was associated with the figure, for a community of hunter-gatherers this ambiguous form must have been an extremely compelling perceptual object, one that could focus attention on a cult far more effectively than an ordinary animal figure. Since this is one of the largest sculptures from the Ice Age ever found—its production, using reconstructed stone tools, required approximately 360 working hours—its ritual significance

must have far exceeded that of other animal figurines, which are usually only a few centimeters in size.

An animal such as a lion would likely have been observed many times under unfavorable viewing conditions—either because the distance was great and the animal did not clearly stand out from the background, or because haze made its contours only vaguely visible, or because its shape was distorted by shadow. However, once a lion-man sculpture has been held and examined, in all such cases one would be inclined to perceive a “lion-man.” Once such a hybrid being exists as a visible and tangible small sculpture, perception among hunter-gatherers acquires a kind of training object for recognizing such hybrid forms in nature.

In this scenario, the sculpture would have played a central role in producing evidential perception within a lion-man cult grounded in a narrative of the lion-man: it would have enabled members of the group to verify with their own eyes that the lion-man truly exists. Whenever perceptual form in nature enters gray zones, hunters and gatherers could recognize that legendary being whose “image” they already knew from the sculpture. The lion-man figurine would thus have produced perceptual evidence in nature for the cult.

Prehistoric art appears to have been able to develop through several intrinsic values of perception. Small sculptures that exploited the effect of aesthetic ambivalence would have been far less vulnerable than prehistoric painting to losing their “magic” or “enchantment.” Drawings can be produced quickly and with little effort; drawing can be imitated and learned by many members of a group; and drawings remain visible on stones and rock walls for long periods of time. Conditions such as these, which make reproduction relatively easy, would over time have destabilized any cult that relied upon the magic of images and may have driven prehistoric painting into the darkness of caves. By contrast, sculptures were available only in small numbers because of the labor required to produce them and could, depending on the needs of the cult, easily be withdrawn from public view and access. More importantly, however, the sculpture did not have to generate “supernatural” powers through its own aesthetic qualities. Instead, it enabled hunter-gatherers to perceive the natural world around them in a “magical light.”

It may be assumed that such a lion-man cult was able to reproduce itself stably over thousands of years. At some point in history, however, the magical relationship to the world maintained by hunter-gatherers could no longer be sustained. In the scenario developed here, this may be attributed to a loss of function of visual ambivalences.

The production of perceptual evidence that the lion-man sculptures had previously provided could have been interrupted by a change in observational conditions—for example, when the invention of the bow and arrow made it possible to hunt lions successfully. In principle, every lion that is killed reduces the likelihood of encountering a lion-man in nature, rather than merely catching a fleeting glimpse of a lion.

But if the lion-man narrative is no longer confirmed by lived experience of nature, then the sculptures also lose their ritual significance. Eventually, people may no longer understand why they should continue carving a figure that combines human and animal features. The lion-man probably shared the fate of later beings such as the Minotaur, the Mermaid, the Sphinx, or the Griffin. Because of changing conditions of observation, these figures lost their cultic or religious function and became merely mythical creatures. Accordingly, a concept of aesthetic ambivalence must be formulated in such a way that it is resistant to disenchantment or resistant to rational explanation (*aufklärungsresistent*). Aesthetic ambivalence always

arises in relation to familiar forms that can be perceived both as themselves and as something else. Even the Necker cube must first be recognized as a drawn cube (and not merely as twelve lines on a flat surface) before one can discover the ambivalence between its two possible perspectival interpretations.

Perceptual ambivalences arise whenever the medium of perception is stimulated by a pattern of stimuli that potentially permits two contradictory processes of form formation. In the media-theoretical model, this can be represented as two different stable couplings attempting to establish themselves simultaneously within the medium of perception (Fig. 12). Such ambiguous formations can occur only when the informational content of a perceived form remains underdetermined, both with regard to contrast and with regard to the relevant schemas of order. On the one hand, a form loses its distinctness as a form when it merges with its surroundings—that is, when the difference between figure and ground becomes increasingly low in contrast. On the other hand, the recognizability of a form diminishes when it becomes deformed. This leads to the assumption that blur (*Unschärfe*) and estrangement or defamiliarization (*Verfremdung*) are the two perceptual parameters through which phenomena of ambivalence can be produced and described. As with every analysis of intrinsic perceptual values, it would now be necessary to show that these are two variables that complement one another reciprocally in manifestations of ambivalence.

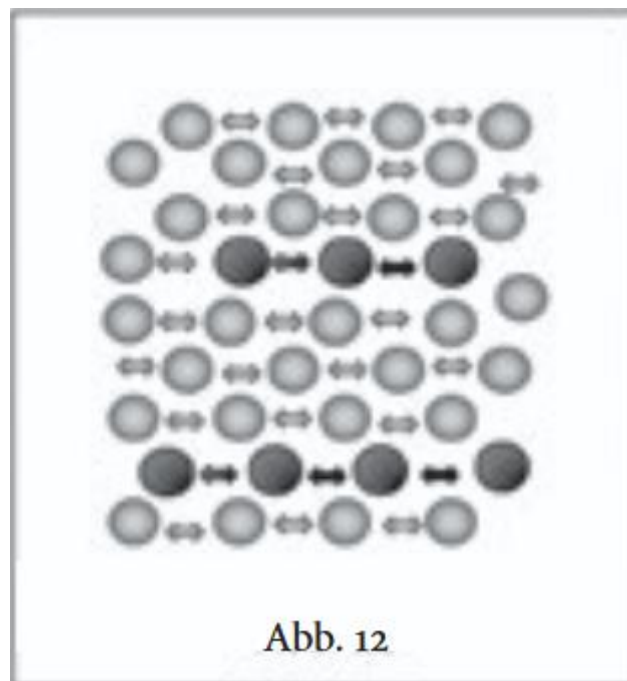


Fig 12

Although blur (*Unschärfe*) was a central motif of Romanticism, and photography initially attempted to legitimize its claim to artistic status through a variety of blurring effects, it nevertheless never became a central aesthetic category in the development of modernism. Rather, “blur gradually fell into the background as a stylistic device that was too harmless, too indecisive.” But what exactly constitutes this harmlessness? To be modern in the mid-nineteenth century meant to be “absolutely modern.” With Arthur Rimbaud’s famous slogan, a conception of art emerged that no longer granted aesthetic privilege to beauty but instead to the aesthetically new. Pure blurring effects, which merely cause the distinction between figure and ground to disappear, satisfy this demand for “absolute novelty” only to a limited extent. The blurred form certainly delays perception, but boredom, weariness, and disinterest are

suspended only temporarily. Once the blurred figure can finally be identified through a somewhat greater expenditure of attention, it loses its original attractiveness just like any other form. The ambiguous form, by contrast, does not merely lead to a finite delay of perception but to an infinite delay, because it can never be completely resolved. Such irresolvable ambiguities cannot be accounted for through the parameter of blur alone. They arise only when a form is also transformed as a consequence of its indistinctness—for example, when at dusk a lion merges with the shadow of its surroundings and, with a distorted body and monstrous head, appears before a Stone Age hunter.

For a technique of defamiliarization to produce an aesthetic ambivalence, an additional condition must be fulfilled: the procedure itself must not be calculable. One immediately notices the elongated nose that distorts a face; one instantly recognizes the two creatures from which the lion-man is composed. A defamiliarization that can be so easily reconstructed may delay perception, but it does not create a substantial perceptual problem. Only when the traces of alteration are blurred, when the otherness can no longer be derived from an original form and instead becomes a puzzle, do irresolvable perceptual paradoxes arise. In other words, it is not enough that blurring effects distort a form; the effects of distortion themselves must also become blurred if perceptual ambivalences are to emerge.

Art that today seeks to achieve its effect through the intrinsic aesthetic value of ambivalence must make its perceptual ambiguities resistant to observation and interpretation. In this sense, the towering figures of Alberto Giacometti cannot be visually deciphered in the same way as the lion-man from the Lone Valley, which more than 40,000 years ago undoubtedly produced a powerful experience of ambivalence but whose effect can now be seen through in the absence of the social support of a cult. Like the lion-man, Giacometti's sculptures also result from a strategy of defamiliarization: the human figure is stretched to an extreme degree. If his figures reproduced the human form naturalistically and in detail, we would inevitably be dealing with something like a cartoon figure. The sudden recognition of a human being in such an exaggerated shape would function as a joke. Yet Giacometti avoids this clear and unambiguous surprise effect through the use of artificial blurring. In the rough, dark surface of the bronze, the fingerprints and the additions and removals of material from the original plaster model remain visible. The traces of the sculpting hand overwhelm all figurative detail. As a result, the transitions between the limbs become indistinct; the boundaries between legs, torso, neck, and head grow fluid; the feet of a standing figure merge into a single lump-like foot; the arms lack elbows and the legs lack knees. The blurred surface texture reinforces the metallic character of the elongated figure, deprives it of its representational quality, and removes any sense of irony. Only this complementary interplay between elongation and formlessness produces the indecisiveness in Giacometti's sculptures that continues to fascinate perception:

Art began, in the middle of the twentieth century, to detach itself from the aesthetic value of beauty and to take an interest in the alternative aesthetic values of the event and of ambivalence. The traditional values of beauty and the sublime were, if explored at all, explored in an abstract manner—that is, detached from classical systems of representation. The striking affinity between works of prehistoric art and those of Classical Modernism can be readily understood if one assumes that there are four fundamental aesthetic values that can function as evolutionary attractors at the beginning of every aesthetic evolution. Prehistoric art, with its cave paintings and small sculptures, stands at the beginning of aesthetic evolution. Through imitation, it was already capable of producing accomplished drawings and sculptures, yet it did not progress beyond the value of beauty to a higher-level iteration of formations of order and contrast.

Theoretical Model of Aesthetic Values

The prominent position of beauty, the sublime, event, and ambivalence in aesthetics is evident not least in the fact that it is within their field of tension that space and time become subjectively experienceable. If one looks at the theoretical model of aesthetic values (Fig. 13),

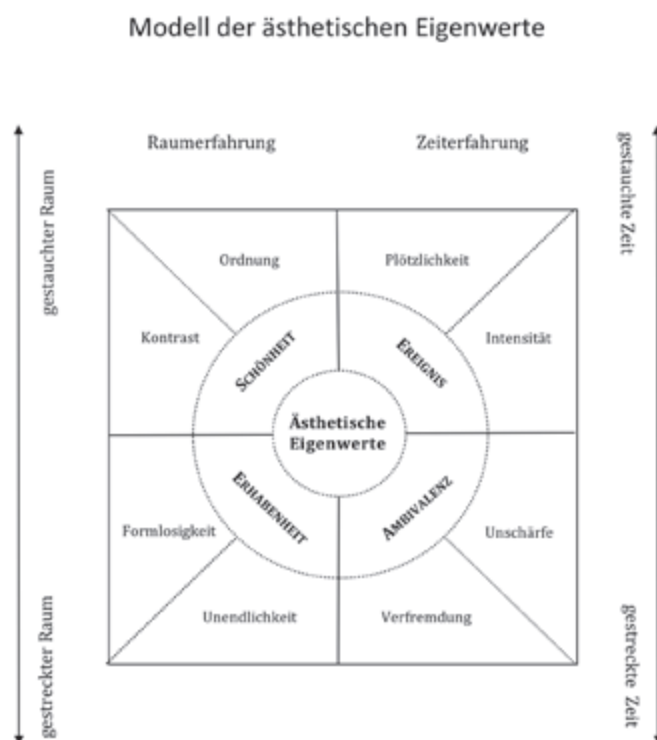


Fig 13

one sees that the values of beauty and the sublime are arranged under the aspect of space, while the values of event and ambivalence are arranged under the aspect of time. Normally, an experience of space is always an experience of distances and boundaries and presupposes the existence of objects between which space can be stretched. Empty, unbounded space cannot be perceived as such. Likewise, we have no means of experiencing the pure flow of time; time becomes perceptible only when it can be gauged through the succession of events. Our everyday world is structured both by ordinary objects such as tables and chairs and by everyday cycles such as getting up in the morning and going to bed in the evening. As a result, we are constantly having experiences of space and time that are synchronized with our knowledge of the dimensions of physical space and the measurements of physical time. In everyday life, physical spacetime is automatically brought into alignment with subjectively experienced spacetime.

This everyday synchronization is suspended in aesthetic experience, which is generated through the intrinsic values of perception. The experience of beauty is an intensified experience of form, in which the individual phenomenon acquires an absolute presence that can hardly still be relativized in relation to other, neighboring forms. The beautiful form draws all perceptual resources toward itself and is, more or less, present without space. Whoever is fascinated by beauty perceives only what is close at hand, with the consequence

that larger distances are hardly registered. Aesthetic experience leads to the impression that the viewer's "inner scales" are shortened here, and the unusual sensation of a compressed space arises. The White Cube, which removes almost all objective reference points from spatial perception, reinforces precisely this spatial compression toward which the beautiful artwork itself already tends.

In contrast, the experience of the sublime produces an opposite spatial effect and, compared to everyday experience, leads to an extension of space in subjective experience. The relation of figure and ground in these processes of formation is inverted; perception abstracts from the figural character of visible and audible objects and uses them only as elementary units of measurement that serve to estimate infinite spatial relations. Unlike within a lifeworld horizon of experience, space as such now becomes present and appears to the subject as a space extending into infinity.

Just as a difference between experienced and physical space is formed within the tension between the beautiful and the sublime, a difference between experienced and physical time is generated through the two aesthetic values of event and ambivalence. An event binds all attention for a moment; in this eventless time window, time stands still for the experiencing subject. If perception is drawn into entire chains of events, in which the flickering of one event—before it can even be properly registered—is replaced by a subsequent event, then time passes quickly. In subjective experience, the stream of events leads to a compression of time; the hand of the inner clock moves faster than usual.

Ambivalence experiences, on the other hand, generate expectations that—contrary to what one would expect in everyday life—cannot be fulfilled. The ambivalent phenomenon could take either one form or another; it offers various possibilities of identification, but these remain indifferent and accordingly lead to a delay in perception. In such moments, when one waits in vain for something specific to happen, in the time span opened up by two possible perceptions, seconds can become eternity. The perception of ambivalence causes the inner clocks to run more slowly and leads to a subjectively experienced stretching of time.

A perceptual apparatus has the primary function of constructing identifiable forms from sensory impressions. From this general function of perception, the fact that aesthetic perceptions exist cannot be derived; rather, they are based on hyper- and dysfunctions of the perceptual apparatus. There are specific perceptual situations in which normal processes of form-formation and attention escalate and intensify; and there are extraordinary perceptual situations in which they run empty and become blocked. A perceptual apparatus that enters such an anomalous mode of operation encounters its aesthetic intrinsic values.

The theory of intrinsic values is not derived from empirical aesthetics, but it is compatible with fundamental insights of empirical aesthetics and seeks to be compatible with neuroaesthetic research. Ultimately, it is neural processes that, in aesthetic perceptual situations, produce those self-induced secondary effects. The theory of aesthetic intrinsic values cannot be directly verified or falsified by neuroaesthetics, but it could nevertheless provide a heuristic model with which neuroaesthetic experiments can be designed or experimental findings analyzed.

A systematic connection between intrinsic-value aesthetics and evolutionary theory can always be established where questions of origin are involved, especially when they concern the origin of prehistoric art. In such cases, scenarios can be developed in which aesthetic intrinsic values can be treated as evolutionary attractors that, under certain social framework

conditions—such as those provided by a cult—can trigger an aesthetic evolution. On the basis of cave paintings and small sculptures, it becomes clear that more than 40,000 years ago, the intrinsic values of beauty, event, ambivalence, and possibly also the sublime were already being exploited in the production and staging of works of art.