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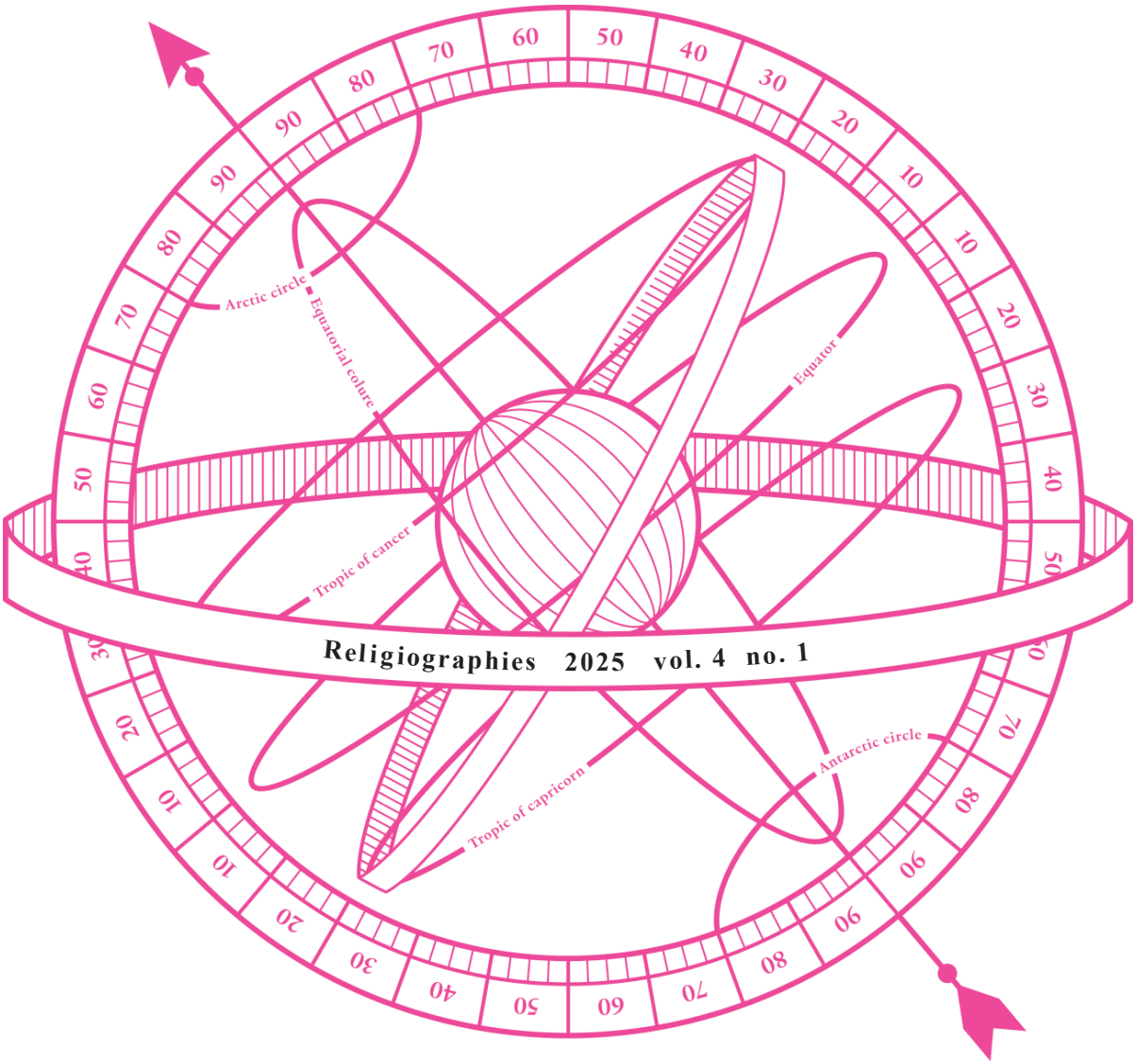

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Science and Aesthetics in Portmann's Post-war Eranos Lectures

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Abstract
In the years following 1945, several natural scientists were invited to the Eranos meetings in an attempt to integrate the sciences and the humanities. The biologist Adolf Portmann was the most important member of this group for the future of Eranos. This article follows Portmann's attempts to establish a dialogue between science, art, and religion, with a special focus on how he used aesthetics to bridge these domains. Portmann was motivated by his conviction that aesthetics was a central phenomenon in the natural world and neglected by contemporary biology. For him, the appearance of organisms was not simply a byproduct of other biological processes but meaningful in its own right. Beyond his discussions of the natural world, aesthetics also featured prominently in his broader reflections on the place of science in culture. He assumed that culture was divided into a rational tendency, on the one hand, and what he alternately calls the imaginative or aesthetic tendency, on the other. This framework helps to explain why Portmann came to identify so strongly with Eranos; for him, its meetings were the place where modern rationalism could be connected to this other side of culture.

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Introduction

Eranos is commonly discussed regarding the study of religion and of the arts and humanities more broadly. The natural sciences appear, if at all, only as the other of the meetings. For example, Wouter Hanegraaff describes one of the guiding themes at Eranos as the fascination with everything excluded by the Enlightenment and modern science.[1] Looking at the history of Eranos as a whole, this perspective has great merit; clearly, the meetings were dominated by scholars from the humanities and especially scholars of religion. At the same time, Eranos has a long and diverse history, and in this article I want to draw attention to an episode in the history of Eranos that helps create a more complex picture: the effort in the postwar years to include perspectives from the natural sciences.

Most of the scientists invited during these years were physicists interested in connecting science to philosophy and religion. Adolf Portmann (1897–1982), the lone biologist among them, shared these interests and became interested in how artistic approaches to nature could complement the scientific perspective. He was beyond doubt the most important in this group for the history of Eranos, and so this article will focus mostly on his contributions and how he attempted to connect science, art, and religion. I will suggest that it was primarily his focus on aesthetics that allows us to understand how he saw their relationship.

Portmann's interest in appearance is well established in the literature on his work. Bertrand Prévost and Georges Thinès present his approach as a challenge to mainstream biology, which according to Portmann disregarded the form of living beings as byproducts of either evolutionary or molecular biological processes. He, on the other hand, claimed that forms have their own autonomous meaning. The articles of both Prévost and Thinès highlight the concept of self-presentation (*Selbstdarstellung*) as central to Portmann's views, in that for him, the appearance of animals was primarily an act of expression. Thinès also connects these ideas to those of Frederik Buytendijk,[2] which relate to Eranos, as Buytendijk was himself a speaker in 1950. Pietro Conte adds an analysis of how the concept of self-presentation evolved throughout Portmann's career, becoming particularly crucial in his 1960 revision of *Animal Forms and Patterns*.[3] This development coincided with Portmann's active period at Eranos, suggesting the influence of its interdisciplinary exchanges on his thought.

However, Eranos is not mentioned in either of these articles, which raises the question of the importance of the meetings for Portmann's ideas about aesthetics. On the other hand, Matthias Riedl's article about Portmann at Eranos focuses on his anthropological research as a contribution to the meetings and his search for interdisciplinary exchange, but it does not mention his interest in aesthetics.[4] I hope to show that this was another important motivation for Portmann as well as a central theme of his lectures.

In the following, I will first examine the introduction of the natural sciences at Eranos in the postwar years, showing how scientists presented their work in humanistic terms. Then I turn to Portmann, demonstrating how he positioned himself between the sciences and the humanities and gained a unique position at Eranos. I suggest that

1 Wouter J. Hanegraaff, *Esotericism and the Academy: Rejected Knowledge in Western Culture* (Cambridge: Cambridge University Press, 2012), 278–79.

2 Bertrand Prévost, "L'élégance animale: Esthétique et zoologie selon Adolf Portmann," *Images re-vues* 6 (2009); Georges Thinès, "4. La forme animale selon Frederik Buytendijk et Adolf Portmann: Une phénoménologie du comportement expressif," in *Penser Le Comportement Animal*, ed. Florence Burgat (Paris: Éditions de la Maison des sciences de l'homme, 2010).

3 Pietro Conte, "Playing Appearances: On Some Aspects of Portmann's Contribution to Philosophical Aesthetics," in *Adolf Portmann: A Thinker of Self-Expressive Life*, ed. Filip Jaroš and Jiří Klouda (Cham: Springer International Publishing, 2021).

4 Matthias Riedl, "Adolf Portmann: Ein Skeptiker auf der Suche," in *Pioniere, Poeten, Professoren: Eranos und der Monte Verità in der Zivilisationsgeschichte des 20. Jahrhunderts*, ed. Elisabetta Barone, Matthias Riedl, and Alexandra Tischel (Würzburg: Königshausen & Neumann, 2004).

for Portmann, aesthetics provided the key for connecting the religious, artistic, and scientific themes at the meetings. After that, I examine his emphasis on appearance in nature, which also had a psychological dimension, leading to an engagement with the work of Carl Gustav Jung at Eranos. Finally, I look at Portmann's broader reflections on the relationship between science, art, and religion, and how he saw them as manifestations of more fundamental human traits of rationality and imagination.

Humanist Scientists at Eranos

In the first Eranos meetings of the 1930s, the guiding theme was the relationship between "Eastern" and "Western" religious traditions,[5] following Olga Fröbe-Kapteyn's conviction that there is something common to them. The initial programme was then interrupted by World War II, when the meetings were necessarily reduced, with few lectures by the speakers, all living in Switzerland. When Eranos was fully re-established after the war, there was a shift in perspective: the main topic moved from religion to the concept of the human and the place of humanity in the cosmos. In the years between 1947 and 1961, all the titles of the meetings had the word "man" (*Mensch*) in them. This shift clearly reflects the influence of Fröbe-Kapteyn: she was responsible for organising the meetings,[6] and her prefaces show that the changing outlook was a deliberate choice in response to the catastrophe of the war. In 1946, she called for a "cultural regeneration" (*kulturelle Erneuerung*), which required a new synthesis of all the disciplines, both in the natural sciences and the humanities. The concept of the human was meant to provide a common basis for these different fields: "All branches refer to humanity and its relation to the spirit, to nature, and to other human beings."[7] Beyond these interdisciplinary goals, Fröbe-Kapteyn also saw this as a dialogue between science and religion, claiming that the scientific pursuit of truth was itself guided by a deeply religious ethos.

The postwar context also manifested itself through the increasing cultural influence of the United States at Eranos. In her preface to the 1947 meeting, Fröbe-Kapteyn described the historical situation as an opportunity for the "pioneer spirit in old wounded Europe . . . to participate in creating a new orientation and a new culture." She saw the contribution of Eranos to developing new forms of interdisciplinary collaboration, which she associated with Anglo-American academic practice. This is evident in the anglicisms she repeatedly used to describe collaboration: the participating researchers were those "who understood our kind of group work or 'teamwork' [English in original]"; and she emphasised that the meetings were all centred around "an idea, and around it a group or a 'team' [English in original] of researchers, which is always composed differently." She also compared the meetings to a "Round-Table-Conference [English in original]."[8]

As part of this broader transformation of Eranos after 1945, several natural scientists were invited for the first time:

- the biophysicist Friedrich Dessauer (1881–1963)
- the physicist Erwin Schrödinger (1887–1961)

5
Olga Fröbe-Kapteyn, "Vorwort," in *Eranos-Jahrbuch 1933: Yoga und Meditation im Osten und im Westen*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1934).

6
Marianna Ferrara, "Olga Fröbe-Kapteyn's Ashram: The Great Mother and the Personal History of Eastern Religions," *ASDIWAL: Revue genevoise d'anthropologie et d'histoire des religions* 16, no. 1 (2021): 82.

7
"[A]lle ihre Zweige beziehen sich auf den Menschen und auf sein Verhaltnis zum Geiste, zu der Natur und zu seinen Mitmenschen." Olga Fröbe-Kapteyn, "Vorwort," in *Eranos-Jahrbuch 1946: Geist und Natur*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1947), 7. All translations from the original German are my own.

8
Olga Fröbe-Kapteyn, "Vorwort," in *Eranos-Jahrbuch 1947: Der Mensch (Erste Folge)*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1947), 6–7.

- the biologist Adolf Portmann (1897–1982)
- the physicist and mathematician Hermann Weyl (1885–1955)
- the physicist Markus Fierz, assistant to Wolfgang Pauli (1912–2006)
- the electrical engineer Max Knoll (1897–1969)
- the physicist, philosopher, and industrialist Lancelot L. Whyte (1896–1972)

Some of these men were famous figures, like Schrödinger and Weyl, while others were more marginal, like Knoll and Whyte. They all shared an interest in broader cultural questions and particularly in the philosophical underpinnings of science. For example, Dessauer had published about the relationship between Catholicism and science, and Schrödinger had an interest in ancient Indian thought.[9]

These scientists were still a minority, even in these years. Apart from Portmann, who would return to Eranos every year for the rest of his life, they all attended only once or twice; Erwin Schrödinger declined an invitation for a second visit.[10] Their role as guests at events dominated by scholars from the humanities is reflected in the lectures. For example, Schrödinger stated that he could not assume that his listeners had even superficial knowledge of the facts.[11] More importantly, some of the speakers expressed an uncertainty about whether their lectures were relevant for the larger topic of the conference. In the middle of his lecture in 1948, Weyl apologised for having hardly spoken about the human up to that point.[12] Markus Fierz opened his lecture in the same year with the question: "But is it the physicist's job to talk about man?"[13] As will become clear below, Portmann became more comfortable at Eranos, but the opening statement of his lecture at the 1949 meeting on "Man and Myth" (*Der Mensch und die mythische Welt*) shows that he was also aware of this issue: "Perhaps it was here and there mentioned with surprise that natural research should be heard at a conference on the topic of myth."[14]

The scientists had the additional difficulty that their research had become morally suspect: although World War II led to the inclusion of scientists at Eranos, it also strengthened the association of science with technology and destruction. The scientists were keenly aware of this: Schrödinger and Dessauer, the two physicists in 1946, both referred to the atomic bombs dropped on Hiroshima and Nagasaki in their lectures.[15] Portmann referred to the misuse of biology during the Nazi period, which he called the "dark problem of political biology."[16]

With this background it becomes clear that the speakers had to adapt their lectures to their audience and did so by presenting the natural sciences in a humanistic form. In general, the German word *Geist*, which is difficult to translate but means something close to "spirit" or "mind," was the most important point of reference, and not the word *Natur* or "nature." More specifically, the speakers used three strategies to talk about science in a humanistic way: First, some of them presented modern science as part of a general cultural history of humanity. This is the main theme of the lectures of Schrödinger and Dessauer in 1946: both told the history of science as a series of great ideas, and therefore as part of a larger history of human ideas. Schrödinger presented a broad history of physics and biology in the nineteenth and

9
Friedrich Dessauer, *Der Fall Galilei und Wir* (Luzern: Räber, 1943); Walter John Moore, *Schrödinger, Life and Thought* (Cambridge: Cambridge University Press, 1989), 168–77.

10
Hans Thomas Hakl, *Eranos: An Alternative Intellectual History of the Twentieth Century* (Milton Park: Routledge, 2013), 343.

11
Erwin Schrödinger, "Der Geist der Naturwissenschaft," in *Eranos-Jahrbuch 1946: Geist und Natur*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1947), 501.

12
Hermann Weyl, "Wissenschaft als Symbolische Konstruktion des Menschen," in *Eranos-Jahrbuch 1948: Der Mensch (Zweite Folge)*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1949), 400.

13
"Aber ist es denn Sache des Physikers, über den Menschen zu sprechen?" Markus Fierz, "Zur physikalischen Erkenntnis," in *Eranos-Jahrbuch 1948: Der Mensch (Zweite Folge)*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1949), 28.

14
"Vielleicht ist da und dort mit Befremden bemerkt worden, daß in einer Tagung, die dem Mythischen gilt, die Naturforschung zum Worte kommen soll." Adolf Portmann, "Mythisches in der Naturforschung," in *Eranos-Jahrbuch 1949: Der Mensch und die Mythische Welt*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1950), 475.

15
Schrödinger, "Geist der Naturwissenschaft," 507; Friedrich Dessauer, "Galilei, Newton und die Wendung des abendländischen Denkens," in *Eranos-Jahrbuch 1946: Geist und Natur*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1947), 301.

16
Adolf Portmann, "Der naturforschende Mensch," in *Eranos-Jahrbuch 1948: Der Mensch (Zweite Folge)*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1949), 476. For Portmann's political motivations see also Riedl, "Adolf Portmann," 117.

twentieth century, focusing on what he called their guiding thoughts. He tried to show that in each century both disciplines shared major ideas. In the nineteenth century, the common idea was "intelligible randomness" (*verständlicher Zufall*), or statistics more generally expressing itself both in the theory of evolution and in thermodynamics. For the twentieth century the leading idea was the thinking in discrete and quantifiable units, which formed the basis for quantum theory and modern genetics.[17] Friedrich Dessauer similarly spoke about the history of science, mainly involving Galileo and Newton.[18] Like Schrödinger he focused on ideas, but he was more interested in religion than philosophy. Motivated by a critique of contemporary and secular science and technology, Dessauer claimed that great scientific ideas had a religious element, and that research was a "natural revelation."[19] In other words, neither Schrödinger nor Dessauer spoke about contemporary research in physics but instead used the medium of historiography and specifically intellectual history, as though to show that even the sciences have great ideas.

Secondly, some speakers presented science, and specifically physics, as products of the human mind. What these speakers tried to achieve was to present an alternative conception of physics, not focused on the manipulation of matter to create technology, but on the search for meaning in the material world. In his second lecture in 1947, Dessauer presented the expansion of knowledge about the natural world since the ancient Greeks as a revolution in what it means to be human, in that humans were now in an ever-expanding and therefore always fascinating cosmos. He contrasted this perspective with what he called "philosophies of doom" (*Philosophien des Untergangs*), according to which humans are thrown into an alien universe—a reference to Heidegger's early philosophy.[20] On the other hand, Markus Fierz and Hermann Weyl did not speak about the universe as a whole but about mathematics. They drew on the connection to the larger topic of the meetings, the concept of the human, by presenting mathematics as the product of the creative human mind. Weyl saw the construction of mathematical symbols as an expression of the human condition: "Mathematics is not the rigid and paralysing schema, as it is often regarded by laypeople; rather, in it we are at the border between necessity and freedom, which is the essence of humanity itself."[21] Fierz on the other hand compared mathematical objects to archetypes, and it is important to note here that Fierz was the assistant of Wolfgang Pauli, whose correspondence with C. G. Jung has become famous.[22]

A third group of lectures, by Max Knoll and Lancelot Whyte, presented a vision of a unified science of the future that will have overcome the distinction between mind and matter. These two speakers went beyond the others by not just presenting science in a human form, but by demanding changes in the basic organisation of knowledge. In his 1951 lecture, Whyte called for a new synthesis of knowledge that could integrate "the exact, analytical specialised knowledge of quantitative science."[23] He proposed that it should be based on the concept of form, which was buried under a purely quantitative perspective in the modern period. The engineer Max Knoll's lecture in 1951 also connected physics and psychology, but it was far more concrete than the general reflections of Whyte: he tried to find evidence for the claim that

17
Schrödinger, "Geist der Naturwissenschaft."

18
Dessauer, "Galilei, Newton und die Wendung."

19
Dessauer, 329.

20
Friedrich Dessauer, "Mensch und Kosmos," in *Eranos-Jahrbuch 1947: Der Mensch (Erste Folge)*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1948).

21
"Die Mathematik ist nicht das starre und Erstarrung bringende Schema, als das der Laie sie so gerne ansieht; sondern wir stehen mit ihr genau in jenem Schnittpunkt von Gebundenheit und Freiheit, welcher das Wesen des Menschen selbst ist." Weyl, "Wissenschaft als symbolische Konstruktion," 413.

22
Fierz, "Zur physikalischen Erkenntnis."

23
Lancelot L. Whyte, "Time and the Mind-Body Problem: A Changed Scientific Conception of Process," in *Eranos-Jahrbuch 1951: Mensch Und Zeit*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1952), 254.

the activity of the sun at the time of birth could influence a person's psychology, mediated by effects on climate. He explicitly connected this to astrology, which he claimed had been "a speculative attempt to deduce the entire structure of the material and psychic world from solar effects in nature and on humans."[24] This scientific justification for astrology was gladly accepted by C. G. Jung in his lecture that same year. He spoke about synchronicity as a psychological phenomenon but then added that this was not the case for astrology: "In the light of the latest astrophysical research, this is not a case of synchronicity, but largely of a causal relationship."[25]

To sum up, the physicists at the Eranos meetings used a variety of strategies to give the natural sciences a human dimension, by presenting it as part of the history of ideas, by seeing it as an expression of timeless human nature, and by envisioning a future in which there would no longer be a distinction between natural sciences and humanities. For this article, what is interesting about the lectures by the physicists at Eranos is that even though they clearly connected science with the humanities, they were not particularly interested in the topic of art. For them, philosophy, psychology, and religion were the main points of reference, while art was hardly mentioned. Whyte's lecture is the only exception: apart from Aristotle, his main references for the new unified worldview were Leonardo da Vinci and Goethe.[26] Yet even Whyte focused mainly on philosophical concepts. This relative disregard for art was not at all the case with Portmann, the focus of the rest of this article.

24
"Als spekulativen Versuch, aus solaren Wirkungen in der Natur und am Menschen auf den ganzen Aufbau der materiellen und psychischen Welt zu schließen." Max Knoll, "Wandlungen Der Wissenschaft in Unserer Zeit," in *Eranos-Jahrbuch 1951: Mensch Und Zeit*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1952), 430–31.

25
"Im Lichte neuester astrophysikalischer Forschung betrachtet, handelt es sich bei der astrologischen Entsprechung wahrscheinlich nicht um Synchronizität, sondern zum größeren Teil um eine Kausalbeziehung." Carl Gustav Jung, "Über Synchronizität," in *Eranos-Jahrbuch 1951: Mensch Und Zeit*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1952), 279.

26
Whyte, "Time and the Mind-Body," 260.

Portmann's Special Position at Eranos

Portmann was in a different situation from these other scientists. He was the only one who personally came to identify with Eranos and who had a strong impact on meetings beyond the postwar years. After his first appearance in 1946, he would return to Eranos every year until his death in 1982, and he became director of Eranos after the death of Fröbe-Kapteyn in 1962. One reason for this difference between the other scientists and Portmann is his distinct scientific background: as a biologist who was by this time mainly concerned with biological anthropology, what he was saying was directly relevant at the meetings, involving the nature of the human. More broadly, he carved out a role as a mediator between the humanities and the natural sciences. Biology was located at the intersection of the human and non-human realms, and he was therefore uniquely positioned to speak about questions of boundaries.

This role reflected Portmann's place in the meetings: in six out of the nine of them, between 1946 and 1954, he gave the closing lecture. This was presumably a decision by Fröbe-Kapteyn, responsible for their organisation, but when Portmann became head of the Eranos foundation in 1962, he kept this arrangement. More importantly, he frequently referred to this position, for example in his 1948 lecture:

> At the end of this conference the biologist speaks to you, and before our parting we will therefore take a look outside into this beautiful garden, in which we can be together. And we want to

remind ourselves of the good fortune that this garden means for our intentions. During these days we have tried to look within and understand the works of the spirit in its diversity. But today we look outside to the many life forms of this piece of the Earth. And when this look around eventually leads back to us, we will take note of the necessity with which we will always meet ourselves and the mystery in us even in the things around us.[27]

Fig. 1. Adolf Portmann (right) in conversation with Henry Corbin at Eranos. Eranos Foundation archives, Ascona-Moscia. All rights reseved.

This quote shows what Portmann regarded as his role at the meetings: rather than directly studying the human spirit as did other disciplines represented at the meetings, the contribution of biology was to define its boundaries. Biology was not committed to one of the metaphysical positions that placed spirit either above matter or vice versa; it could therefore explore the relationship between the two.[28] Therefore, he as a biologist had a crucial role to play, not just compared to other natural scientists, but also compared to the humanist scholars that made up the majority of the speakers.

In his concern for "wholeness," Portmann followed a longer line of German-speaking scientists especially who opposed the "disenchantment of the world" and sought to create an alternative, holistic science. In her book,[29] Anne Harrington has studied this movement and several of its scientists who directly influenced Portmann: Jakob von Uexküll inspired his concept of *Innerlichkeit*,[30] and Gestalt psychology was important for his emphasis on complex—or "holistic"—sense experience.[31] This commitment to holism explains why Portmann came to

27
"Da am Ende dieser Tagung der Biologe zu Ihnen spricht, so wollen wir, bevor wir Abschied nehmen, noch einmal hinausblicken in den schönen Garten, in dem wir hier zusammen sein dürfen. Und wir wollen auch recht des Glückes inne sein, das dieser Garten für unsere Absichten bedeutet. Wir haben in diesen Tagen, nach innen blickend, die Taten des Geistes in ihrer Vielfalt zu schauen und zu verstehen versucht. Heute aber blicken wir hinaus zu den vielen Lebensformen dieses Stückchens Erde. Und weist uns dann dieser Blick auf unseren Umkreis schließlich wieder zu uns selber zurück, so werden wir umso eher der inneren Notwendigkeit gewahr, mit der wir stets wieder uns selbst und unserer Rätselhaftigkeit auch im Blick auf die Dinge um uns begegnen." Portmann, "Der naturforschende Mensch," 461.

28
Adolf Portmann, "Die Biologie und das Phänomen des Geistigen," in *Eranos-Jahrbuch 1946: Geist und Natur*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1947), 523–25.

29
Anne Harrington, *Reenchanted Science: Holism in German Culture From Wilhelm II to Hitler* (Princeton: Princeton University Press, 1996).

30
Adolf Portmann, "Vorwort," in *Streifzüge durch die Umwelten von Tieren und Menschen: Ein Bilderbuch unsichtbarer Welten/Bedeutungslehre*, ed. Jakob von Uexküll and Georg Kriszat (Hamburg: Rowohlt, 1956), 10.

31
The concept of "Gestalt" can be found throughout his lectures, and an explicit reference to Gestalt psychology is in Adolf Portmann, "Die Bedeutung der Bilder in der lebendigen Energiewandlung," in *Eranos-Jahrbuch 1952: Mensch und Zeit*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1953), 351.

identify so strongly with Eranos; as he put it in 1948, it was "the place where dividing barriers fall, where the individual not only acts as . . . a representative of a field of research but at the same time as someone who wishes to demonstrate and cultivate common aspects of the human endeavour."[32] In other words, he came to Eranos not necessarily to promote a biological perspective, but to enter into a dialogue with the arts and humanities, the fields that were mainly represented there. This supports Matthias Riedl's finding, mainly based on later sources, that Portmann was a "sceptic" keenly aware of the limits of biology, especially with respect to the meaning of natural phenomena; and that he therefore came to Eranos to complement it with interdisciplinary perspectives.[33]

For Portmann, the search for a holistic view of the human, and by extension the Eranos meetings, was not simply an intellectual pursuit, but a matter of urgent contemporary relevance, as he emphasised in a 1962 lecture about the meaning of Eranos. Much like Fröbe-Kapteyn in 1946, he conceived of his own time as one of a cultural crisis: a one-sided rationality was spreading across the world, and not even the West, where this development originated, had found a way to solve the conflicts that arose from it.[34] Thus he emphasised that Eranos was not a withdrawal from the present, but a response to its needs. This sense of a mission did not lead him to call for an activist turn for Eranos; rather, he saw its task as the slow work on fundamental questions, to counterbalance the impatience of the present: "The Eranos meetings are a labour of silence."[35]

More specifically, he saw the purpose of Eranos as the rediscovery of the "archaic" that could complement modernity. When speaking about "this original humanity," he associated it with art, stating that "the importance of its spiritual creativity and its lasting contribution to artistic forms has often been emphasised at the conferences at Lago Maggiore."[36] However, in this lecture he particularly emphasised the religious dimension of the archaic; he described religion as "a way of relating to the world that truly establishes our humanity," and that therefore had to become a central focus of Eranos.[37] Portmann tended to present human culture as divided in two, and he saw the primary representatives of these two poles as science and technology on one hand, and art and religion on the other. Eranos was the place where they could reconnect.

To answer the question of how Portmann tried to bridge these domains, the above-mentioned quote about standing between Eranos and nature is revealing because of his emphasis on the beauty of the garden. This aesthetic dimension was not incidental but central to his broader goal of connecting science, art, and religion. Visual imagery generally plays an important role in the language he used, reflecting his criticism of a biology that is only concerned with the invisible. In addition, the word "image" (*Bild*) itself features prominently in many of his lectures: first as a general term for both traditional and scientific understandings of nature, for example when he spoke of "the image of the bird" as a creature whose life is especially affected by time and change[38]; then as a specific scientific concept in his lecture "The Significance of Images for the Living Transformation of Energy" ("Die Bedeutung der Bilder in der lebendigen Energiewandlung," 1952), by

32
"Der Ort, wo trennende Schranken fallen, wo der einzelne nicht lediglich . . . als Vertreter eines Forschungsgebietes gelten darf, sondern zugleich als einer, der Verbindendes im humanen Tun aufweisen und pflegen möchte," Portmann, "Mythisches in der Naturforschung," 475. Portmann retained this conception of the purpose of Eranos until his death, as can be seen in a similar statement from 1979 quoted in Markus Ritter, "Die Biologie Adolf Portmanns in zeitgeschichtlichem Kontext," *Basler Zeitschrift für Geschichte und Altertumskunde* 100 (2000): 251.

33
Riedl, "Adolf Portmann," 120–23.

34
Adolf Portmann, "Vom Sinn und Auftrag der Eranos-Tagungen," in *Eranos-Jahrbuch 1961: Der Mensch im Spannungsfeld der Ordnungen*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1962), 19.

35
"Die Eranos-Tagungen sind ein Werk der Stille." Portmann, 28.

36
"Eranos hat auf die Größe und das Weiterbestehen dieses ursprünglichen Menschentums hingewiesen; die Bedeutung seiner geistigen Schöpferkraft und sein dauernder Anteil am künstlerischen Formen ist oft an den Tagungen am Langensee hervorgehoben worden." Portmann, 14.

37
Portmann, 20–21.

38
Portmann, "Die Zeit im Leben," 453.

which he meant that animals do not act directly in response to sense impressions, but instead form images or complex structures of stimuli that then trigger various internal processes[39]; finally, as a term for one of the main goals of research, which according to Portmann included the creation of "comprehensive, rich images of larger areas of nature."[40] When discussing the importance of myth across disciplines, he explicitly highlighted his visual approach: "Let me put this common element before your eyes once again—really before your eyes, in that language of images in which natural forms and spiritual works are initially before us."[41] Unlike some lectures by other speakers, Portmann's did not contain illustrations, but the "language of images" was central to how he conveyed his ideas.

This visual understanding of knowledge aligned with how he saw the goals of the Eranos meetings. After presenting the reproduction of silver-washed fritillaries, then the process of infection by the rabies virus, he summed up:

> The work at our Eranos meetings serves the exploration of all human attempts to understand the world and life and to depict the inaccessible, what was recently only foreshadowed, in great symbols. For the sake of this goal, we also want to consider the dark image of the Rabies with deep seriousness, just as we have considered the joyful and cheerful image of the imperial mantle.[42]

When Portmann spoke of "great symbols," he was making a connection not just to art but also to religion. This becomes clear from the 1962 lecture mentioned above, which similarly associated Eranos with the study of symbolism and went into more detail, describing how the meetings explored "what the history of religion and research on symbols, mythology and psychology could tell us about the origins of religious ideas, about the deepest comprehensible commonalities of the religious relationship to the world." This was achieved by studying the "enormous archive" of ancient traditions and their symbolic world, examining "primordial images" like that of the "Great Mother" across different archaic cultures.[43]

Therefore, when Portmann talked about topics like rabies, he was adding symbols from the natural world, thereby contributing to the central concern of the meetings. Images served as a mediating element between science, art, and religion—by emphasising their role in each of these domains, he found common ground between them. As will become clear in the next section, Portmann's focus on images as a bridge between different areas of knowledge was not coincidental, because it aligned with his specific biological approach centred around the role of appearance for living organisms.

The Role of Aesthetics in the Natural World

Portmann was a highly visual person. In his childhood, he was fascinated by drawing and painting the natural world on the banks of the Rhine near Basel. In 1921, shortly after finishing his PhD in zoology, he left his position as an assistant at the university of Geneva and spent

39
Portmann, "Bedeutung der Bilder."

40
Portmann, "Der naturforschende Mensch," 486.

41
"Lassen Sie mich dieses Gemeinsame noch einmal vor Augen—wirklich vor Augen, in jener Sprache der Bilder, in der Naturformen wie Geistwerk zuerst vor uns sind." Portmann, "Mythisches in der Naturforschung," 512–13.

42
"Die Arbeit an unseren Eranos-Tagungen dient der Erforschung aller menschlichen Versuche, Welt und Leben zu verstehen und das Unzugängliche, das eben noch zu Ahnende in großen Symbolen darzustellen. Um dieses unseres Zieles willen wollen wir auch das dunkle Bild der Rabies in tiefem Ernst bedenken, so wie wir das frohe und heitere des Kaisermantels bedacht haben." Portmann, "Bedeutung der Bilder," 357.

43
Portmann, "Sinn und Auftrag," 9.

a year in Munich to study painting, seriously considering it as a career option.[44] Although he remained a biologist professionally, his passion for the visual appearance of organisms remained with him throughout his career, as reflected in publications such as *The Animal Form* (*Die Tiergestalt*, 1948).[45]

This interest in appearance is well known in the literature on Portmann, often with reference to his critique of Darwinism and molecular biology. His Eranos lectures support this finding: Portmann frequently developed his ideas in opposition to purely functional interpretations of natural forms, especially evolutionary explanations.[46] One of his main examples was that of the testicles of male mammals, since this is a feature which developed not independently from, but apparently in contradiction to the survival interests of the individual. Portmann noted that the development of mammals was accompanied by a movement of the testicles from a secure location at the centre of the body to a dangerously exposed position on the outside, and that all attempts to explain this process with natural selection had been unsuccessful:

> The phenomenon is all the more remarkable as there is no way to explain the formation of this structure through selection. For nothing in the struggle for existence could have caused the hidden testicles to emerge from the protective body cavity. And no theory of selection has so far been able to explain which sexual selection processes were able to drive the testicles out in the first place.[47]

Portmann used this example to support his argument for an aesthetic dimension of life not encompassed by Darwinian evolutionary theory. What is especially noteworthy here is that Portmann rejects the explanation of this phenomenon through "sexual selection."[48] In another lecture, Portmann again highlighted the importance of sexuality and sexual organs for the "beauty" of organisms.[49] It was important for Portmann to disassociate sexuality from selection in an evolutionary sense because he saw the former as part of the aesthetic dimension of life, a separate sphere not encompassed by Darwinian evolutionary theory.

Portmann distinguished between the appearance of animals as signs with a communicative function, for example to signal sexual availability, and as expression without a functional explanation. By that he meant the specific design of a feature. In his lectures Portmann frequently tried to evoke the aesthetic value of such features, for instance about the head and horns of antelopes: "[W]hat richness of form, what conciseness, what unmistakable memorability."[50] For him, the expressive value as opposed to the sign value went beyond a strictly biological perspective, but by his role as a mediator, he still considered biology to be relevant here: "[T]his points us over into areas, for which one of the many meanings of the word 'spirit' is used. The biologist describes the boundary, and even if, true to the nature of his work, he does not cross it—whoever has reached a boundary, whoever lives at it, has secretly already crossed it."[51]

However, as will become clear in the next section, in the following years Portmann more often called the main cultural counterpart of

44
Joachim Illies, *Das Geheimnis des Lebendigen* (München: Kindler, 1976), 33–76.

45
Adolf Portmann, *Die Tiergestalt* (Basel: Reinhardt, 1948).

46
Karel Stibral makes the point that this was not necessarily an opposition between Portmann and Darwin, who shared some of these views, and that the debate was rather with Neo-Darwinism, see Karel Stibral, "The Beauty of Organisms: Biological Aesthetics Between Darwin and Portmann," in *Adolf Portmann: A Thinker of Self-Expressive Life*, ed. Filip Jaroš and Jiří Klouda (Cham: Springer International Publishing, 2021).

47
"Die Erscheinung ist um so beachtenswerter, als es keine Möglichkeit gibt, die Entstehung dieses Gebildes durch Selektion zu erklären. Denn nichts im Daseinskampfe konnte die geborgenen Hoden veranlassen, aus der schützenden Leibeshöhle nach außen zu treten. Und keine Selektionslehre hat bisher vermocht zu erklären, welche sexuellen Ausleseprozesse den Hoden zuerst überhaupt hinauszutreiben vermocht hätten." Portmann, "Biologie und das Phänomen," 538.

48
Evelleen Richards, *Darwin and the Making of Sexual Selection* (Chicago: University of Chicago Press, 2017).

49
Portmann, "Der naturforschende Mensch," 467.

50
"[W]elcher Reichtum der Formen, welche Prägnanz, welche unverwechselbare Einprägsamkeit." Portmann, "Biologie und das Phänomen," 541.

51
"[D]as weist uns hinüber in Bereiche, für die ja auch eine der mancherlei Bedeutungen des Wortes Geist in Gebrauch ist. Der Biologe bezeichnet die Grenze, und wenn er sie auch, der Art seines Schaffens getreu, nicht überschreitet—wer immer an eine Grenze vorgedrungen ist, wer an ihr lebt, der hat sie heimlich auch schon überschritten." Portmann, "Biologie und das Phänomen," 541.

science the "aesthetic" or the "imaginative" sphere. I therefore suggest that this is what he had in mind already in 1946: that the importance of aesthetics for living beings meant that science alone was not able to study them fully; it had to be complemented by more humanistic approaches.

At times Portmann spoke of the "value of the surface" (*Wert der Oberfläche*) to sum up his defence of the aesthetic dimension, as opposed to only looking for meaning underneath the surface. However, this does not mean he was only interested in appearance for its own sake. Rather, the aesthetics of the natural world fascinated him because of what it revealed about the interior of living beings: "The more superficial, the more powerfully an animal image conveys the inwardness, the peculiarity of the being that presents itself in this way."[52] For Portmann, this concept of "inwardness" was central. In his lecture in 1948, he expanded on it, claiming that animals create "counter-worlds" (*Gegenwelten*), whose structure is not a precise reproduction of an environment, but a reinterpretation based on its general organisation. In other words, there is a creative element to how organisms relate to the world. When studying this inward dimension, Portmann likened his approach to that of a psychologist: "Just as the psychologist, for instance, relies on the products of man's mental labour when he uses the formations of myth as documents for the structure of our inwardness, so the naturalist seeks first to penetrate through the many organs of sensory life and expression to the hidden realm."[53]

This psychological interpretation of appearance has not been highlighted enough in the literature on Portmann. The articles by Prévost and Thinès, also focusing on his aesthetics, primarily present his understanding of appearance as an autonomous sphere. This makes the Eranos lectures special: the central position of C. G. Jung, who presumably was "the psychologist" in the quote above because of his interest in myth, led Portmann to explicitly connect his views to the field of psychology.

As with others at Eranos, Jung was one of Portmann's primary interlocutors. In his lecture "Myth in Science" ("Mythisches in der Naturforschung," 1948), he referred to psychological and ethnological research on myth that was focused on structures in the unconscious. Here he did not mention Jung by name, but it is again clear that this is who he had in mind, because the rest of the lecture was a discussion of the notion of archetypes. As mentioned above, this lecture was one case where natural scientists expressed uncertainty about whether they could contribute something relevant to the theme of the meeting. He therefore used the concept of the unconscious to connect his own field to the topic of myth: "Work in biology is constantly concerned with the order of unconscious life; no-one is more impressed by the greatness of the order that prevails in this hidden realm than the developmental physiologist who follows the development of an organism, the formation of its dispositions."[54]

More precisely, he saw a connection between the complex forms he was interested in and Jung's archetypes, which he primarily understood as heritable psychological structures. According to Portmann, biologists tended to be sympathetic to this idea of heritability. The examples that Portmann used to support the idea of "archetypes" in

52
"Je oberflächlicher, desto machtvoller zeugt ein tierisches Gebilde von der Innerlichkeit, der Sonderheit des in dieser Erscheinung auftretenden Wesens." Portmann, "Biologie und das Phänomen," 539.

53
"So wie etwa der Psychologe sich an die Erzeugnisse der geistigen Arbeit des Menschen hält, wenn er die Gebilde des Mythus als Dokument für die Struktur unserer Innerlichkeit verwendet, so sucht der Naturforscher zuerst durch die vielen Organe des Sinnenlebens und der Kundgabe ins Verborgene vorzudringen." Portmann, "Der naturforschende Mensch," 470.

54
"Mit Ordnung des unbewußten Lebens hat aber das biologische Schaffen dauernd zu tun; niemandem äußert sich die Größe der Ordnung, die in diesem verborgenen Bereich waltet, eindrucksvoller als etwa dem Entwicklungsphysiologen, der das Werden eines Organismus, die Bildung seiner Anlagen verfolgt." Portmann, "Mythisches in der Naturforschung," 496.

non-human species come from his familiar theme of the central role of appearance: a cuckoo recognises other members of its species even when it has never seen them before. Storks require their young to perform complex "ceremonies" before they feed them. Young mouthbrooders seek the mouth of their mother for protection; experiments show that any vaguely fish-shaped body with two eyes triggers this behaviour. All this was meant to show that animals have "rich dynamic images" that correspond to something in the external world and do not have to be learned. Referring to the Gestalt psychologist Wolfgang Köhler, he called these correspondences isomorphisms.[55]

However, Portmann was more sceptical about the concept of archetypes when it came to humanity, which is surprising given his interest in the rediscovery of the archaic. This can be explained by the differences in how he understood these two terms: as mentioned above, he associated "archaic humanity" with creativity. In contrast, he understood archetypes as instincts.[56] This clashed with Portmann's views on the unique aspects of human culture: whereas other species are strongly determined in their way of life, the human is characterised by its openness and freedom. The importance of social life for humans brought with it "historicity," a feature which Portmann explained biologically: compared to similar mammals, humans are born after a short pregnancy, and much of their development takes place after birth in social settings.[57] For these reasons, Portmann warned of at least some understandings of "archetypes," if they are understood as cultural products that somehow become heritable: "[This view] is real Lamarckism and therefore shares its fate."[58]

Among Eranos participants generally, Portmann was not unique in his ambivalent attitude towards Jung.[59] However, he stands out among the group of natural scientists in this respect: the others either ignored Jung or, like Max Knoll and Markus Fierz, spoke about him only in positive terms. It is particularly interesting that the biologist Portmann emphasised the importance of culture, while he criticised Jung for overestimating the importance of biological factors. This is only an apparent contradiction: he came to Eranos not necessarily to promote his own discipline, but to complement it with other perspectives. As we have seen, one of his preoccupations was identifying the boundaries of biology, and therefore he was particularly concerned when they were overstepped.

Portmann's concern with the special character of human culture does not mean that he wanted to establish a clear separation between humanity and the rest of nature. For him, human beings were distinct from other animals by their "historicity," their openness to change, but he maintained that this feature is itself "natural."[60] In more specific cases, it is sometimes difficult to establish what Portmann saw as uniquely human and what he considered to be a broader phenomenon. Several passages suggest that he thought of religion as a human affair.[61] At the same time, he used concepts such as myth that generally relate to human culture in the context of nonhuman organisms. Most importantly, the centrality of aesthetics was something that for Portmann cut across human culture and the rest of nature.

55
Portmann, "Mythisches in der Naturforschung," 500–501.

56
For a more detailed discussion of the relationship between Jung and Portmann, see Ondřej Váša, "On the Brink of the Expressible: Adolf Portmann Meets Carl Gustav Jung on Eranos Ground," in *Adolf Portmann: A Thinker of Self-Expressive Life*, ed. Filip Jaroš and Jiří Klouda (Cham: Springer International Publishing, 2021) and Riccardo Bernardini, *Jung a Eranos: Il progetto della psicologia complessa* (Milan: FrancoAngeli, 2011), 223–24.

57
Portmann, "Mythisches in Der Naturforschung," 508–9.

58
"[Diese Überzeugung] ist echter Lamarckismus und teilt daher dessen Schicksal." Portmann, "Mythisches in der Naturforschung," 511. For Jung's negative reaction to this criticism see Hakl, *Eranos*, 139–40.

59
See for example Hakl, *Eranos*, 170.

60
Adolf Portmann, "Das Ursprungsproblem," in *Eranos-Jahrbuch 1947: Der Mensch (Erste Folge)*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1948), 39.

61
Adolf Portmann, "Riten der Tiere," in *Eranos-Jahrbuch 1950: Mensch und Ritus*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1951), 395; Portmann, "Mythisches in Der Naturforschung," 496.

Portmann on Rationality and Imagination

Although Portmann tended to view culture in terms of fundamental dichotomies, he did not think of science as belonging to either one or the other side. Instead, he presented science itself as divided in two: an older tradition of natural history on one hand, and modern laboratory research on the other. He associated natural history, whose practitioners he called naturalists (*Naturforscher* or *Naturkundige*), with observing and collecting the diversity of life in the field. Modern biology, on the other hand, was modelled after physics and chemistry and focused on studying a small number of species in the laboratory.

Again, the appearance of organisms plays an important role here. On a basic level, one of the defining differences between the two approaches according to Portmann was the importance they gave to visual features. He saw a trend in contemporary biology towards studying the invisible, beyond what can be seen under a microscope. From this perspective, the appearance of organisms only plays the role of a "test" of the internal processes of primary interest; it has "no intrinsic value." Portmann saw this as an impoverishment not just for science, but for how we relate to the world, for example through art:

> Our spiritual relationship to the many natural forms that surround us is a significant part of our lives and is just as important for the choice of artistic images and metaphors as it is for the overall shaping of our experience and expression. For this reason, any preference for mental work that leads away from the obvious forms and into the invisible also means a loss and a great danger for the whole of our experience of the world, in addition to the undisputed gain.[62]

Portmann feared that like the physical sciences, biology was moving away from everyday experience and thereby disconnecting itself from the rest of culture. In contrast, natural history had been rooted in the common human experience of nature. Great naturalists such as Charles Darwin or Alexander von Humboldt all shared an emotional connection with the living world, and they all had an affinity for the "diversity of life forms precisely in their richness of forms."[63] In other words, they all appreciated the natural world not just for intellectual but also for aesthetic reasons. Although he added that he was not trying to devalue the modern biologist, his sympathies clearly lay with the older tradition: while Thomas Hunt Morgan as a representative of modern laboratory research was simply described as "one of the most important hereditary researchers of the last decades,"[64] Jean-Henri Fabre, his favourite example of a naturalist, was presented enthusiastically as at the same time a brilliant scientist and a great artist. Reference to Fabre's artistic sensibilities can be found repeatedly in Portmann's lectures, for example in 1946:

> Through the *Souvenirs entomologiques*, the experiments of J. H. Fabre really entered the literature and the whole intellectual life of the time. The researcher whom Darwin called the incomparable observer, who so deeply influenced poets such as Maeterlinck, who had an effect on Bergson, who was emphati-

62 "Unsere geistige Beziehung zu den vielen uns umgebenden Naturgestalten ist aber ein bedeutungsvoller Teil unseres Lebens, und für die Wahl der künstlerischen Bilder und Gleichnisse ebenso wichtig wie für die gesamte Formung unseres Erlebens und unseres Ausdrucks. Daher bedeutet jede Bevorzugung einer Geistesarbeit, die von dem sinnfällig gegebenen Gestalten weg ins Unsichtbare hineinführt, neben unbestrittenem Gewinn auch einen Verlust und eine große Gefahr für das Ganze unseres Welterlebens." Portmann, "Der naturforschende Mensch," 477.

63 Portmann, "Der naturforschende Mensch," 473–74.

64 Portmann, "Der naturforschende Mensch," 475.

> cally called the Homer, the Virgil of insect life, J. H. Fabre, gave such an impressive picture of the complexity, but also the rigid narrowness, which characterises the behaviour of insects, that his examples have become almost classical.[65]

In 1948, he claimed that Fabre would be known as a great artist if his achievements as a researcher had not been even clearer.[66] Fabre was also a "master in the art of biological experimentation"—here research itself is described as an art. However, Portmann emphasised that experimentation had only been one tool among many for Fabre, and that he had primarily worked in the field instead of the laboratory, in order to "investigate the living being in the fullness of its relationships."[67]

For Portmann, these different approaches to studying nature were only one case of a more fundamental distinction between two basic tendencies of the human mind. This was a central theme for Portmann, as he returned to it in three lectures between 1948 and 1951. In "Der naturforschende Mensch" (1948), he called these tendencies the "theoretical function" on one hand, centred around logic and a mathematical or physical approach, and the "aesthetic function" on the other hand, oriented towards sensory experiences and emotions.[68] After that, he more commonly referred to them as rationality and imagination.

Portmann saw religion and art as the main manifestations of the aesthetic or imaginative tendency. One of his examples of its value was an anecdote about Leonardo da Vinci: "It is about the intensive stimulation of the creative ground within us, as Leonardo da Vinci saw it when he recommended that painters use the structure of pieces of rock, this mysterious order not created by man, this apparent chaos to stimulate the imagination."[69]

In other words, this approach does not try to analyse what is not understood but takes it as inspiration. At another point, he describes the imagination as the source of "the greatest artistic creations."[70] Similarly, he clearly associated religion with this tendency. In the 1953 lecture "The Earth as the Home of Life" ("Die Erde als Heimat des Lebens"), Portmann suggested that the "otherwise so different creations of religion, myths, rituals and symbols" were rooted in a "primary mode of experience" (*primäre Erlebensweise*), an unmediated relationship with the earth that expressed itself through dreams and fantasy.[71]

When it comes to science, however, he did not simply place it on the other side of that divide, which can already be seen from the discussion of different approaches to biological research mentioned above. More broadly, he claimed that although modern science is oriented towards rationality, the imagination also plays an important role.[72] For example, he described modern theories of evolution or comprehensive cosmological theories as "genuine products of the mythical imagination" that are influenced by ancient imagery, such as the expectation of a final return to chaos.[73]

Portmann had another version of this distinction framed in terms of two different conceptions of the human: "Ptolemaic Man" on the one hand, who represents an aesthetic, intuitive approach to the world and has an immediate connection to sensory experiences; and "Copernican Man" on the other hand, who embodies the rational, scientific mindset that distrusts the senses. This form has already been discussed

65
"Durch die 'Souvenirs entomologiques' sind die Versuche J. H. Fabres recht eigentlich in die Literatur und das ganze Geistesleben der Zeit eingegangen. Der Forscher, den Darwin den unvergleichlichen Beobachter genannt hat, der Dichter, wie Maeterlinck, so tief beeinflußt hat, der auf Bergson wirkte, den man emphatisch den Homer, den Virgil des Insektenlebens genannt hat, J. H. Fabre, hat ein so eindrucksvolles Bild von der Komplexität, aber auch der starren Enge gegeben, welche das Verhalten der Insekten kennzeichnet, daß seine Beispiele geradezu klassisch geworden sind." Portmann, "Biologie und das Phänomen," 528.

66
Portmann, "Der naturforschende Mensch," 485.

67
Portmann, 474.

68
Portmann, 478.

69
"Es geht um die intensive Förderung des schöpferischen Grundes in uns, wie sie Leonardo da Vinci gesehen hatte, als er den Malern empfahl, die Struktur von Felsstücken, diese nicht vom Menschen geschaffene rätselhafte Ordnung, dieses anscheinende Chaos zum Anregen der Phantasie auszuwerten." Portmann, "Der naturforschende Mensch," 480.

70
Portmann, "Mythisches in der Naturforschung," 478.

71
Adolf Portmann, "Die Erde als Heimat des Lebens," in *Eranos-Jahrbuch 1953: Mensch und Erde*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1954), 490–91.

72
Adolf Portmann, "Die Zeit im Leben der Organismen," in *Eranos-Jahrbuch 1951: Mensch und Zeit*, ed. Olga Fröbe-Kapteyn (Zürich: Rhein-Verlag, 1952), 456.

73
Portmann, "Der naturforschende Mensch," 466.

by Oreste Tolone, who emphasises Portmann's critique of the excessive rationality of modern science and his call for integrating these different modes of understanding.[74]

This is indeed an important theme in the lectures, not just with respect to Ptolemaic and Copernican Man, but also when Portmann talked about imagination and rationality. Portmann thought that in modernity, the imagination is increasingly sidelined in favour of the rational, a development he saw as an existential threat: "The wholeness of human existence is at risk; the imaginative function is dying off; living, creative imagination is degrading and thus a deeply hidden source of creativity is drying up, from which scientific work ultimately also receives its inspiration."[75]

However, a closer look at the lectures reveals a more nuanced understanding of Portmann's views. While he did call for a connection between different forms of encountering the world and hoped that Eranos provided a place for it, he also emphasised the tension between these modes: "These two modes of experience are polar opposites; they are both integral parts of the human—we must therefore take them seriously in the tension of their opposition and must not accept one or the other as the more valuable, as the one to be favoured."[76]
In addition, although he saw a one-sided rationalism as the primary danger of his epoch, he also at times expressed apprehension about moving too far in the opposite direction.[77] In his 1948 lecture, Portmann defended the theoretical and rational attitude against a "radical turn to the irrational," which he associated with surrealism. While he described surrealism as "a great, important movement," he also claimed that it "must be overcome and made fruitful by more conceptual intellectual work (*erfassendere Geistesarbeit*)."[78]

The lecture on myth in the following year goes into more detail about what he regarded as the problem: not the imagination itself, which was clearly valuable for him, but a dangerous mix in which the works of the imagination presented themselves as rational. In this form it could be an obstacle that science must overcome, as he said with reference to Gaston Bachelard.[79] One of his main examples in this direction was that of ideas about reproduction. For a long time, the idea of the origin of living beings was dominated by myths that were associated with moisture, often together with swamp imagery. Portmann explained this continuity with the power of the sensory impressions in these myths, as is clear in his description of Asian ideas:

> What an interplay of impressions of the eye, of the touching hand, of the so deeply penetrating odours of decomposing vegetation, from which finally such powerful pictorial symbols are forming as that of the emergence of the pure beauty of lotus leaf and lotus blossom from the murky, opaque mud . . . In the works of the East, which depict this miracle of swamp birth, we encounter clearly and powerfully the mythical intention and its adequate instrument: imaginative thinking and creation.[80]

The aesthetics of living beings, so important for Portmann's approach to biology, could therefore also lead to the entrenchment of false ideas. Within modern science, these images remained influential: "[A]gainst

74
Oreste Tolone, "Ptolemaic Man and Copernican Man: In Favour of 'Depth Anthropology,' " in *Adolf Portmann: A Thinker of Self-Expressive Life*, ed. Filip Jaroš and Jiří Klouda (Cham: Springer International Publishing, 2021).

75
Portmann, "Die Zeit im Leben," 456.

76
"Diese zwei Erfahrungsweisen stehen in polarem Gegensatz; sie sind beide stete Glieder des Humanen—wir müssen sie daher in der Spannung ihrer Gegensätzlichkeit ernst nehmen und dürfen nicht die eine oder die andere als die wertvollere, als die zu bevorzugende gelten lassen." Portmann, "Mythisches in der Naturforschung," 480.

77
See also Váša, "On the Brink," 7.

78
Portmann, "Der naturforschende Mensch," 482.

79
Portmann, "Mythisches in der Naturforschung," 482; the evidence that Portmann had Bachelard's concept of the "epistemological obstacle" in mind when using the word "obstacle" here is on p. 477.

80
"Welch ein Zusammenwirken von Eindrücken des Auges, der tastenden Hand, der so tief haftenden Gerüche zerfallender Vegetation, aus denen sich schließlich so mächtige bildhafte Symbole formen wie das der Entstehung der reinen Schönheit von Lotosblatt und Lotosblüte aus dem trüben, undurchsichtigen Schlamm . . . In den Werken des Ostens, die dieses Wunder der Sumpfzeugung darstellen, begegnet uns rein und mächtig die mythische Zielsetzung und ihr adäquates Instrument: das imaginierende Denken und Schaffen." Portmann, "Mythisches in der Naturforschung," 487.

what mental constructs of an imaginative interpretation of the world did objective research have to prevail!" Many researchers in the eighteenth and nineteenth centuries still assumed that the germ originated in a slimy fluid in the uterus, even after mammalian eggs and sperm had been observed under the microscope.[81]

Another example from the lecture on myth better illustrates what kind of imagination Portmann wanted to promote and what kind he saw as dangerous. In the context of this "primordial yearning" (*Ur-Sehnsucht*) of ours, he discusses two Greek myths, each of which illustrates one side of the dream of flight. One of them is the "night dream" of the Olympian gods and especially of the god Hermes's ability to fly. This version of flight is effortless, a self-evident part of the "mythical physics" at play here—and a pure product of the imagination. In contrast, the flight of Icarus is a "daydream," closer to our world in its imitation of birds as real examples of flying creatures. In this story, flight is achieved through technology; it is closer to a rational-scientific approach to the world. Portmann's point here is that only the Icarus myth provided an obstacle to scientific progress: its extrapolation from bird to human flight, plausible on its face, supported the idea that it could be true in a straightforward sense. Scientific research into flight therefore had to unlearn the image of the beating wings of the bird to come up with the airplane, which according to Portmann was based on completely different principles and a product of the rational mind. On the other hand, the night dream of divine flight was so far removed from our reality that it could inspire without leading research astray.[82]

Portmann's position was thus more complex than it might initially appear. As the examples above demonstrate, he thought that an aesthetic and imaginative approach could sometimes hinder scientific progress, precisely because of its persuasive power. While he certainly advocated for integrating rational and aesthetic modes of understanding, his examples suggest that he also wanted to maintain some boundaries between these approaches and preserve a productive tension between them.

81
"[G]egen welche Geistesgebilde einer imaginierenden Weltdeutung mußte sich die objektive Erforschung durchsetzen!" Portmann, "Mythisches in Der Naturforschung," 491.

82
Portmann, "Mythisches in der Naturforschung," 477–79.

Conclusion

After World War II, there was an effort to introduce the natural sciences at Eranos, reflecting Fröbe-Kapteyn's goal of cultural regeneration and the integration of science and religion. While all the scientists who were invited shared an interest in philosophical and religious questions, Portmann stood out for his emphasis on aesthetics as a bridge between different areas of culture. This focus stemmed from his biological work on the appearance of organisms, which he saw as a fundamental feature of the natural world. For Portmann, aesthetics was not just one domain among others but a fundamental dimension of both nature and culture. In nature, it manifested in the complex interplay of expression and perception among organisms. In human culture it appeared as the "imaginative" tendency that was the counterpart of rationality. Portmann believed that good science required both and feared that modern science was becoming unbalanced in its emphasis on the rational. The Eranos meetings were important for Portmann because they provided a place where these approaches could reconnect. At the same time, his

lectures reveal a more complex position than simply calling for their integration. While he saw both rational and imaginative tendencies as essential parts of human nature, he also emphasised that they were in tension, and at times warned against fully breaking down the boundaries between them. This complex stance reflected his unique position at Eranos: although he shared the meetings' broader critique of modern rationality, he also sought to preserve the distinctive contributions of different ways of understanding the world.

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