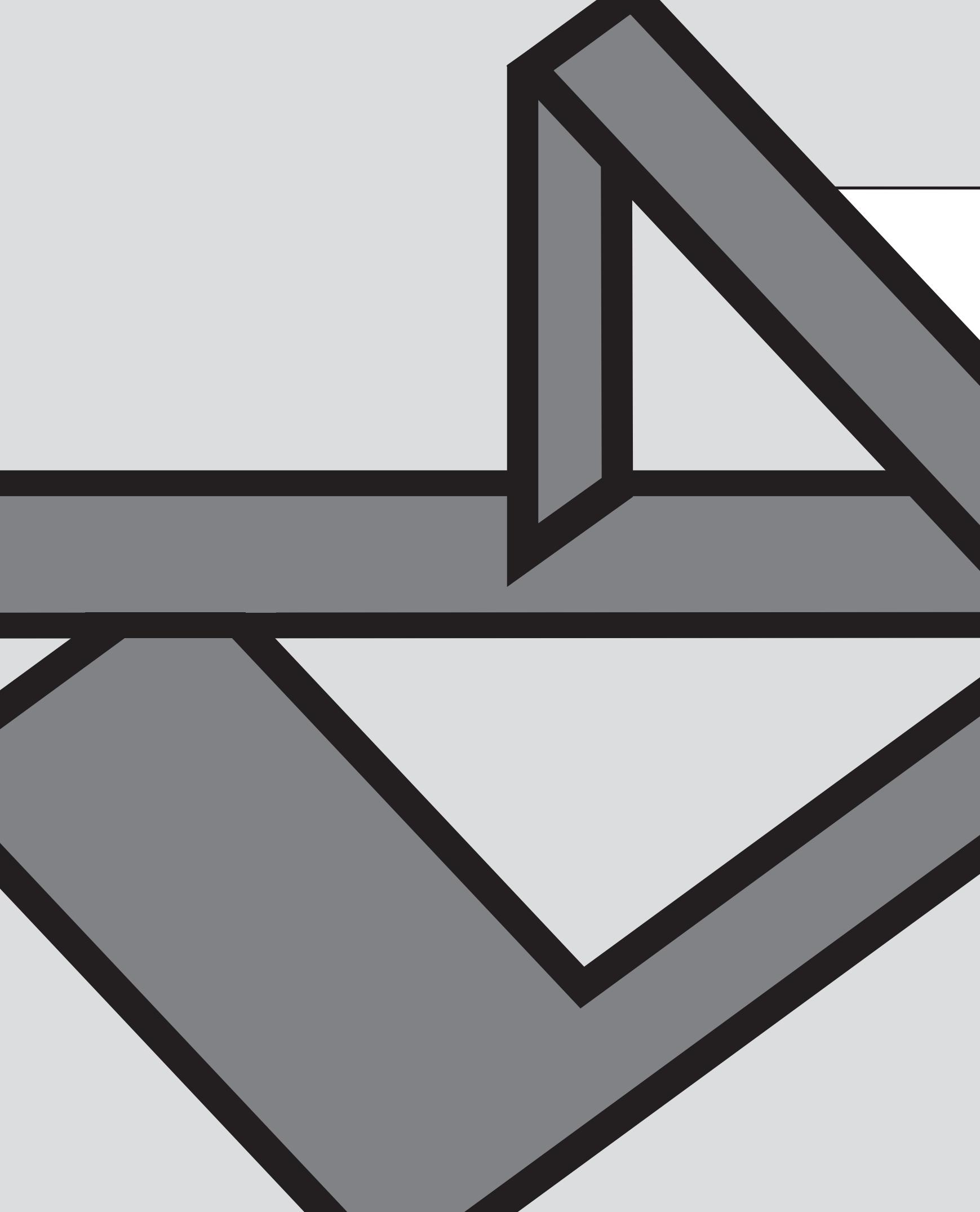


**CUBISM  
CONSTRUCTIVISM  
FORM ART**



# CUBISM CONSTRUCTIVISM FORM ART

Edited by Agnes Husslein-Arco and Alexander Klee

belvedere

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**Gustav Klimt**  
Sketch design "Knight"  
for the mosaic frieze in the  
dining room of Palais Stoclet, 1911  
MAK – Austrian Museum  
of Applied Arts /  
Contemporary Arts, Vienna



# Form Art: Modernism in the Habsburg Empire

Agnes Husslein-Arco

When considering the idea of Modernism in Austrian art history around 1900, the temptation is to focus mainly on Viennese Modern art. This begs the question of how such a development could have been confined to one specific place, when the Habsburg Empire was, in fact, composed of a multi-ethnic conglomeration of countries. It therefore follows that reciprocal influences must have existed within this unique cultural region and we should, consequently, seek to identify Modernism in the Austro-Hungarian Empire as a whole.

*Cubism—Constructivism—Form Art* at the Lower Belvedere revisits an idea that was essentially framed in Oswald Oberhuber's 1993 exhibition *Wille zur Form* (literally: The Will to Form). Oberhuber was convinced, even then, that non-representational art in Austria, Poland, the former Czechoslovakia, and Hungary needed to be assigned a special role. The current exhibition picks up this argument and embarks on some art-historical detective work in the former crownlands of the Habsburg Monarchy. It thus enables an interpretation that provides a common context for artists such as František Kupka, previously considered an exception to any rule, or the special status of Czech Cubism or the "form art" of the Vienna Secession. Art that was previously seen as an isolated phenomenon, without obvious models and with no apparent legacy, is thus reinstated with its own environment and sphere of influence.

This special approach to art through form and its articulation, which paved the way to non-representational form art, must also be considered as an alternative model to abstraction. A strong emphasis on drawing education in schools, aiming to foster a fundamental understanding and awareness of the surrounding world, laid the foundations for this artistic articulation. Drawing instruction focused on basic geometric shapes, which would be combined into ever more complex structures, and ultimately into both representational and non-representational visual creations.

The exhibition also sheds light on some exciting connections, which spread from the visual arts into everyday life. For, at the time—very much in the spirit of the *gesamtkunstwerk*—divisions between different art forms were

erased. A wide array of exhibits portray a cultural-historical region, which, for all the fundamental diversity of approaches, will demonstrate to the viewer the common features and foundations of the Habsburg Empire as a cultural area. The compositional devices of form art emerge as a trait they all shared.

The impact and significance of form art has certainly been far-reaching. Connections can be drawn with the work of Oswald Oberhuber, effectively the intellectual father of this exhibition. Its influence can also be seen in Fritz Wotruba's oeuvre, which absorbed these traditions and formal influences. And even the Concrete and abstract art can be understood as a further development of form art, drawing on and assimilating its ideas.

I am, of course, extremely grateful to all the lenders and supporters of this exhibition. Indeed, the project, especially the catalogue, can be upheld as an excellent example of cross-border collaboration. My particular appreciation goes to the curator Alexander Klee, who has shown tremendous commitment to ensuring the exhibition's success.

Finally, I would like to conclude my introduction with a quote from Robert Zimmermann, whose definition of form art is still valid today: "As only forms can absolutely please or displease (§ 55), art is required in its expressions of the spirit to focus on form, and so in meeting this requirement all art is by necessity **form art**."<sup>1</sup>

1 Robert Zimmermann, *Allgemeine Aesthetik als Formwissenschaft* (Vienna, 1865), vol. 2, p. 138, § 283.



# Science, Philosophy, and Art: Intellectual Constellations and Traditions in the Late Habsburg Monarchy

Johannes Feichtinger

"I believe that good Austrian  
(Grillparzer, Lenau, Bruckner, Labor)  
is particularly difficult to understand.  
In a certain sense it is more subtle than anything else."

Ludwig Wittgenstein, 1950

In his *Studien zur Kritik der Moderne* (1894), art critic Hermann Bahr wrote that modern Viennese art was not an imitation of the "Berlin model" or the "Paris template." It "lacks the younger Germans' hate for the past." The young Austrians "honor tradition. They do not wish to kick against it. They want only to stand on it and to adapt the old work of their ancestors to their modern time. They want to bring it up to date. They want, like those before them, to be Austrian, but Austrian of 1890. That is the dark and distant force that drives them beyond convention but also warns them against the French, Scandinavian, and Russian models that the young Germany apes."<sup>1</sup> With "ancestors" Bahr might have been referring to the intellectuals of the past who had "taken the field against Fichte, Schelling, and Hegel" and gathered "under the banner of Herbart";<sup>2</sup> with "the young Austrians" he meant the new artists of the turn of the century, who embraced an Austrian intellectual tradition.

This essay looks at the intellectual traditions that in fin-de-siècle Vienna and Prague provided the fertile ground for "form art" to emerge. The focus here is less on the Viennese Secession as an interface, or the cultural crossings in the Prague temples of art, in which lively intercultural exchange took place as the country fought to assert its national identity,<sup>3</sup> but rather on a specific intellectual constellation that enabled Austrian art to enter the Modernist era. It arose as a result of the great significance attributed to Herbartianism. This Enlightenment movement originated in Prague in the late Habsburg Monarchy and, from the mid-nineteenth century, was so popular that it was later awarded the status of an "Austrian state philosophy."<sup>4</sup> In two areas—education and aesthetics—Herbartianism was particularly effective; so "productive," as a contemporary advocate put it, "that it defined our intellectual writing, so that it can rightly be said that every-

thing of importance written here about philosophy owes a good deal to the Herbartian school."

## Bolzano, Herbart, and the foundations of objective beauty

The foundations for this new intellectual theory were laid by two philosophers of the pre-1848 era: Bernard Bolzano and Johann Friedrich Herbart. Bolzano, the disputatious Enlightenment figure, prepared the ground for the acceptance of Herbartianism. He came from the Leibniz-Wolff school of philosophy. Bolzano was a very well respected theological speaker and mathematician in Prague, who, as a logician, set new standards. Herbart had established psychology as a science and re-evaluated the role of sensory experience. His philosophical system was highly popular in the Habsburg Monarchy thanks to its "levelheaded, scientific, and simplifying mode of thought and the readily understandable form of presentation."<sup>6</sup>

Herbart and Bolzano moved in Immanuel Kant's "conceptual space,"<sup>7</sup> but they dissociated themselves from his philosophy. They also strongly rejected the subjectivist ardor of German idealism in favor of their realistic view of the world. In his philosophical psychology, Herbart explored new connections between subjective experiences and objective truths. Bolzano's concept of "truths in themselves" was more committed to objectivism, but he also took account of the role of the recipient in his aesthetics. Both pursued the cause of education. They built on the "dogmatic metaphysics" of Leibniz's pre-Kantian system, which "had not yet lost its authority in Austria."<sup>8</sup> In 1837, Bolzano presented his *Theory of Science*, in which he attempted to prove the existence of "objective truths." According to him "One of the most reliable and useful criteria of truth" was the recurrent confirmation of a judgment "whenever we test it." As it consistently "forces itself upon us, [...] it deserves our confidence."<sup>9</sup>

Herbart published *Psychologie als Wissenschaft* in 1824/25, basing it on experience, metaphysics, and mathematics. He defined philosophy as the "elaboration of



Fig. 1  
Bernard Bolzano  
(1781, Prague – 1848, Prague)

concepts.<sup>10</sup> In his psychology he investigated the process of forming concepts. Sensory experience (perception), as has been mentioned, played a central role in this.

Both developed theories of art which they explained in objectivist terms and linked with the task of moral character-building. Bolzano saw aesthetics as "the scientifically organized embodiment of all truths worth knowing relevant to [...] beauty."<sup>11</sup> In his view, a work of art was beautiful if it had a certain regularity that gave rise to aesthetic pleasure and incited moral behavior. Herbart's theory of art also had a didactic and moral aim, which he explained in his essay *Über die ästhetische Darstellung der Welt als das Hauptgeschäft der Erziehung* (1804). He saw education as an instruction for moral intention and action, which was based on sensory perception. The material for perception was provided by the work of art. Its form trained the eye and mind of the pupil. The study of aesthetic order, made visible by the forms and their relationship to one another, taught good moral intentions, which coincided with the ethical order of the world.<sup>12</sup>

Herbart's theory of aesthetics was thus guided by the optimistic maxim that the ability to recognize beauty would result in moral behavior.

### Traditions

Around 1800, the teaching of Kantian philosophy was officially banned in Austria. The pre-1848 universities taught the theories of Friedrich Schlegel and Friedrich Heinrich Jacobi with the inclusion of a critique of Kant. Hegel's system had a few advocates. Because of his progressive concept of ethics, Bolzano was forbidden from teaching or publishing. Herbart's psychological writings were published in the government-censored *Wiener Jahrbücher der Literatur*.<sup>13</sup>

Herbart's theory finally began to triumph in Austria around the middle of the century.<sup>14</sup> This also made Bolzano's theory of knowledge more well-known. The Bolzano student Robert Zimmermann combined the two

Fig. 2  
Johann Friedrich Herbart  
(1776, Oldenburg – 1841, Göttingen)



teaching systems and developed a theory of art as a science of form. In his aesthetics, however, he moved away from the openness of his two inspirations. In his endeavor to discover "what is beautiful, for all time and in every place,"<sup>15</sup> he set off in a different direction. He not only ignored Bolzano's view of a changing perception of art,<sup>16</sup> but also narrowed down Herbart's concept of aesthetics which had included the content of the work of art. Particularly on account of his fundamental essays on formal aesthetics, Zimmermann is regarded as the most important Herbartianist. Objectivism, as proposed by Zimmermann's version of Herbartianism, was seen retrospectively as the "main characteristic of 'Austrian' philosophy in its overall development."<sup>17</sup>

It should also be borne in mind, however, that the objective system of science based on the pure search for truth was gradually being superseded by the new ideal of progress: Systematization was being replaced by innovation—or, as the Austrian musicologist Eduard Hanslick, who established musicology as an independent discipline, put

it succinctly in the mid-century: "System' is gradually giving way to 'research.'"<sup>18</sup> The new knowledge being acquired over the course of the nineteenth century was becoming too vast to understand, the new findings incomensurable, with the result that the aim of finding truth through science gradually had to be abandoned: "Truth is losing its absolute validity."<sup>19</sup>

#### Austrian political philosophy

Following the 1848 revolution, the university was entrusted with the task of finding a historically positive and pure definition of truth. The academic world was meant to order and classify positive knowledge to reflect the hegemony of throne and altar. Herbart's theory was deemed the only tenable philosophical system. According to Herbart, a philosopher should never presume to "directly influence his own era," since "a real object" was "not time but timelessness."<sup>20</sup> Although Herbart's system was not



Fig. 3  
Robert Zimmermann  
(1824, Prague – 1898, Prague)

based on "the facts of the revelation,"<sup>21</sup> it had "never come into conflict with existing confessions or political orders."<sup>22</sup> After all, Herbart's supporters included one of the most important Austrian education and university reformers, Franz Serafin Exner, professor of philosophy in Prague and Vienna and a forceful critic of speculative philosophy. Exner had introduced and disseminated Herbart's psychological theory in Prague. On his return to Vienna, from 1848, he promoted Herbartianism and educational reform (together with Hermann Bonitz), by judiciously filling professors' posts with Herbart supporters.<sup>23</sup> Thereafter, the Herbartianists dominated the university disciplines of psychology, philosophy, and education, and through their textbooks they conveyed the basic principles of Herbartian aesthetics. One of the leading representatives of this aesthetic principle was Robert Zimmermann. Having been awarded the first habilitation in philosophy in 1849, he obtained professorships in Olmütz (Olomouc) (1849), Prague (1852), and Vienna (1861). The author of *Philosophische Propaedeutik für Obergymnasien* (1852/53; 2nd reprint 1860; 3rd reprint

1867), he held his professorship in Vienna for thirty-five years, and for the last fifteen years was the only ordinary professor in this discipline.

#### Aesthetics as a science of form

Robert Zimmermann took up the aesthetics program outlined by Herbart and, based on the objectivism of his teacher Bernard Bolzano, wrote the most important exposition of Herbartian aesthetic theory. Starting with his provocatively critical essay *Die spekulative Ästhetik und die Kritik* (1854), Zimmermann conceived aesthetics as an "exact science"<sup>24</sup> and described it as an objective aesthetic of form, as opposed to the aesthetic of content of the idealist art philosophers. "The form of a picture is [...] what makes it pleasing or displeasing." He focused on the composite form, the "linear and color relationships": "A simple thing cannot be aesthetically pleasing or displeasing. In a composite object, only the form can please or displease. The parts outside the form, the material, are aesthetically

Fig. 4  
Franz Serafin Exner  
(1802, Vienna – 1853, Padua)



irrelevant. In these three propositions are the basis for a theory of aesthetics not only as a pure science of form but as a science at all.<sup>25</sup> As mentioned earlier, he saw the sense of his theory of aesthetics as a theory of proportions for discovering "what is beautiful, for all time and in every place."<sup>26</sup> Zimmermann's normative and purely formal variety of Herbart's aesthetics was not accepted without criticism by the Austrian Herbartianists. The Prague aesthetician Otakar Hostinský and the Graz philosopher Joseph Wilhelm Náhlovský attempted to align this strict formalism with Herbart's open version.<sup>27</sup> According to Herbart, beauty was to be found in the objective relationship between form and color, but not without reference to content: "It [the painting] contains an aesthetic component in the ideas depicted, for example, dark coloring and bold brushstrokes convey a tragic idea; a joyful idea likes light colors, delicate elaboration of all elements, perhaps even a small and neat format."<sup>28</sup> In the eyes of other Herbartianists, Zimmermann's aesthetic of form did not take sufficient account of content and thus narrowed Herbart's theory of aesthetics.

#### Empirical branches of science

The rise of natural sciences in the second half of the nineteenth century brought about a shift in focus. The systematic ideal gave way increasingly to an innovative one, and science became a research activity, whose basis was the "individual empirical branches of science." Zimmermann recognized the tide of the times and spoke henceforth of branches of aesthetics: music, fine arts, literature, etc.: "Perhaps aesthetics is destined to follow a similar course and, just as it has hitherto played a role, deduced from the content of an idea of beauty, similar to an *a priori* constructed natural philosophy, will develop on the basis of the individual aesthetic branches of science [...] into a general science of art."<sup>29</sup>

During this "functional and structural transformation of science,"<sup>30</sup> a new concept of aesthetics became established, in which the conception of pure beauty was increasingly replaced by an aesthetic "from below," as advocated by Gustav Theodor Fechner. This new concept

attached great importance to form<sup>31</sup> but deprived it of its function as a measure of value. This transformation was evident in particular in the perception of two recent disciplines, musicology and art.

In musicology, Eduard Hanslick still attempted, on the basis of an objectivist value aesthetic, "to demonstrate [...] what beauty is."<sup>32</sup> Like Zimmerman, he believed in a purely formal aesthetic concept.<sup>33</sup> In his essay *Vom Musikalisch-Schönen* (1854) he wrote: "Aesthetic appreciation knows nothing and should know nothing of the personal situation and historical background of the composer, but will hear and believe only what the work itself says." Beauty in music was limited for him to "auditory forms," the "beautiful object" that was untouchable for the "sensitive subject": "Beauty is intrinsic; it is beautiful for the pleasure it gives to the subject perceiving it, but not because of it."<sup>34</sup> In art, the importance of form was used to resolve problems relating to the development of the work. In his masterpiece *Stilfragen* (1893), the recently rediscovered art and culture historian Alois Riegl wrote that the analysis of form served only as a way of recognizing the artist's subjective intention and the history of the artwork. In 1932, Walter Benjamin paid tribute to this "new way of studying art", presenting Riegl as its "forebear".<sup>35</sup> By interpreting the specific "formal signature" of a work of art as a compelling way of giving artistic expression to the world in time and space, he had laid the groundwork for a new way of describing art and cultural history, in which the analysis of form was used to recognize rather than justify aesthetic judgments. According to Carl E. Schorske, Riegl helped to give priority to a "plurality in art beyond any simple *a priori* aesthetic standard."<sup>36</sup>

While Herbartianism extensively lost its primacy in Vienna around 1900 with the death of Zimmerman and Theodor Vogt, the last Viennese education professor to strictly espouse Herbart's ideas, it lived on in Prague, mainly through Josef Durdík and Otakar Hostinský, who founded Prague Formalism, which inspired Structuralism. Jan Mukařovský, for example, discovered an aesthetic function of language by extending Karl Bühler's language model.<sup>37</sup>

### Herbartianist form art?

According to Alexander Klee, Herbartianism was an enabling condition for modern art, particularly Viennese Jugendstil. If, as Georg Jäger writes, in the Herbartianist spirit "something that incites pleasure or displeasure does not require any content" and if beauty can be perceived in

sounds without their expressing a feeling, and in lines, forms, and colors without their depicting an object,<sup>38</sup> then it can be said that the Herbartianists in Vienna and Prague prepared the ground for modern art. The postulate is therefore that the tradition of Herbartianism fostered the development of a specifically Austrian form of Modernism, with "form art" as one of its characteristic features. The striking frequency of non-representational art in Vienna and Prague around 1900 may be seen in a new light, says Klee, "against the backdrop of the philosophy of Herbart and the Herbartianist Robert Zimmerman."<sup>39</sup>

1 Hermann Bahr, "Das junge Oesterreich," in: *ibid., Studien zur Kritik der Moderne*, ed. Claus Pias, 2nd ed. (Weimar, 2013), pp. 58–77, here pp. 61–62. I thank the Bahr diary editor Moritz Csáky for pointing out this article to me.

2 Robert Mühlher, "Ontologie und Monadologie in der österreichischen Literatur des 19. Jahrhunderts," in: Josef Stummvoll (ed.), *Die Österreichische Nationalbibliothek: Festschrift zum 25-jährigen Dienstjubiläum des Generaldirektors Univ. Prof. Dr. Josef Bick* (Vienna, 1948), pp. 488–504, here p. 491.

3 Moritz Csáky, *Das Gedächtnis der Städte: Kulturelle Verflechtungen. Wien und die urbanen Milieus in Zentraleuropa* (Vienna/Cologne/Weimar, 2010), pp. 218–20; Gary B. Cohen, "Cultural Crossings in Prague, 1900: Scenes from Late Imperial Austria," in: *Austrian History Yearbook*, 45th yr. (2014), pp. 1–30; Alexander Klee, "Viribus unitis? Networking im Vielvölkerstaat am Beispiel der Verlegerfamilie Hözel," in: *Wiener Geschichtsblätter*, 69th yr., no. 4 (2014), pp. 305–35.

4 Karl Siegel, "Philosophie," in: Eduard Castle (ed.), *Geschichte der deutschen Literatur in Österreich-Ungarn im Zeitalter Franz Josephs I: Ein Handbuch unter Mitwirkung hervorragender Fachgenossen*, vol. I, 1848–1890 (Vienna, 1935), pp. 17–48, here p. 28.

5 Josef Durdík, "Über die Verbreitung der Herbart'schen Philosophie in Böhmen," in: *Zeitschrift für Exakte Philosophie im Sinne des neuen Philosophischen Realismus*, 12th yr. (1883), pp. 317–26, here p. 322.

6 Durdík 1883 (see note 5), p. 323.

7 Karl Vorländer, *Geschichte der Philosophie*, vol. 3, part 1, *Die Philosophie in der ersten Hälfte des 19. Jahrhunderts*, revised edition with bibliography by Lutz Geldsetzer (Hamburg, 1975), p. 51.

8 Siegel 1935 (see note 4), p. 29.

9 Bernard Bolzano, *Wissenschaftslehre §§ 1–45*, ed. Jan Berg, vol. 11.1 (Bernard Bolzano-Gesamtausgabe, Reihe 1, Schriften) (Stuttgart/Bad Cannstatt, 1985), p. 209 (§ 43).

10 Johann Friedrich Herbart, *Lehrbuch zur Einleitung in die Philosophie: Textkritisch revidierte Ausgabe mit einer Einleitung* (1813), ed. Wolfhart Henckmann (Hamburg, 1993), p. 50.

11 Bernard Bolzano, *Untersuchungen zur Grundlegung der Ästhetik* (1849), ed. Dietfried Gerhardus (Frankfurt/M., 1972), p. 122; see Kurt Blaukopf, *Die Ästhetik Bernard Bolzanos: Begriffskritik, Objektivismus, „echte“ Spekulation und Ansätze zum Empirismus* (St. Augustin, 1996); Peter Stachel, "Die Schönheitslehre Bernard Bolzanos," in: Karl Acham (ed.), *Geschichte der österreichischen Humanwissenschaften*, vol. 5 (Vienna, 2001), pp. 499–518.

12 See Helene Skladny, *Ästhetische Bildung und Erziehung in der Schule: Eine ideengeschichtliche Untersuchung von Pestalozzi bis zur Kunsterziehungsbewegung* (Munich, 2012), pp. 111–30; William M. Johnston, *Österreichische Kultur- und Geistesgeschichte: Gesellschaft und Ideen im Donauraum 1848 bis 1938* (Vienna/Cologne/Graz, 1972), pp. 285–91.

13 Georg Jäger, "Die Herbartianische Ästhetik: Ein österreichischer Weg in die Moderne," in: Herbert Zeman (ed.), *Die österreichische Literatur: Ihr Profil im 19. Jahrhundert (1830–1880)* (Graz, 1982), pp. 195–219, here p. 195; Barbara Otto, "Der sezessionierte Herbart: Wissenschaftsrezeption im Staatsinteresse zur Zeit Metternichs," in: Michael Benedikt/Reinhold Knoll/Josef Rupitz (eds.), *Verdrängter Humanismus, verzögerte Aufklärung*, vol. 3, *Bildung und Einbildung: Vom verfehlten Bürgerlichen zum Liberalismus—Philosophie in Österreich (1820–1880)* (Vienna, 1995), pp. 141–55.

14 Jäger 1982 (see note 13), p. 198.

15 Robert Zimmermann, "Die spekulative Ästhetik und die Kritik," in: *Oesterreichische Blätter für Literatur und Kunst*, suppl. to *Oesterreichisch-Kaiserliche Wiener Zeitung*, February 6, 1854, pp. 37–40, here pp. 39–40.

16 See Kurt Blaukopf, "Von der Ästhetik zur 'Zweigwissenschaft': Robert Zimmermann als Vorläufer des Wiener Kreises," in: Martin Seiler (ed.), *Kunst, Kunsttheorie, und Kunstforschung im wissenschaftlichen Diskurs: In memoriam Kurt Blaukopf (1914–1999)* (Vienna, 2000), pp. 35–46, here p. 36.

17 Siegel 1935 (see note 4), p. 48.

18 Eduard Hanslick, *Vom Musikalisch-Schönen: Ein Beitrag zur Revision der Ästhetik der Tonkunst—Historisch-kritische Ausgabe*, ed. Dietmar Strauss (Mainz, 1990), p. 23.

19 Kristóf Nyíri, "Österreich und das Entstehen der Postmoderne," in: ibid., *Vernetztes Wissen: Philosophie im Zeitalter des Internets* (Vienna, 2004), pp. 15–31, here p. 19.

20 Herbart 1993 (see note 10), p. 61–62.

21 See Anon. [Aloys Flir/Leo Thun-Hohenstein], *Die Neugestaltung der österreichischen Universitäten über Allerhöchsten Befehl dargestellt vom k. k. Ministerium für Cultus und Unterricht: August 1853* (Vienna, 1853), p. 20.

22 Letter from Rudolf Eitelberger, first extraordinary Professor of Art History and Art Archeology in Vienna, to Minister of Education Leo Graf Thun-Hohenstein, November 26, 1854, quoted in Hans Lentze, *Die Universitätsreform des Ministers Graf Leo Thun-Hohenstein* (Vienna, 1962), p. 251.

23 See Johannes Feichtinger, *Wissenschaft als reflexives Projekt: Von Bolzano über Freud zu Kelsen—Österreichische Wissenschaftsgeschichte 1848–1938* (Bielefeld, 2010), pp. 146–51; Christoph Landerer, "1848 und die Wissenschaften: Staatliche Bildungsplanung und der österreichische Weg in die Moderne," in: Barbara Boisits (ed.), *Musik und Revolution: Die Produktion von Identität und Raum durch Musik in Zentraleuropa 1948/49* (Vienna, 2014), pp. 617–31.

24 Robert Zimmermann, "Zur Reform der Ästhetik als exakter Wissenschaft" (1862), in: ibid., *Studien und Kritiken zur Philosophie und Ästhetik*, vol. 1, (Vienna, 1870), pp. 223–65.

25 Robert Zimmermann, *Allgemeine Ästhetik als Formwissenschaft*, vol. 2 (Vienna, 1865), p. 21.

26 Zimmermann 1854 (see note 15), pp. 39–40.

27 See Andreas Hoeschen/Lothar Schneider, "Herbartianismus im 19. Jahrhundert: Umriss einer intellektuellen Konfiguration," in: Lutz Raphael/Heinz-Elmar Tenorth (eds.), *Ideen als gesellschaftliche Gestaltungskraft im Europa der Neuzeit: Beiträge für eine erneute Geistesgeschichte* (Munich, 2006), pp. 447–77, here pp. 461–62.

28 Herbart 1993 (see note 10), pp. 172–73.

29 Zimmermann 1870 (see note 24), p. 227.

30 Herbert Schnädelbach, *Philosophie in Deutschland 1831–1933*, 6th issue, (Frankfurt/M., 1999), p. 88.

31 Klaus Städtke, "Form," in: *Ästhetische Grundbegriffe: Historisches Wörterbuch in sieben Bänden*, ed. Karlheinz Barck et al., vol. 2 (Stuttgart/Weimar, 2001), pp. 462–94, here p. 482.

32 Hanslick 1990 (see note 18), pp. 92–93.

33 See Barbara Boisits, "Formalismus als österreichische Staatsdoktrin? Zum Kontext musikalischer Formalästhetik innerhalb der zentraleuropäischen Wissenschaft," in: *Muzikološki Zbornik/Musicological Annual*, 40th yr., no. 1–2 (2004), pp. 129–36.

34 Hanslick 1990 (see note 18), pp. 22, 26.

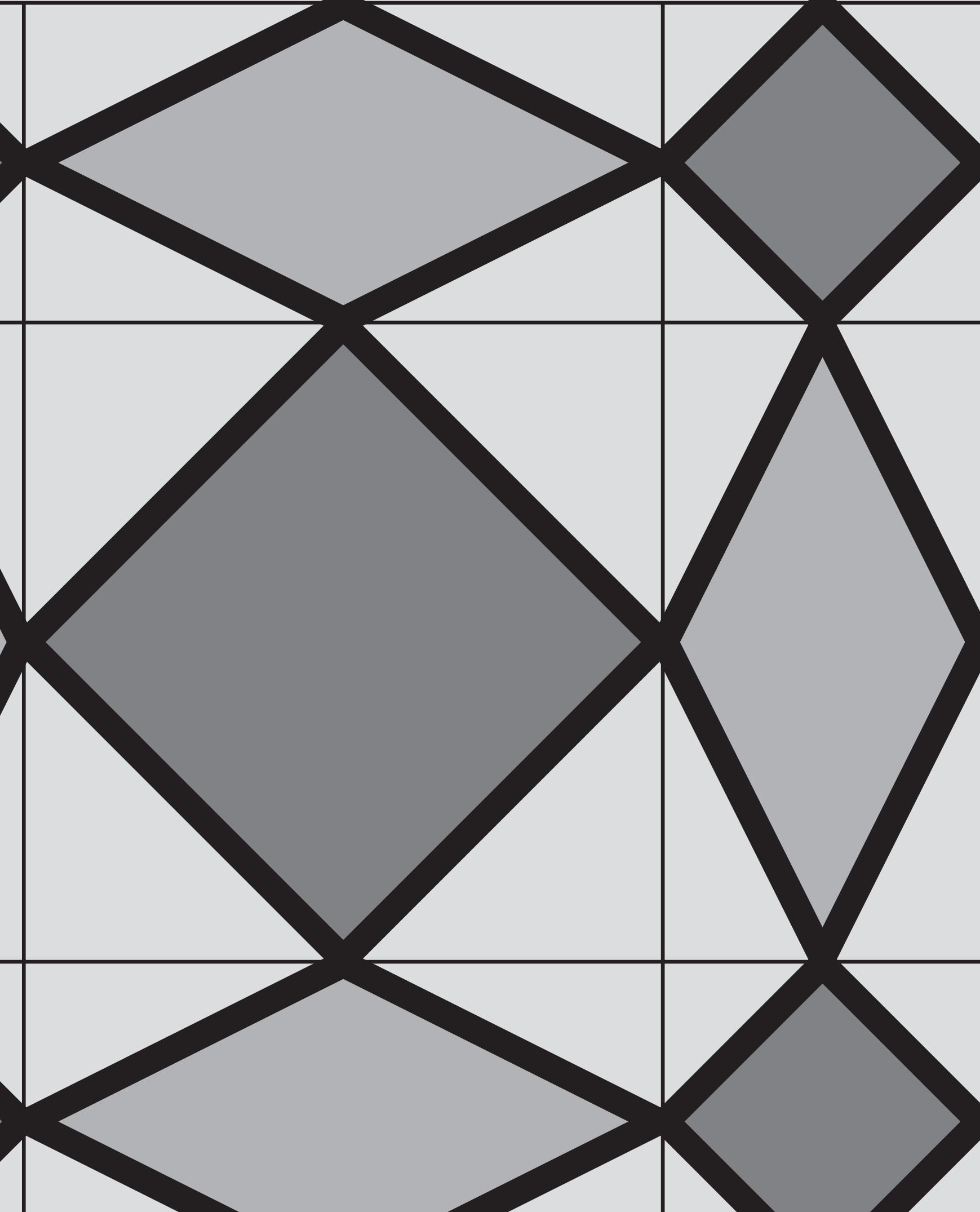
35 Walter Benjamin, "Strenge Kunsthissenschaft: Zum ersten Bande der 'Kunstwissenschaftlichen Forschungen'" (2nd vers., original 1932), in: ibid., *Gesammelte Schriften*, vol. 3 (Frankfurt, 1991), pp. 369–74.

36 See Carl E. Schorske, *Fin-de-Siècle Vienna: Politics and Culture* (New York, 1981), pp. 234–35.

37 See Jaroslav Strítecký, "Vom Prager/Wiener Formalismus zum Prager Strukturalismus: Zu einer mitteleuropäischen Tradition," in: Irmgard Bontinck (ed.), *Wege zu einer Wiener Schule der Musiksoziologie: Konvergenz der Disziplinen und empiristische Tradition* (Vienna, 1996), pp. 35–48.

38 Jäger 1982 (see note 13), p. 204.

39 Alexander Klee, "Coincidence or Tradition?—Distinctive Features of Art in Vienna and Berlin," in: Agnes Husslein-Arco et al. (ed.), *Vienna—Berlin: The Art of Two Cities*, (exh. cat. Belvedere, Vienna) (Munich, 2013), pp. 81–85.



## Form Art – A Phenomenon of a Cultural Region

Alexander Klee

"In view of the fact that aesthetic forms are at the same time norms, they are the major premises of art theories, practical aesthetics [...]. While the material has no bearing on the theory of form, it is crucial for the theory of art. For on this it depends how far the goal, being the realization of forms, can be successfully achieved."<sup>1</sup>

Robert Zimmermann, 1865

In the Habsburg Empire in the second half of the nineteenth century, form was more than merely a descriptive concept. It was the expression of a realization, of a particular consciousness. Ultimately, around 1900, form became the basis for a wide variety of non-representational, often ornamental art. The following examines the foundations of this characteristic, its evolution and the preconditions leading to form art and how it was seen in a special light. It illustrates the outstanding and unique status of non-representational art in the Habsburg Empire with origins that differed from abstract art, which evolved later.

One factor to emerge is the great influence that education exerts on a cultural region and its enduring contribution to the development of a collective consciousness. The philosophical background to the Habsburg Empire is explored in the contribution by Johannes Feichtinger. This essay examines the significance of Johann Friedrich Herbart (1776–1841), whose theories had a profound influence on art education and, ultimately, on art itself within the Habsburg Monarchy.

By way of introduction, these ideas are encapsulated in the title of the publication about aesthetics as a science of form, *Allgemeine Ästhetik als Formwissenschaft*,<sup>2</sup> by the philosopher Robert Zimmermann as well as in the words of his close friend, the music critic Eduard Hanslick, who said, "the content of music is tonally animated forms."<sup>3</sup>

Robert Zimmermann, student of Bernard Bolzano and Franz Serafin Exner, was one of the greatest exponents of Herbart's theories within the Habsburg Empire. Herbart's followers, the Herbartians, opposed German idealism,<sup>4</sup> with Hegel's philosophy and the Hegel school being the object of particular criticism.<sup>5</sup> In contrast to

the rest of the German-speaking region, particularly Prussia, where, in the first half of the nineteenth century, the philosophical views of Kant and Hegel had taken root and had a widespread following, in the Habsburg Empire these ideas were roundly attacked, with Bernard Bolzano leading the charge.<sup>6</sup> Bolzano's philosophical views were aligned with Herbart's in many respects. In fact, we should really speak of a Bolzano-Herbartian philosophy, as many supporters and students of Bolzano, including Exner and Zimmermann, were champions of Herbartianism.<sup>7</sup> Moreover, the banning of Kant's and Hegel's theories throughout the Habsburg Monarchy further intensified a development that was genuinely Austrian and was not confined solely to philosophy.

The philosophy of both Bolzano and Herbart shows a close affinity with Leibniz. An intensive study of Leibniz's teachings is also demonstrated in the writings of Franz Serafin Exner and Robert Zimmermann.<sup>8</sup> Leibniz's theories argue that of all the potential worlds, the existing one is best and any change would only worsen the situation. This conformed with the Neoabsolutist views of the Habsburg Empire, in the same way that Leibniz's explanation of the world through mathematics echoed the intentions and opinions of both Herbart and Bolzano.<sup>9</sup> Mathematics reflected a universal and cosmopolitan worldview and so could not be exploited for nationalist aims. In a multi-ethnic state like the Habsburg Empire, it was a language that could be universally understood and therefore a constant,<sup>10</sup> which, unlike the philosophy of Hegel and Kant, could not be reinterpreted to serve national interests.<sup>11</sup>

The dominance of Herbart's theories in Austria, both before and after 1848, ultimately resulted in his philosophy becoming so universal that he is often dubbed the official philosopher of the Habsburg Empire, without ever having actually taught there.<sup>12</sup> The stronghold of Herbartianism became Prague, where the groundwork had been laid by Bernard Bolzano.<sup>13</sup> It was Prague's professor of philosophy Franz Serafin Exner who finally paved the way for the educational reforms after joining the Ministry of Culture and Education, established fol-



Fig. 1  
**Bohumil Kubišta**  
*St. Sebastian*, 1912  
Národní galerie v Praze / National Gallery of Prague



Fig. 2  
**Bohumil Kubišta**  
*St. Sebastian*, 1912  
Národní galerie v Praze / National Gallery of Prague

lowing the 1848/49 Revolution, where he worked under Minister Leo von Thun-Hohenstein.<sup>14</sup> Exner's students included important Herbartians such as František Čupr, Eduard Hanslick, Gustav Adolf Lindner,<sup>15</sup> Franz Karl Lott,<sup>16</sup> Joseph Wilhelm Náhlowsky, Wilhelm Fridolin Volkmann, and Robert Zimmermann.<sup>17</sup> At the same time it was Exner who, by appointing Herbartians, consolidated the influence of Herbart's philosophy and pedagogy in the Habsburg Monarchy, and on various occasions took a bold stance against the Hegel school.<sup>18</sup> Herbart's aims in education were to teach drawing based on mathematics, thereby reaffirming the world and its order, a world in which ultimately the individual would meekly toe the line. This served the interests of the Neoabsolutist Habsburg Monarchy and corresponded with the reforms of the Ministry for Culture and Education. Teaching drawing, therefore, was not

only concerned with fostering artistic and intellectual skills but also with manifesting a particular worldview.<sup>19</sup> The consequences of this dominance of Herbart's theories can be seen in drawing lessons that used trigonometry to develop basic visual skills and to help recognize how the world was ordered.<sup>20</sup> The pupil was tasked with understanding the principle of standardized triangles and internalizing their forms so as to acquire the ability of pure seeing.<sup>21</sup> In order to gain a clear overview of the number and variety of forms, Herbart omitted the teaching of perspective to focus instead on the surface,<sup>22</sup> formed out of triangular components, the elementary shapes.<sup>23</sup> This mathematics-based education taught that geometric shapes are the basis of beautiful form and thus conveyed an aesthetic that sees complex structures as a framework of interrelating forms and their ratios.<sup>24</sup>



Fig. 3  
**Adolf Hözel**  
*Birch Trees in Moss (Landscape with Birch Trees)*, 1902  
Landesmuseum Mainz

Gustav Adolf Lindner also followed these ideas with his proposal to use the triangle as the basis of a "rational" teaching of drawing at elementary level.<sup>25</sup> Lindner, one of the most influential Herbartians in the Habsburg Empire, referred to this method as "a process based on the principles of science, namely those of mathematics and psychology."<sup>26</sup>

The special significance of the triangle also led Robert Zimmermann<sup>27</sup> to adopt the ideal proportion of the golden ratio,<sup>28</sup> a mathematics-based aesthetic that the Viennese architect Camillo Sitte<sup>29</sup> and Gustav Theodor Fechner<sup>30</sup> later explored intensively, as did the artists of the Secession (e.g. Koloman Moser, plate 3, and Adolf Hözel<sup>31</sup>, plate 22), the Czech Cubists (figs. 1, 2), the Hungarian István Béöthy (plate 237), and Vienna's Kinetic artists (plate 199).

Like music, geometry speaks a universal, cosmopolitan

language, as Gustav Adolf Lindner highlights in his proposal to reform the teaching of drawing. Within the multi-ethnic state, this cosmopolitan aspect of teaching drawing based on mathematics, and the resulting aesthetic of form, was advantageous, a fact Lindner points out explicitly in his proposal.<sup>32</sup> This can be equally applied to music, especially instrumental music.

Misgivings about viewing art based on an aesthetic of form, as opposed to content,<sup>33</sup> are reflected in the prejudice of many art historians.<sup>34</sup> Richard Hamann, for example, wrote in his standard history of art *Geschichte der Kunst* (1932), that fine art in the work "of the Viennese Klimt degenerates into mannerism—crossing over into decorative art." A further example is Georg Gervinus, who in 1868 criticized the intellectual hollowness and lack of substance in Viennese life and its

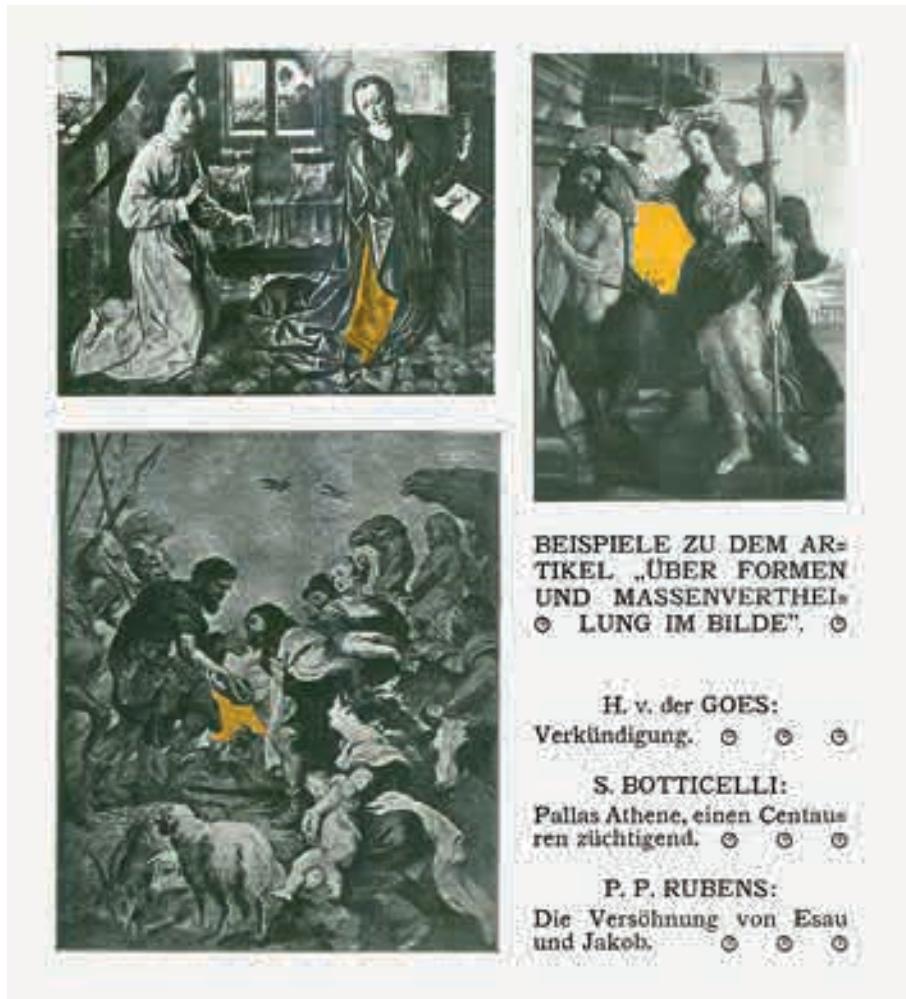


Fig. 4  
**Adolf Hözels**  
 Analysis of Old Masters  
*Ver Sacrum*, vol. 15, 1901  
 Belvedere, Vienna, Library

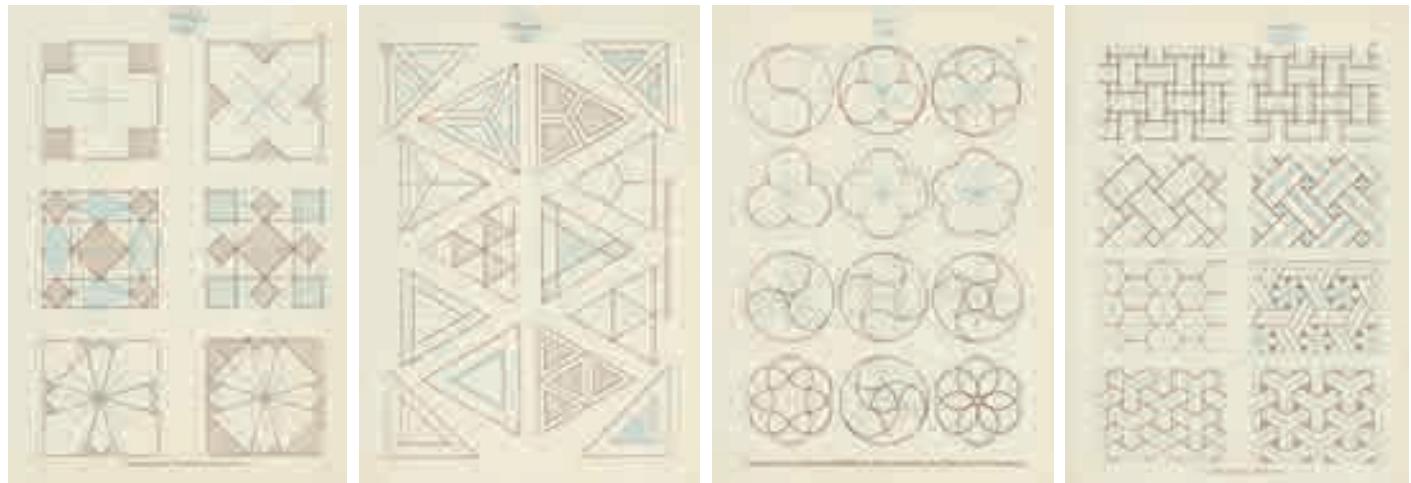
cultivation of "empty" instrumental music, a statement to which Zimmermann responds in a subsequent article.<sup>35</sup>

Zimmermann's rejoinder to another critique of the treatise *Vom Musikalisch-Schönen* by his friend Eduard Hanslick also comes as no surprise: "The aesthetician rightfully assumes that every external artistic manifestation is only the reflection of a purely internal 'artwork of ideas.' Yet the speculative aesthetician wrongly claims that each art form must construct this 'artwork of ideas' in the same way as does the poet. The composer's 'artwork of ideas' is made of tonal ideas, that of the visual artist out of form ideas; only that of the poet is expressed in word ideas."<sup>36</sup>

Comparable approaches can be found in the work of Zimmermann himself, who, like Ernst Mach, had studied the music theories of Hermann von Helmholtz.<sup>37</sup> He regarded forms in music as tones<sup>38</sup> or melodies that he relates to the other arts, for example painting and

sculpture, albeit without developing the form analogies identified by Mach.<sup>39</sup>

Zimmermann believed that art did not require any content. Tones can be beautiful without expressing a feeling, just as lines, forms, and colors can be beautiful without depicting an object.<sup>40</sup> Analogies can be drawn here with the "tonal forms" of Mach, who said: "If two series of tones be begun at two different points on the scale, but be made to retain throughout the same ratios of vibration, we recognize in both the same melody, by a mere act of sensation, just as readily and immediately as we recognize in two geometrically similar figures, similarly situated, the same form."<sup>41</sup> While Mach defines the melody in music in the relationship of sounds, Adolf Hözels regards varying forms in a picture as a "form melody" (fig. 3). The proximity of art to the ideas of Gestalt psychology is reflected in a statement by its founder Christian von Ehrenfels. Building on Mach's theories, Ehrenfels writes in his fundamental essay: "Not



Figs.. 5–8

**Anton Anděl**

*Das geometrische Ornament, Ein Lehrmittel für den elementaren Zeichenunterricht an Real- und Gewerbeschulen, entworfen und mit Unterstützung des k. k. Ministeriums für Cultus und Unterricht veröffentlicht* (Vienna, 1876), plates XVI, XVIII, LX, LVII

only the similarity of kindred products of nature but also that of the products of human creation rests in large part, when considered from the standpoint of their stylistic affinity, upon Gestalt qualities. What we call a feeling for style in a given province of art almost certainly consists principally in nothing other than the capacity to grasp and to compare Gestalt qualities of the relevant category.<sup>42</sup>

In line with Gestalt psychology, then, art demonstrates that these "Gestalt qualities" are transportable. This is a principle that art historians, for example Alois Riegl<sup>43</sup> or Heinrich Wölfflin,<sup>44</sup> have employed to define stylistic traits.

These ideas about form were also shared by artists and applied to works of art history, for example by the Czech Cubists,<sup>45</sup> or by Adolf Hözel, who, based on the example of paintings by the old masters, demonstrates the importance of form in art in his essay "Über Formen und Massenvertheilung im Bilde" in *Ver Sacrum*,<sup>46</sup> the organ of the Vienna Secession (fig. 4).<sup>47</sup> In the eyes of both Zimmermann and Herbart, content had no bearing on whether art pleases or displeases, for this is based on psychological fact. "Aesthetics as a pure science of form is a morphology of the beautiful. By showing that only forms please or displease it demonstrates that everything that pleases or displeases does so through form. [...] § 74. The first part of aesthetics as a science of form, the general theory of form, is dedicated to seeking out the forms that generally and essentially please and displease."<sup>48</sup> This applies not only to the appreciation of art but also to the practical aestheti-

cian, the artist. "In view of the fact that aesthetic forms are at the same time norms, they are the major premises of art theories, practical aesthetics [...]. While the material has no bearing on the theory of form, it is crucial for the theory of art. For on this it depends how far the goal, being the realization of forms, can be successfully achieved."<sup>49</sup>

Comparable views are reflected in Anton (Antonín) Anděl's<sup>50</sup> portfolio *Das geometrische Ornament*,<sup>51</sup> which was published in German and Czech. Using images, this explained both simple and complex geometric forms as examples for teaching (figs. 5–8).

The fact that these were not isolated instances is demonstrated by the theoretical writings of landscapist Emil Jakob Schindler, who called for a thorough training in elementary schools based on geometric drawing.<sup>52</sup>

Seen from this perspective, works by many of the artists in the Habsburg Empire appear in a new light. This might have been a (perhaps even *the*) catalyst behind the planarity of Viennese Jugendstil and its specific approach to form and frequent geometricization. Form art can thus be seen against the backdrop of the philosophy of Herbart and the Herbartian Robert Zimmermann.<sup>53</sup>

In Vienna it was the Secession above all that disseminated and propagated form art, from 1900, acting almost in tandem with the Vienna School of Applied Arts, and, with some of the same people active in the Wiener Werkstätte and Galerie Miethke, gave it international significance.

Furthermore, the holistic approach and the reduction of artistic expression to form demonstrate parallels between the formalist artists working in Vienna and the Czech Cubists. Both Secessionists and Prague Cubists were intent on infusing every area of life with art. The aim, the model of creating an ideal, better world and thus adopting an educational role, was in line with the ideas of the Herbartians.

Comparable models to the Cubist approach to space can be found in *Die Analyse der Empfindungen* by the Prague-based physicist and philosopher Ernst Mach, which was popular throughout the empire. The explanatory sketches it contained were known worldwide, especially his folded visiting card demonstration (fig. 9). In art history, the spatial illusion this creates is frequently linked to the early works of Picasso (fig. 10). This approach to form, also evident in the work of the French Cubists,<sup>54</sup> fell on fertile ground among the artists schooled in Herbart's psychology, particularly the Czechs. They closely relate to the observations made by Ernst Mach, whose theories and writings about psychophysics were extremely influential on Viennese art and literature. In turn, Mach also made explicit reference to Herbart, whose sensory psychological writings had a lasting impact on him.<sup>55</sup>

The geometric facets in Czech Cubism are boldly ornamental, while horizontal and vertical patterns are associated with the Vienna Secession and the third variation, composed of geometric planes, characterizes Hungarian Constructivists. This geometric formalism can be explained by the influence of Herbartian principles of form and aesthetics, thereby contradicting the interpretation of artworks as realizing Expressionist crystalline structures. In contrast to abstraction, form art is not a "one-way street"<sup>56</sup> and does not banish the possibility of joining forms into representational compositions.

Characteristic for form art is the importance attached to how forms are joined and composed. This was particularly apparent in toys produced at this time, which were often composed of basic geometric shapes. It is equally evident in the geometric forms that artists from the Vienna Secession combined into planar, ornamental compositions, or in the collages and planar shapes, whose "forms and distribution of mass" were used as preliminary stages to a composition.

Viennese Kinetic art demonstrates a continuity with form art. Although there are obvious influences from Futurism and Cubism, there can be no denying the connection with Austrian form art in Kinetic art's rigor-

ous approach to form. The planarity and formal fragmentation, also adopted in sculpture and applied art, hark back to the form art of the Secession and the Wiener Werkstätte. Kinetic art, however, never became permanently established in Vienna. In part this can be explained by the fact that, following the separation of Austria-Hungary and its cultural region into small nation states, the cosmopolitan-artistic approach ran contrary to the emergence of national identity. However, the emphasis on drawing in elementary education had fostered a common understanding of form that unites artists from the regions of the Habsburg Empire.

The following will consider how the preconditions for this common understanding of form arose, whether this was reflected in school education, whether it was across the board and to similar standards, and over what period of time.

Up until 1873, the methodology behind the teaching of drawing was advanced and debated in very different ways (for instance in the magazine *Die Realschule*). The approach in France was discussed using the example of Parisian schools and their educators.<sup>57</sup> As befits this period of Historicism, there were also calls for aesthetic education based on the styles of art history,<sup>58</sup> and then there were those who advocated scientific illustration.<sup>59</sup> And, as early as 1863, an essay by Ignaz Smidt calls for the Herbartian formal steps to be applied in drawing instruction.<sup>60</sup>

Arguments concerning school education versus individual talent raised a taboo subject: Is it possible to teach art or does it depend on unteachable genius? This required a choice between the convenient concept of genius and education, the belief that art could be explained, taught, and communicated. In the latter case, teaching no longer carried negative connotations for art, associated with the constraints of "art education" in which the "genius" was suffocated, but rather it could be seen as nurturing existing aptitudes and talents.

Education would thus influence and shape creative aptitudes and consequently the development of art and artists. It follows, then, that this would also be affected by changes in educational views and, therefore, be part of an overall historical context. This fundamental aspect concerning the teachability of art and its principles was widely discussed in the run-up to the art school reform of 1873.<sup>61</sup>

Eduard Leisching, who later became director of Vienna's Museum for Art and Industry (today's MAK), tacitly argued in a lecture against leading figures of aesthetics,

nungsebene (beziehungsweise auf Linien, vermöge welcher sich die nungsebene (beziehungsweise auf Ebene) heraustreibe heit des vorher (S. der monokularen obachtet. Das Bla konvexe Kante be es mir gelingt, be schlagenes Buch a erscheint als *e*. Kennt man die



Fig. 31.

1) Die Tiefenempfindung verhält sich in einem Raum, an dessen Grenzen sie be fällt nicht zusammen mit der Fläche minima die gesehene räumliche Kontur, aus Draht

Fig. 9

Ernst Mach

Text from *Die Analyse der Empfindungen*, 1886



Fig. 10

Pablo Picasso

*Small House in the Garden (Rue des Bois)*, 1908

Pushkin Museum, Moscow

such as Alexander Gottlieb Baumgarten (the founder of aesthetics as an independent discipline), Georg Wilhelm Friedrich Hegel, and the Hegelian Friedrich Theodor Vischer in Stuttgart, all of whom supported the cult of the genius and "top-down" aesthetics (deductive). Leisching contrasted this with "bottom-up" aesthetics (inductive), an empirical approach to aesthetics backed by the theories of Gustav Theodor Fechner. "Empirical aesthetics is the 'beautiful,' the interaction of individual forms, types, motifs, to create an overall effect that pleases and satisfies the artistic sense. It is the role of aesthetics to investigate the ratio of these elements and their technical application and realization to produce a pleasing overall impression. From these facts, certain rules about art can be deduced for every art form, which can be elevated to attain a certain universality; [...] When this (empirical) aesthetics makes itself heard, then speculative aesthetics, which genuine artists never bowed to and perceptive art lovers only

grudgingly accepted, will disappear and a true feeling for art will vanquish false art rhetoric."<sup>62</sup> In a later lecture, Leisching again challenged the concept of the artistic genius.<sup>63</sup>

This point was debated by the educationalists Alois Pokorny and Joseph Schnell<sup>64</sup> in an essay and in subsequent rejoinders. During the discussion about whether freehand drawing as a mandatory subject should be required for progression to the next class at school, Pokorny argued against this, convinced that drawing needed special talent (i.e. genius). Schnell, meanwhile, states: "In scientific circles, as opposed to artistic circles, the opinion is widely held that not everyone can learn to draw, and that this requires a special talent, a highly pronounced sense of form. [...] Children display an instinct for drawing even in the first year of elementary school. [...] People will object that there are many children at school who do not show this, but one cannot deny that it is often precisely these

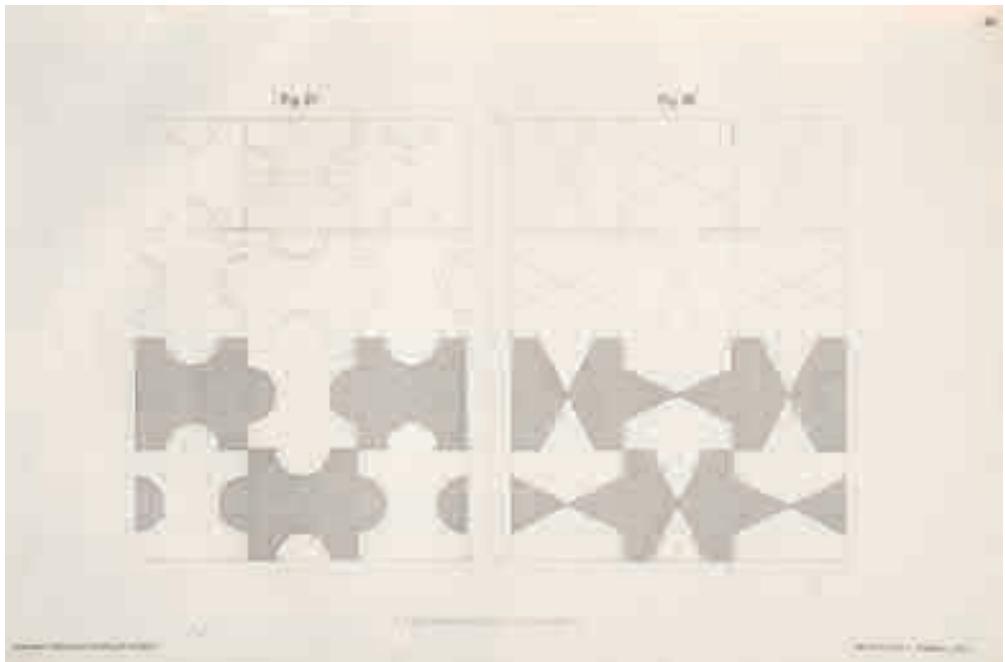


Fig. 11  
**Josef Grandauer**  
*Elementar-Zeichenschule. Vorlagen zum Vorzeichnen auf der Schultafel in den Volks- und Bürgerschulen* (Vienna, 1870), plate 80, figs. 27, 28

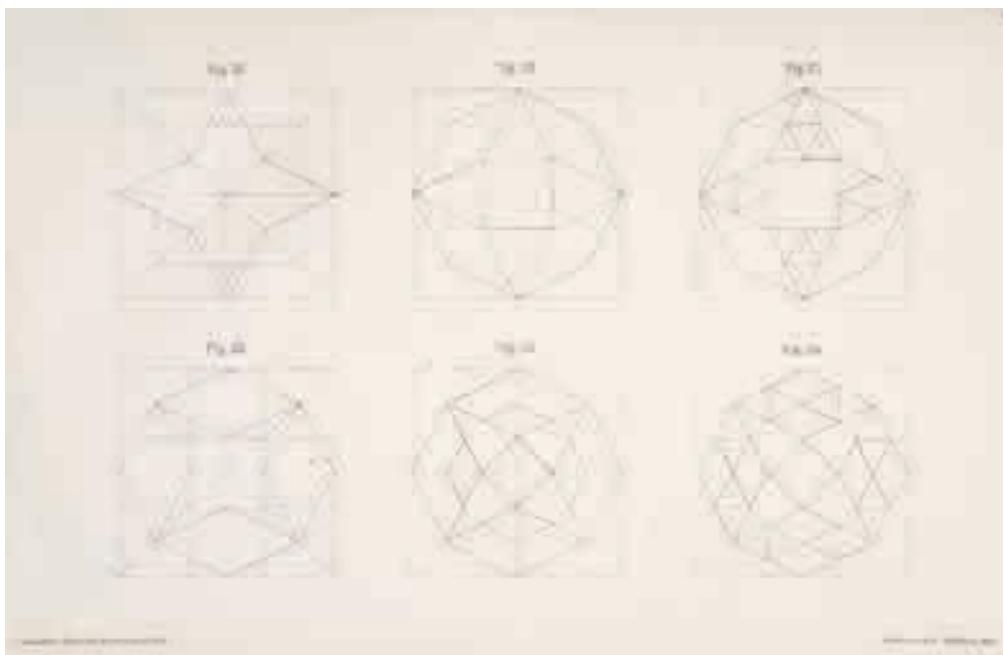


Fig. 12  
**Josef Grandauer**  
*Elementar-Zeichenschule. Vorlagen zum Vorzeichnen auf der Schultafel in den Volks- und Bürgerschulen* (Vienna, 1870), plate 46 figs. 19–24

children who, when given the appropriate instruction, develop into artists later on. Girls are no exception here and they, too, can become artists, although the profession seems to be different for the female sex. This is proof that everyone has a natural feeling for drawing, albeit to varying degrees, but no more and no less than a feeling for other subjects. Artistic talent, consisting of

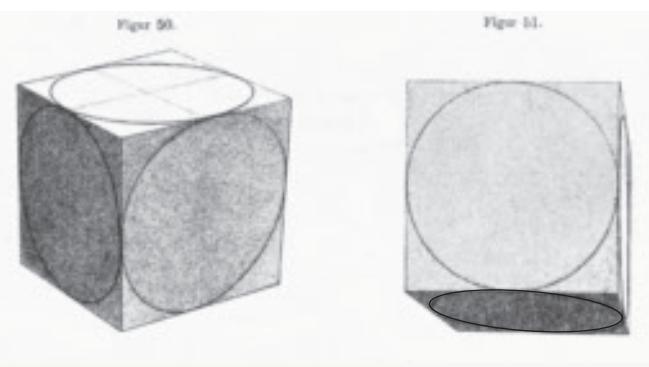
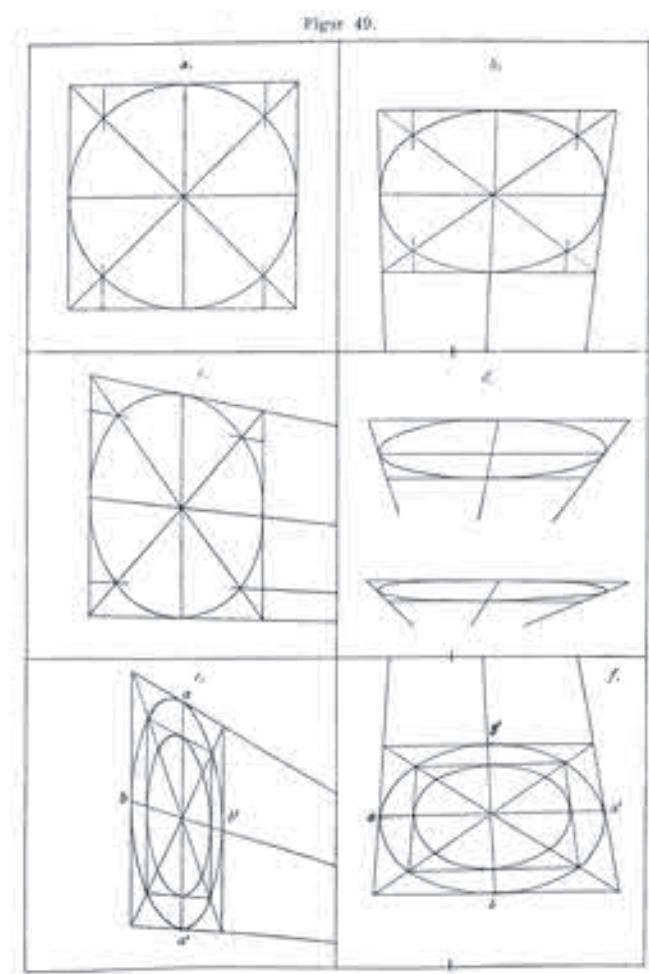
the ability to fix ideas and give them visual expression, is something different. But secondary schools are not here to produce poets and scholars.<sup>65</sup> Once drawing had become a mandatory subject at elementary schools in 1870,<sup>66</sup> standards of teacher training also had to be improved.<sup>67</sup> Drawing schools were established to address this and lay the groundwork for

the future, for example in Brünn (Brno)—where Josef Roller, father of the Secessionist Alfred Roller,<sup>68</sup> was one of the founders—in Vienna by Josef Grandauer, and in Prague soon afterward. Further drawing schools gradually appeared, emerging first in the larger towns of the crownlands.<sup>69</sup> Alfred Roller pursued this educational mission at the Vienna School of Applied Arts, later bringing his experience to the Secession.

1873 was the year of major reforms in the teaching of drawing.<sup>70</sup> These reforms, introducing explicit educational targets and methodologies, defined the curriculum for drawing and geometric form theory at *Volks-schulen* (elementary schools), the curriculum for free-hand drawing at *Bürgerschulen* (lower secondary schools), teacher training colleges, and *Oberreal-schulen* and *Realgymnasien* (high schools) as well as for drawing instruction at vocational colleges.

Josef Grandauer, teacher at the Staats-Realschule<sup>71</sup> and later lecturer on the methodology of teaching drawing at the Vienna School of Applied Arts (1877/78),<sup>72</sup> was one of the most important exponents of this reform. He compiled a handbook on the subject, *Die specielle Methodik des Zeichenunterrichtes*, which was published in 1875.<sup>73</sup> In this, he explained his special methodology for teaching drawing, based on Herbart's formal steps of instruction. Corresponding with Herbart's "phase of absorption," the stage "clarity" trains the eye "as the mediating organ for conscious spiritual seeing" and the hand as "the tool needed to depict what is seen."<sup>74</sup> The stage of "association" practices "looking, observing, making the right judgments from viewing the objects in question, and these exercises help develop cognitive and comprehension skills."<sup>75</sup> The third stage, according to Herbart, is the phase of reflection, when the acquired knowledge is ordered. This stretches the powers of memory to retrieve concepts, bringing them back into consciousness, "and reproduce these, thereby encouraging autonomy."<sup>76</sup> Grandauer refers to the resulting knowledge, the new awareness—for Herbart the last stage, named "method"—as "the formation of taste," in which "using relevant exercises by way of instruction and presentation, pupils become acquainted with the symmetrical, regular, and rhythmic in composing forms and thus learn the basic laws of beautiful form."<sup>77</sup> To achieve these aims, according to Grandauer, only geometric forms were suitable.<sup>78</sup>

Grandauer's handbook was preceded by his 1870 textbook *Elementar-Zeichenschule*,<sup>79</sup> which was published as a volume of plates and a smaller accompanying booklet to be used for teaching at elementary and low-



Figs. 13 and 14

**Anton Anděl**

Three-dimensional squares and cubes, figs. 49–51, from: *Anleitung zum freien Zeichnen nach Modellen* (Vienna, 1898)

er secondary schools (fig. 11), both reflecting the ideas of Rudolf von Eitelberger, founding director of Vienna's Museum for Art and Industry.<sup>80</sup> At the beginning of *Elementar-Zeichenschule* are basic ornamental shapes

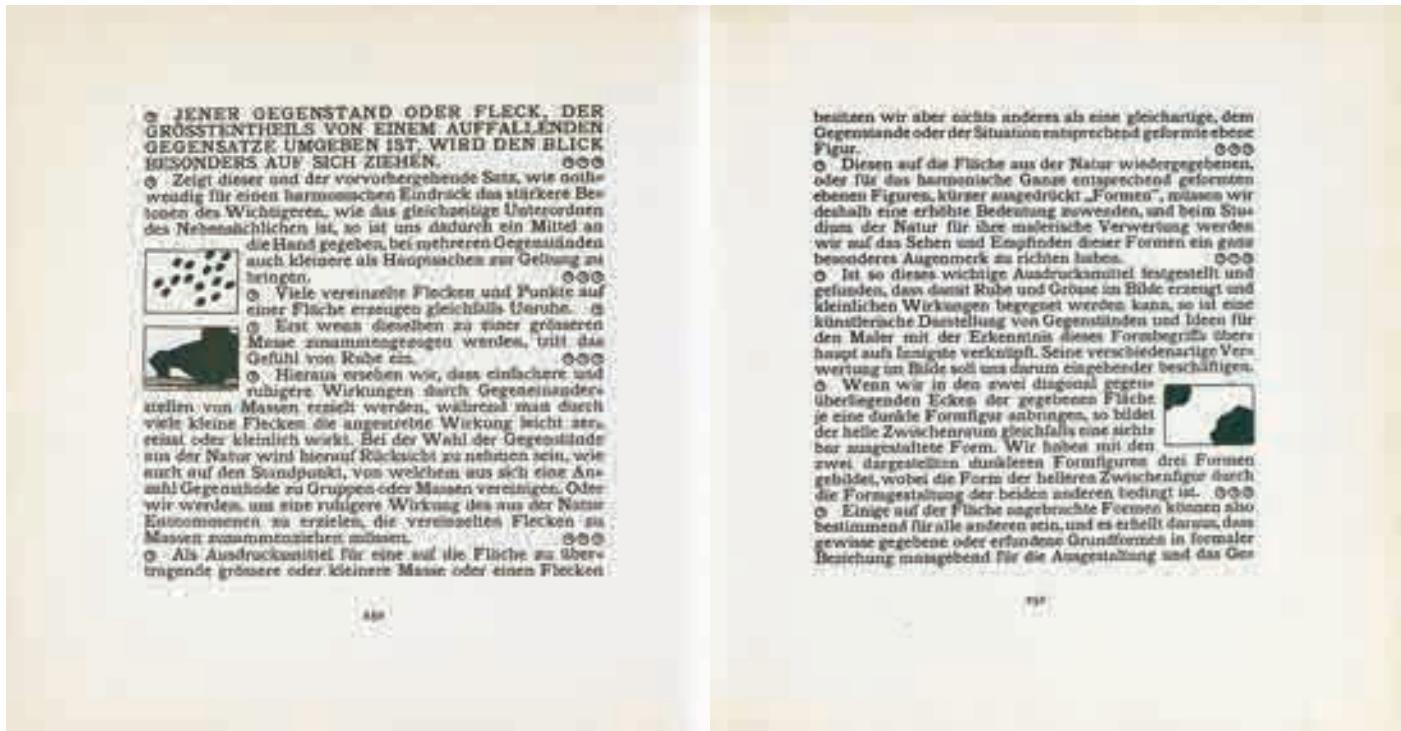


Fig. 15

Adolf Hölzel

"Über Formen und Massenvertheilung im Bilde"

Double spread from *Ver Sacrum*, vol. 15, 1901, Belvedere, Vienna, Library

for pupils to copy using the "stigmographic method." This grid of dots as a method of training drawing skills had been developed in 1839 by the Austrian educationalist Franz Karl Hillardt<sup>81</sup> and published in Prague, and was still in use in 1900.<sup>82</sup> It helped pupils draw geometric shapes and ornaments,<sup>83</sup> and was welcomed by Herbartians like Robert Zimmermann as a great step forward.<sup>84</sup>

"As everything depicted in visual art has an impact mainly through the symmetry, regularity, and rhythm of forms, as well as their effective arrangement and conformity with the principles of composition, special consideration needs to be given to these aspects in the choice of subject. For this reason, depictions from nature, e.g. landscapes, animals, flowers etc., are less suitable as models for elementary drawing lessons than geometric or ornamental forms that demonstrate these laws of beauty in a simple way that is easy to understand."<sup>85</sup> While freehand drawing was introduced with geometric shapes such as the triangle and square, an understanding of space was practiced using wire and wooden models (figs. 12–14; plate 116).<sup>86</sup> In a critique of Anton Anděl's *Anleitung zum elementaren Unterrichte*

*im perspektivischen Freihandzeichnen nach Modellen*, it was deemed "very beneficial" to "limit the wire model to the right angle, the equilateral triangle and the square with two central lines, used only in the main positions."<sup>87</sup> With hindsight, Julius Leisching writes critically about Grandauer's method: "Throughout the entire nineteenth century it was taken as a given that the foundation for all drawing lessons could only be geometric form theory [...]. When in 1872 a teachers' conference called for a curriculum that allowed the sixth grade to draw flowers and fruit, the ministerial decree banned all naturalistic illustrations of flowers, animals, and landscapes, not only at elementary and lower secondary schools but also at teacher training colleges, as the old curriculum considered the drawing of three-dimensional ornaments as the highest standard of instruction, even for teacher training. At that time there was a fear, not entirely unfounded, of the specter of 'pretty pictures,' which is why the elementary school teacher is now to regard geometric ornament as the 'grammar of drawing'."<sup>88</sup>

Up until 1879, further "elementary reference works" and instructions were published, including Anton Anděl's



Fig. 16  
**Anton Anděl**

*Der moderne Zeichenunterricht an Volks- und Bürgerschulen. Ein Führer auf dem Wege zur künstlerischen Erziehung der Jugend, part IV (Vienna, 1906)*

*Das geometrische Ornament*, which was issued in 1876 with the support of the Ministry of Culture and Education.<sup>89</sup> The ministry promoted sales of the portfolio by giving it to schools at a discounted price through the Museum for Art and Industry or, in some instances, even allocating copies.<sup>90</sup>

In his lecture "Die Zeichenkunst vom Standpunkt der Descendenztheorie,"<sup>91</sup> Camillo Sitte had argued that all children, by nature, were similar in their aptitude for drawing. Almost twenty years later, he provocatively questioned the idealistic concept of genius, very much in the Herbartian spirit: "There is a large community of artists, art lovers, and connoisseurs who are of the opinion that composition cannot be learned and that only three things are necessary, namely: genius, secondly: genius, and thirdly: genius again, and that the artist is made entirely of inspiration and has at least one more inner sense than other ordinary mortals. [...] Even if you do not endorse this well-rounded circle of ideas, but think instead that certain mental powers, which every human possesses, albeit more strongly developed in artists, can be strengthened and shaped by education—there is still no avoiding the fact that school-

ing alone cannot teach or explain the composition of artworks of a grand style and scope."<sup>92</sup> In his article, Sitte recommends teaching using "essential principles of ornamental composition about sequence, symmetry, distribution of mass."<sup>93</sup>

As already mentioned, the subject of "forms and the distribution of mass in the picture" was explored in 1901 by Adolf Högl in the Vienna Secession's magazine *Ver Sacrum*, and emerged as one of the most influential treatises for modern art.<sup>94</sup> It was on this article that Anton Anděl based the final part of his four portfolios for modern drawing instruction at elementary and secondary schools (figs. 15, 16).<sup>95</sup>

Standardizing education, however, required suitably trained staff, and so, in 1872, the ministry introduced a three-year course for drawing teachers at secondary and vocational schools, which had been devised by a committee including Rudolf von Eitelberger, Heinrich von Ferstl, Ferdinand Laufberger, and Josef von Storck. The training program was launched at Vienna's Museum for Art and Industry in 1872/73.<sup>96</sup>

As a way of ensuring equal standards across the board, the Ministry of Education engaged inspectors to mon-

itor the drawing schools of the teacher training colleges throughout the crownlands. In 1876, this inspectorate included Grandauer and Andél.<sup>97</sup>

In 1873, at the education department's exhibition preceding the World's Fair, it was protested "that across the various crownlands of our multifarious monarchy, the *Realschulen* (secondary schools) are organized in different ways."<sup>98</sup> This prompted the accusation that these secondary schools were providing inconsistent standards of education, with the author placing the responsibility for solving the problem on the respective provincial parliaments. While this observation was based on the subject of geometric drawing, extending the reproach to freehand drawing was categorically rebutted in the essay: "That the classes, educational aims, and success of freehand drawing at *Realschulen* cannot be as bad as alleged, is demonstrated by the fact that the committee advising on a new curriculum for elementary and secondary schools, presided over by Herr Hofrat Eitelberger, is basing this, with minor modifications, on the current *Realschule* curriculum."<sup>99</sup>

Participating in this exhibition were schools from Galicia, Silesia, Moravia, Bohemia, Lower Austria, Upper Austria, Styria, Tyrol, and the Austrian Littoral. Several vocational schools were also involved. Hungary is absent from this list.<sup>100</sup> At the same time, one must remember that in Austria "greater attention has been given to this important subject only since the introduction of *Realschulen* and vocational schools [...] and through a specially established committee [Austria] is currently striving to initiate the regulation of all drawing instruction at elementary, secondary, and vocational schools, organized according to rational principles."<sup>101</sup>

In relation to the other international participants, drawing instruction in Hungary was "not included [in the World's Fair] owing to its special status in the earlier report."<sup>102</sup> This report notes that a state drawing school was only founded in Hungary in 1871 and, as a result, a standardized school curriculum had yet to be introduced throughout the country's schools. Herbart's influence, however, had already made itself felt after 1849, with the major school and teaching reform under Minister Leo von Thun-Hohenstein, drawn up by Franz Serafin Exner and Hermann Bonitz. These reforms continued after the Compromise of 1867,<sup>103</sup> now under the direction of József Eötvös de Vásárosnamény, culminating in 1871 with the foundation of the Hungarian Royal School of Model drawing and Art Teachers' College (Magyar Királyi Mintarajztanoda És Rajztanár-képezde, nowadays The Hungarian University of Fine

Arts), directed by Gusztáv Frigyes Keleti,<sup>104</sup> and structured along the lines of the Vienna School of Applied Arts.<sup>105</sup> The main aim of this school was to train drawing teachers and, as throughout the crownlands, the course of study in Hungary lasted three years.<sup>106</sup> Similarly, the content was based on the Viennese model,<sup>107</sup> and in Budapest, too, Herbartian theories were fundamental. They were represented by Mór Kármán who taught pedagogy at the newly established teacher training college,<sup>108</sup> having had the opportunity to study with the Herbartian Tuiskon Ziller in Leipzig.<sup>109</sup> Through his writings on education in Hungarian and as lecturer and director of the training college for secondary school teachers, Kármán emerged as the pioneer of Herbartianism in Hungary, ensuring that his theories held equal significance here as in the other crownlands.<sup>110</sup>

Starting in 1872, Kármán spent twenty-five years training teachers and educators, but was only appointed to the chair for pedagogy at the University of Pest in 1900, after the death of his rival Ágost Lubrich.<sup>111</sup> In the meantime, his teaching had produced a generation of academics who, after 1900, promoted Herbartianism as a university discipline and "spread [his theories] beyond the training of secondary school teachers to that of elementary school teachers and to teaching practice in elementary schools."<sup>112</sup> Thus, there were similar foundations in Hungary as in the other crownlands, albeit introduced with some delay.

Direct international comparison of the teaching of drawing, however, can only really be made based on the previously mentioned discussion at the World's Fair in 1873. The special significance of the teaching of drawing in the Habsburg Empire emerges in the generally negative assessment of the other countries.<sup>113</sup> "The cultivation of the arts and sciences has always been a criterion in education and, although we are inferior in productivity and energy to our northern cousins in the latter (scientific) respect, it will truly take very little exertion on our part to assume a dominant position within the concert of peoples in the former."<sup>114</sup>

The legitimacy of this statement is reinforced by contrasts between Prussian and Viennese schools as well as the demands made by German drawing teachers, who in 1877 called for training standards to match those within the Habsburg Empire. Their petition cites the exemplary organization in Austria-Hungary.<sup>115</sup> The high quality of schools in the Habsburg Empire is also apparent in the complaints by Wilhelm Bonitz<sup>116</sup> and Wilhelm Rein,<sup>117</sup> who both reported low standards at

Prussian schools. The countries of the Habsburg Empire had their own tradition in education, and hence also in art, and, despite national fragmentation, this impact was felt well into the twentieth century.

In comparison with *Realschulen* in Germany, schools in the Habsburg Empire offered more than double the weekly lessons in freehand drawing. Whereas in Hanover and Cologne there were twelve lessons in freehand drawing and eight in Elberfeld, Austrian *Realschulen* offered twenty-nine lessons. In the case of linear drawing, the ratio is six lessons in Hannover, four in Cologne, eleven in Elberfeld, and twenty-three in Austria.<sup>118</sup> Across the board, in the nineteenth century and beyond, the artistic understanding of form continued to have an impact, despite changes in social and political conditions resulting in Herbart's philosophy in its cosmopolitan interpretation becoming largely marginalized.

This shows that through the provision of consistent training grounded in Herbartianism, the Habsburg Empire formed a cultural region in which the teaching of drawing played a major role. The artistic creativity, its orientation and intensity, developed within this intellectual framework differed significantly from other European countries and the USA. It was not until around the 1910s that the *Kunsterziehungsbewegung* (art education movement) increasingly came to the fore in the crownlands,<sup>119</sup> although this met with considerable resistance from teachers.<sup>120</sup> In Hungary, the Herbartian influence, having emerged later, continued to hold sway until well into the 1930s.<sup>121</sup>

These reflections on the artists of the Habsburg Empire, seen from the perspective of their philosophical and educational background, explains their commonalities and differences in approach vis-à-vis their international colleagues, who can be associated with one of the "isms" of art. In view of the wide variety of artistic expressions and their impact on art in the twentieth century, the frequent verdict of a purely decorative slant, a charmless formalism, or even epigonic work, does not stand up to scrutiny. Instead, form art can be defined as a characteristic underpinning the art of this cultural region, making up a significant proportion, both in quantity and quality, of international non-representational art. As a result, form art deserves to be given special consideration as a development in its own right, alongside art history's preferred model for the genesis of abstraction.

- 1 Robert Zimmermann, *Allgemeine Aesthetik als Formwissenschaft*, vol. 2 (Vienna, 1865), p. 33, § 79.
- 2 Zimmermann 1865 (see note 1), 2 vols.
- 3 Eduard Hanslick, *Vom Musikalisch-Schönen: Ein Beitrag zur Revision der Ästhetik der Tonkunst*, 21st edn. (Wiesbaden, 1981), p. 59. Translation from Mark Evan Bonds, *Absolute Music: The History of an Idea* (Oxford, 2014), p. 147.
- 4 Roger Bauer, "Der Idealismus und seine Gegner in Österreich," in: *Euphorion: Zeitschrift für Literaturgeschichte*, supplement 3, ed. by Rainer Gruenter and Arthur Henkel (Heidelberg, 1966), pp. 1–127.
- 5 Peter Stachel, "Das österreichische Bildungssystem zwischen 1749 und 1918," in: Karl Acham (ed.), *Geschichte der österreichischen Humanwissenschaften*, vol. 1, *Historischer Kontext, wissenschaftssoziologische Befunde und methodologische Voraussetzungen* (Vienna, 1999), p. 141.
- 6 Peter Stachel, "Leibniz, Bolzano und die Folgen: Zum Denkstil der österreichischen Philosophie, Geistes- und Sozialwissenschaften," in: Acham 1999 (see note 5), pp. 253–96.
- 7 Stachel 1999 (see note 6), p. 289.
- 8 Martin Seiler, "Kurt Blaukopf und Robert Zimmermann: Spuren alt-österreichischer Philosophie im Werk eines Musiksoziologen der Gegenwart," in: Gertraud Diem-Wille/Ludwig Nagl/Friedrich Stadler, *Weltanschauungen des Wiener Fin de Siècle 1900/2000: Festgabe für Rudolf Fischer zum achtzigsten Geburtstag* (Frankfurt a. M./Berlin/Bern/Brussels/New York/Oxford/Vienna, 2002), p. 188.
- 9 Stachel 1999 (see note 6), pp. 274–75.
- 10 Stachel 1999 (see note 6), pp. 283–88.
- 11 Stachel 1999 (see note 6), pp. 258–61.
- 12 Eduard Winter (ed.), *Robert Zimmermanns philosophische Propädeutik und die Vorlagen aus der Wissenschaftslehre Bernard Bolzanos: Eine Dokumentation zur Geschichte des Denkens und der Erziehung in der Donaumonarchie* (= Österreichische Akademie der Wissenschaften, Philosophisch Historische Klasse, Sitzungsberichte, vol. 299) (Vienna, 1975), p. 12; Georg Jäger, "Die Herbartianische Ästhetik – ein österreichischer Weg in die Moderne," in: Herbert Zeman (ed.), *Die österreichische Literatur: Ihr Profil im 19. Jahrhundert (1830–1880)* (Graz, 1982), p. 198.
- 13 Karl Clausberg, "Wiener Schule–Russischer Formalismus–Prager Strukturalismus: Ein komparatistisches Kapitel Kunsthistorik," in: Werner Hofmann/Martin Warnke (eds.), *Idea: Jahrbuch der Hamburger Kunsthalle*, no. 2, *Kunst um 1800* (1983), p. 159; Johannes Feichtinger, *Wissenschaft als reflexives Projekt: Von Bolzano über Freud zu Kelsen. Österreichische Wissenschaftsgeschichte 1848–1938* (Bielefeld, 2010), p. 151.
- 14 Werner Sauer, "Die verhinderte Kantradtion: Über eine Eigenheit der österreichischen Philosophie," in: Michael Benedikt/Reinhold Knoll/Josef Rupitz (eds.), *Verdrängter Humanismus–verzögerte Aufklärung*, vol. 3, *Bildung und Einbildung: Vom verfehlten Bürgerlichen zum Liberalismus. Philosophie in Österreich 1820–1880* (Vienna, 1995), p. 312; Wolfgang Cernoch, "Zimmermanns Grundlegung

der Herbartschen Ästhetik: Eine Brücke zwischen Bolzano und Brentano," in: *ibid.*, p. 683; Stachel 1999 (see note 5), p. 140.

15 Gerald Grimm, "Gustav Adolf Lindner als Wegbereiter der Pädagogik des Herbartianismus in der Habsburgermonarchie: Eine Studie zu Leben, Werk und Wirken Lindners mit spezieller Fokussierung auf sein 'Encyklopädisches Handbuch der Erziehungskunde,'" in: Gerald Grimm/Erik Adam (eds.), *Die Pädagogik des Herbartianismus in der Österreichisch-Ungarischen Monarchie* (Vienna/Berlin/Münster, 2009), pp. 21–36.

16 Lott's appointment to the University of Vienna was backed by Exner. His successor was Exner's student Zimmermann (Erik Adam, *Die Bedeutung des Herbartianismus für die Lehrer- und Lehrerinnenbildung in der österreichischen Reichshälfte der Habsburgermonarchie mit besonderer Berücksichtigung des Wirkens von Gustav Adolf Lindner* [Klagenfurt, 2002], p. 6). Lott was also the father-in-law of Rudolf von Eitelberger (*Österreichisches biographisches Lexikon und biographische Dokumentation 1815–1950*, vol. 1, pt. 3 [1956], p. 239).

17 Jäger 1982 (see note 12), p. 197.

18 Stachel 1999 (see note 5), p. 141.

19 Elmar-Bussen Wagemann, "Quadrat–Dreieck–Kugel: Die Elementarmathematik und ihre Bedeutung für die Pädagogik bei Pestalozzi, Herbart und Fröbel," in: Erich Weniger (ed.), *Göttinger Studien zur Pädagogik*, n.s., no. 4 (Weinheim, 1957), pp. 1–277; Stachel 1999 (see note 6), p. 274.

20 Wagemann 1957 (see note 19), p. 127; Helene Skladny, *Ästhetische Bildung und Erziehung in der Schule: Eine ideengeschichtliche Untersuchung von Pestalozzi bis zur Kunsterziehungsbewegung* (Munich, 2009), pp. 112–13.

21 Skladny 2009 (see note 20), p. 120.

22 Wagemann 1957 (see note 19), p. 125.

23 Skladny 2009 (see note 20), p. 120.

24 Wagemann 1957 (see note 19), p. 126; Skladny 2009 (see note 20), p. 124.

25 Gustav Adolf Lindner, "Das ABC der Anschauung' als Grundlage eines rationellen Elementarunterrichtes im Zeichnen," in: *Programm des k. k. Gymnasiums zu Cilli am Schluße des Schuljahres 1871* (Celje, 1871), pp. 1–16.

26 Lindner 1871 (see note 25), p. 15.

27 Zimmermann 1865 (see note 1), p. 192, § 384. Zimmermann was referring to research by Adolf Zeising here.

28 Lambert Wiesing, "Formale Ästhetik nach Herbart und Zimmermann," in: Andreas Hoeschen/Lothar Schneider (eds.), *Herbarts Kultussystem: Perspektiven der Transdisziplinarität im 19. Jahrhundert* (Würzburg, 2001), pp. 289, 292–93.

29 Camillo Sitte, "Über den praktischen Wert der Lehre vom Goldenen Schnitt," in *Gesamtausgabe: Schriften zu Kunsttheorie und Kunstgeschichte*, ed. by Robert Stalla, vol. 5 (Vienna/Cologne/Weimar, 2010), pp. 435–46.

30 Gustav Theodor Fechner, *Vorschule der Ästhetik*, 2 vols. (Leipzig, 1876).

31 Adolf Hözel wrote the foreword for the second edition of Albert Goeringer's treatise about the "golden compass" (Albert Goeringer, *Der goldene Schnitt* [Munich, 1911]).

32 Lindner 1871 (see note 25), p. 4.

33 For a critical response to an aesthetic of content see Robert Zimmermann, "Zur Reform der Ästhetik als exakter Wissenschaft," in *Studien und Kritiken zur Philosophie und Ästhetik*, vol. 1, *Zur Philosophie: Studien und Kritiken* (Vienna, 1870), pp. 250–53.

34 Clausberg 1983 (see note 13), pp. 165, 170.

35 Kurt Blaukopf, "Von der Ästhetik zur 'Zweigwissenschaft': Robert Zimmermann als Vorläufer des Wiener Kreises," in: Martin Seiler/Friedrich Stadler (eds.), *Kunst, Kunsttheorie und Kunstmuseum im wissenschaftlichen Diskurs: In memoriam Kurt Blaukopf (1914–1999)* (Vienna, 2000), p. 43; Robert Zimmermann, "Für die Instrumentalmusik," in *Studien und Kritiken zur Philosophie und Ästhetik*, vol. 2, *Zur Ästhetik: Studien und Kritiken* (Vienna, 1870), p. 265.

36 Robert Zimmermann, "Ein musikalischer Laokoon," in: *ibid.* 1870 (see note 35), p. 257.

37 Blaukopf 2000 (see note 35), p. 42.

38 Zimmermann 1865 (see note 1), pp. 238–39.

39 Zimmermann 1865 (see note 1), pp. 272–73.

40 Jäger 1982 (see note 12), p. 204.

41 Ernst Mach, *Die Analyse der Empfindungen* (Jena, 1922), p. 232. Translation from Ernst Mach, *Analysis of Sensations*, translated by C. M. Williams (Chicago/London, 1914), p. 285.

42 Christian von Ehrenfels, "Über 'Gestaltqualitäten,'" in *Philosophische Schriften in 4 Bänden*, ed. by Reinhard Fabian, vol. 3 (Munich/Vienna, 1988), p. 147. Translation from Christian von Ehrenfels, "On 'Gestaltqualities,'" in: B. Smith (ed.), *Foundations of Gestalt Theory* (Munich/Vienna, 1988), p. 106.

43 Werner Hofmann, "Riegl, der Emanzipator (Die Gärne und das Alpenpanorama)," in: Peter Noever/Arthur Rosenauer/Georg Vasold (eds.), *Alois Riegl Revisited: Beiträge zu Werk und Rezeption* (Vienna, 2010), pp. 13–20.

44 Norbert Schmitz, *Kunst und Wissenschaft im Zeichen der Moderne: Exemplarische Studien zum Verhältnis von klassischer Avantgarde und zeitgenössischer Kunstgeschichte in Deutschland*. Hözel, Wölflin, Kandinsky, Dvořák (Bonn, 1993).

45 See the essay by Vojtěch Lahoda in this catalogue on p. 35.

46 Adolf Hözel, "Über Formen und Massenvertheilung im Bilde," in: *Ver Sacrum*, 4th yr., no. 15 (1901), pp. 243–54; reprinted and annotated in: Agnes Husslein-Arco/Alexander Klee (eds.), *Formalisierung der Landschaft: Hözel, Mediz, Moll u. a.* (exh. cat., Belvedere, Vienna) (Vienna/Munich, 2013), pp. 24–37.

47 Hözel 1901 (see note 46), p. 253.

48 Zimmermann 1865 (see note 1), p. 30, § 73f.

49 Zimmermann 1865 (see note 1).

50 Anton (Antonín) Anděl (1844, Velké Meziříčí, Moravia – 1935, Graz), professor in Jihlava and Graz, schools inspector, lecturer in ornamental studies at Graz Technical University, reformed the teaching

of drawing, and worked as an Imperial-Royal Inspector of drawing tuition at secondary schools and colleges in Moravia and Austrian Silesia.

51 Anton Andél, *Das geometrische Ornament: Ein Lehrmittel für den elementaren Zeichenunterricht an Real- und Gewerbeschulen, entworfen und mit Unterstützung des k. k. Ministeriums für Cultus und Unterricht veröffentlicht* (Vienna, 1876). (Announcement in the advertisement section in the *Oesterreichische Buchhändler Correspondenz*, no. 53 [December 30, 1876], p. 515; "Vorlagenwerke für den Zeichenunterricht," in: *Mittheilungen des k. k. Oesterreichischen Museums für Kunst und Industrie: Monatsschrift für Kunstgewerbe*, 11th yr., no. 133 [December 1, 1876], p. 184). Anton Andél's portfolio *Das geometrische Ornament* was widely distributed and was published in four editions; 2nd edn. 1879, 3rd edn. 1885, 4th edn. 1893.

52 Elisabeth Kamenicek, *Emil Jakob Schindler (1842–1892): Sein schriftliches Werk im Kontext von Kunsthändel, Mäzenatentum und Kunstkritik seiner Zeit* (Salzburg, 2002), vol. 2, p. 278.

53 In his essay "Die Herbartianische Ästhetik – ein österreichischer Weg in die Moderne," (see note 12) Georg Jäger rightly asserts "that of the contemporary students of philosophical aesthetics, none are so well suited to present criteria for modern non-representational art as Zimmermann's aesthetics." Wolfgang Cernoch, "Der Auszug aus dem Akademismus," in: Benedikt/Knoll/Rupitz 1995 (see note 14), p. 91.

54 Marianne L. Teuber, "Formvorstellungen und Kubismus oder Pablo Picasso und William James," in: Siegfried Gohr (ed.), *Kubismus: Künstler–Themen–Werke* (exh. cat., Josef-Haubrich-Kunsthalle Cologne) (Cologne, 1982), p. 26. Marianne Teuber suggests in her essay that Picasso might have acquired key inspiration for Cubism through Gertrude Stein, as she was part of William James's close circle in the 1890s. Stein, Teuber argues, explained the principles of Gestalt psychology to Picasso, especially the visual "tilt effect," which James had absorbed from Ernst Mach's *Analysis of Sensations*. Mach and James knew each other and exchanged ideas. Mach often quotes James in his book, and James uses Mach's drawings for the chapter "The Perception of Space" in his *Principles of Psychology* (1890). They finally met on November 2, 1882, in Prague, having written letters since the mid-1870s, a correspondence they continued until 1909 (see Joachim Thiele, *Wissenschaftliche Kommunikation: Die Korrespondenz Ernst Machs* [Kastellaun, 1978], pp. 168–76). For a critical response to Teuber's essay see Carsten-Peter Warncke, in: Carsten-Peter Warncke/Ingo F. Walther (eds.), *Pablo Picasso 1881–1973* (Cologne, 1991), vol. 1, p. 176, note 185.

55 Mach 1922 (see note 41), p. 299.

56 The interest in stereometric figures was mainly for the purposes of education. See Lada Hubatová-Vacková, *Silent Revolutions in Ornament: Studies in Applied Arts and Crafts from 1880–1930* (Prague, 2011), pp. 18, 197–99.

57 Josef Šetlik, "Einiges über das freie Handzeichnen an den öffentlichen Schulen in Paris," in: *Die Realschule: Zeitschrift für die österreichischen Realschulen und verwandte Lehranstalten*, 3rd yr. (1859), pp. 72–76. For example, Alexandre Dupuis, *Exposé sommaire pour mettre en pratique la méthode de dessin de Alexandre Dupuis* (Paris, 1833).

58 Ignaz Smial, "Ueber die Bedeutung des Zeichenunterrichts für Gymnasien," in: *Die Realschule: Zeitschrift für die österreichischen Realschulen und verwandte Lehranstalten*, 7th yr. (1863), pp. 409–18, 457–64.

59 Friedrich Simony, "Das Freihandzeichnen an Mittelschulen," in: *Die Realschule: Zeitschrift für Realschulen, Bürgerschulen und verwandte Anstalten*, 1st yr. (1871), pp. 167–77.

60 Smial 1863 (see note 58), pp. 414–15.

61 Alois Pokorny, "Zur Didaktik und Paedagogik: Ueber die Stellung des Zeichnungsunterrichtes an Mittelschulen," in: *Zeitschrift für die österreichischen Gymnasien*, 18th yr. (1867), pp. 141–52. For a critical response to this see Joseph Schnell, "Zur Didaktik und Paedagogik: Ueber die Stellung des Zeichnungsunterrichtes an Mittelschulen," in: *Zeitschrift für die österreichischen Gymnasien*, 18th yr. (1867), pp. 293–300, and Pokorny's rejoinder: Alois Pokorny, "Entgegnung," in: *Zeitschrift für die österreichischen Gymnasien*, 18th yr. (1867), pp. 300–04.

62 See "Resumée zum Vortrag von Eduard Leisching zur 'Methode und Aufgabe der wissenschaftlichen Ästhetik' am k. k. Museum für Kunst und Industrie," in: *Mittheilungen des k. k. Oesterreichischen Museums für Kunst und Industrie: Monatsschrift für Kunstgewerbe*, n.s., 3rd yr., no. 28 (271) (April 1888), pp. 80–81.

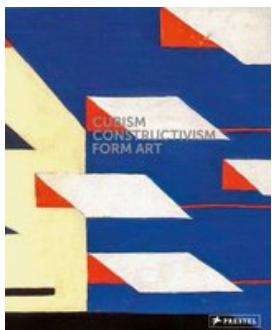
63 See "Resumée zum Vortrag von Eduard Leisching zum Thema 'Wie ein Kunstwerk entsteht' am k. k. Museum für Kunst und Industrie," in: *Mittheilungen des k. k. Oesterreichischen Museums für Kunst und Industrie: Monatsschrift für Kunstgewerbe*, n.s., 8th yr., no. 74 (317) (April 1892), pp. 336–37.

64 Joseph Schnell, *Das Zeichnen an Mittelschulen* (Korneuburg, 1866).

65 Schnell 1867 (see note 61), pp. 294–95. Josef Langl was similarly positive about the talent of girls and saw the wrong education as the reason for talent going to waste (Josef Langl, "Weltausstellungs-Zeitung: Der Zeichen- und Kunstuunterricht," in: *Die Realschule: Zeitschrift für Realschulen, Bürgerschulen und verwandte Anstalten*, 4th yr. [1874/75], pp. 44–45.); Rudolf von Eitelberger, "Die Aufgaben des heutigen Zeichenunterrichtes," in: *Mittheilungen des k. k. Oesterreichischen Museums für Kunst und Industrie: Monatsschrift für Kunstgewerbe*, 9th yr., no. 100 (January 1, 1874), p. 6. On the teachability of drawing see also Camillo Sitte, "Die Zeichenkunst vom Standpunkt der Descendenztheorie," in: *Zeitschrift für die österreichischen Gymnasien*, 25th yr. (1874), pp. 202–03.

66 Eitelberger 1874 (see note 65), p. 3. In 1863 drawing teaching had been made mandatory at elementary schools. In 1869 the elementary school law gave greater importance to the teaching of drawing. In 1870 a state-prescribed curriculum was introduced for drawing instruction at elementary and lower secondary schools (Volks- und Bürgerschulen). Aiming to achieve a standardized curriculum, cur-

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