

Franz Liszt and the golden section

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This text contains a summary of my article 'Was Liszt a precursor of the Section d'Or?'¹, including some fragments of this article that refer specifically to Zeising. To those who are interested in this matter I recommend consulting the original article, which also contains a photocopy of the letter in which Liszt makes mention of his wish to make use of the golden section in his compositions. He is the first artist in history to do so.

In 1854, German philosopher Adolf Zeising (1810-1876) brought the myth of the golden section to life in his *Neue Lehre von den Proportionen des menschlichen Körpers*². From Germany it gradually spread over Europe, and after being discussed first in academic circles it became an *idée reçue* in the xxth century, due to the publications of Romanian naval officer Matila Ghyka³. Most of these were written in France⁴, and Ghyka is the direct source of Le Corbusier's radical choice for the golden section as his guiding principle in architecture⁵.

It was also in France that the term *section d'or* was picked up by a group of artists around Apollinaire and the Duchamp brothers, to use it as a title for their first exhibition: *Le Salon de la Section d'Or* (1912). From later interviews with the members of

1 Albert VAN DER SCHOOT, 'Was Liszt a precursor of the Section d'Or?', in *Les grands topoï du XIX^e siècle et la musique de Franz Liszt*, ed. by Márta GRABÓCZ, Paris, Éditions Hermann, 2018, pp. 179-192.

2 Adolf ZEISING, *Neue Lehre von den Proportionen des menschlichen Körpers*, Leipzig, Weigel, 1854.

3 The two most influential of his books were *L'Esthétique des proportions dans la nature et dans les arts*, Paris, Gallimard, 1927, and *Le nombre d'or: rites et rythmes pythagoriciens dans le développement de la civilisation occidentale*, Paris, Gallimard, 1931.

4 For more insight into the role of the golden section in this period in France, see Marguerite NEVEUX, *Le nombre d'or, Radiographie d'un mythe*, Paris, Éditions du Seuil, 1995; and Roger HERZ-FISCHLER, 'Le Nombre d'or en France de 1896 à 1927', in *La Revue de l'art*, vol. 118, No. 4, 1997, pp. 9-16.

5 LE CORBUSIER, *Le Modulor*, Boulogne, Éditions de l'architecture d'aujourd'hui, 1950.

this group it became clear that they didn't have the slightest idea what the term *section d'or* could signify; they only had the intuitive idea that it was something impressive that would connect them to antiquity. One of these painters, Gino Severini, developed an interest in the meaning and the background of the golden section, 'pour pouvoir m'en servir dans mes compositions', as he testified after World War II⁶.

Surprisingly, we find almost the same phrase in a letter which Franz Liszt wrote on May 6, 1859 to his stepdaughter Marie zu Sayn-Wittgenstein. She must have been personally acquainted with Zeising, for Liszt writes:

Je suis charmé de ce qu'Abbé⁷ goûte les malices de Fallmerayer⁸ et que vous ayez revu Zeising. S'il y avait moyen de rattacher ce dernier par un bout quelconque à la 'teutsche Musik' ce serait une très bonne a[c]quisition. Il a connu autrefois Brendel⁹, et peut-être se déciderait-il occasionnellement à honorer de son beau style les colonnes de la 'Neue Zeitschrift' - Je compte beaucoup sur vous pour l'endoctriner, comme aussi pour expliquer à Fainéant¹⁰ les secrets du 'goldene Schnitt' que je voudrais bien savoir appliquer dans mes compositions¹¹.

In two further letters, written during the next week to Carolyne, Liszt again emphasizes his admiration for Zeising, but then focuses more on how useful it would be to include Zeising in his network; and he asks Carolyne to continue assisting him in that purpose. He does not return to the possible use of the golden section as a compositorial device.

6 'in order to be able to make use of it in my compositions'. Gino SEVERINI, *The life of a painter*, Princeton, Princeton UP, 1995, p. 213.

7 One of Liszt's nicknames for Princess Carolyne.

8 Jakob Philipp FALLMERAYER (1790-1861), an Austrian orientalist and politician.

9 Franz Brendel (1811-1868) had taken over the editorship of the *Neue Zeitschrift für Musik* from Robert Schumann. He turned this journal into a mouth piece for the Neudeutsche Schule.

10 One of Liszt's nicknames for himself.

11 *Lettres de Franz Liszt à la princesse Marie de Hohenlohe-Schillingsfürst née de Sayn-Wittgenstein*, ed. by Pauline POCKNELL, Malou HAINE and Nicolas DUFETEL, Paris, Vrin, 2011, p. 166.

Apparently Carolyne had been instrumental in connecting Zeising with the music critic Franz Grandauer, who was a supporter of Wagner, and Liszt hopes the authority of Zeising to be linked with the *Neudeutsche Schule* – in spite of what he mentions briefly in his letter of May 15: ‘Zeising s’est trompé sur Hanslick, mais il réparera cette erreur¹²’.

What mistake could Zeising have to correct, in Liszt’s eyes? Hanslick’s ground-breaking aesthetics of music, *Vom Musikalisch-Schönen*¹³ had appeared in the same year (and with the same publisher!) as the *Neue Lehre*¹⁴. Zeising does not mention Hanslick in the *Neue Lehre*, but there is one reference to him in the *Ästhetische Forschungen*¹⁵, in which Zeising seems to sympathize with Hanslick’s formalist opposition versus the *Zukunftsmusik*. Apart from that, Zeising writes rather positively about Wagner – not on the basis of his music, but on the basis of his writings. Hanslick, on the other hand, had become the headman of Liszt’s and Wagner’s opponents in the so-called *Musikstreit*, the confrontation between the *Neudeutsche Schule* and its opponents.

Apart from these few letters, we have nothing that links Zeising to Liszt. We may suppose that the meeting Liszt writes about in his letter to Marie took place in Munich, where Carolyne and Marie resided at the time¹⁶, and where Zeising had lived since 1855. But we find no further data about it. There may never have been a written reply to Liszt’s request (Liszt and Marie saw each other again in Leipzig, a few weeks later), and we don’t know if and how Zeising was ever confronted with it. Marie was soon to move to Vienna; Alan Walker’s biography of the Weimar years¹⁷ does not make mention of Zeising at all, and Roger Herz-Fischler’s biography of Zeising¹⁸, surprisingly, makes no

12 *Ibid.*, Letter No. 344, p. 483.

13 Eduard HANSLICK, *Vom Musikalisch-Schönen*, Leipzig, Weigel, 1854.

14 See note 2.

15 Adolf ZEISING, *Ästhetische Forschungen*, Frankfurt, Meidinger, 1855, p. 248.

16 In Munich, Marie had her portrait painted by Wilhelm von Kaulbach. Here, she had her first meeting with Konstantin von Hohenlohe, with whom she was to marry in October of that same year. Alan WALKER, *Franz Liszt – The Weimar Years*, London, Faber and Faber, 1989, p. 516.

17 See previous note.

18 Roger HERZ-FISCHLER, Adolph ZEISING (1810-1876) – *The Life and Work of a German Intellectual*, Ottawa, Mzinhigan, 2004.

mention of either Marie or Liszt, and of his apparent interest in Zeising's theories.

Liszt's idea of 'applying the golden section to my compositions', of including the golden section in the creative tool box of the composer, is completely original, in 1859. Zeising does not write from that point of view, nor does he present any composition as an illustration of his theory (as he does in the fields of architecture and visual art). In general, he does not betray more than a basic knowledge of music theory, and no intimacy with the world of musical creation and recreation – this in spite of the fact that his father was a professional violinist at the court of Anhalt-Bernburg.

Although the existence of this letter was known, it never became part of the golden section literature until Dénes Nagy referred to it in an article in 1997¹⁹. Liszt's reference to the golden section, and his explicitly expressed wish to make use of it in his compositions, leads to the question: did he really do it? Would it be worthwhile to scrutinize his compositions in order to find out? I present two arguments to provide this question with a negative answer. The first argument is based on the book by Zeising, the second on Liszt's music from that particular period. By the end of his *Neue Lehre...*, Zeising devotes a thirty-page section to the implications of his proportional law for the area of music. He reminds his readership that the formal beauty of music was understood in terms of number and proportion long before visual beauty was. Pythagoras, Aristoxenus, Kepler, Euler, Chladni and a host of others are called upon to illustrate the long history of numerical discoveries in acoustics, and of the propagation as well as the rejection of the idea that music had a rational basis, accessible to the intellect without the aid of sensorial perception. Zeising continues juggling around with the numbers belonging to the intervallic proportions, and embraces the major sixth (3 : 5) and the minor sixth (5 : 8) as the hidden foundation of his harmonic system, 'the only two absolutely satisfying intervals²⁰'. Of course these are only approximations of the 'real' golden section interval (the 'golden sext'), which forms no part of our tonal system, not even as a dissonant. The

19 Dénes NAGY, 'Golden Section(ism): From Mathematics to the Theory of Art and Musicology', Part 2, in *Symmetry: Culture and Science*, Vol. 8, No. 1, 1997, pp. 74-112. This article also refers to a number of relevant Russian studies on the golden section which are generally ignored in western publications.

20 *Neue Lehre*, *op. cit.*, p. 438.

idea that the golden section proportion might be employed in a *temporal* sense, as a way to create subdivisions in a piece's overall structure (an idea that was fruitfully adopted by a number of XXth-century composers), does not even occur to him. Notice that Zeising only makes an attempt to analyze the numerical properties of the harmonic system; at no point does he suggest that a composer could 'make use of' the golden section; the creative aspect of music is simply not his approach. He is craving for the discovery of a natural secret that is supposed to govern nature as well as art: 'the formative principle, working secretly within the creative force, according to which - unconscious to the artist as well as to nature - everything is ruled and ordained²¹'.

I believe that these thirty pages prove sufficiently that Liszt's acquaintance with the *Neue Lehre* was only from hearsay. How could he have expected to profit from Zeising's teachings, had he known what they contained! And his beloved stepdaughter Marie could not have helped him any further, supposing that she would have known more about the book. The fact that he asks for her explanation illustrates that he has no idea what the alleged 'secrets' should mean, and how they might be put into compositorial practice. The phrasing of his request shows both his ignorance of the contents of Zeising's book, as well as his lack of imagination as to their implementation.

The second argument that speaks against the influence of Zeising's ideas on Liszt's compositorial practice is to be found in his music from this period. It was a period marked by many changes in his personal life, some positive but most of them negative, and if there was ever a period in which Liszt was open to fundamental renovations in his compositorial idiom, then it would have been now. Had Zeising been able to suggest such renovations, he might well have embraced his ideas; instead, he developed his idiom in a direction which took the sting out of Zeising's harmonic analysis. Let me point out in particular one composition which he wrote during the year after his request to Marie. In 1860, Liszt put Nikolaus Lenau's *Der traurige Mönch* to music (S. 348), certainly in a revolutionary way: by setting it in a whole-tone scale. Debussy, who is often credited as the first

21 'das im Innern der schaffenden Kraft geheim fortwirkende Gestaltungsprinzip, nach welchem sich - dem Künstler oft eben so unbewusst wie der Natur - Alles regelt und ordnet'. *Neue Lehre, op. cit*, p. 444.

composer to conceive of the use of this scale in a composition, had himself not even been conceived yet! In the context of this work, Zeising's speculations on major and minor sixth as the hidden basis of natural harmony become completely pointless. Everything that Zeising had considered important about the interval proportions in relation to the golden section evaporates when we listen to the threatening sequences of the major seconds of this scale, reminiscent of the opening theme of the *Faust Symphony*. Major and minor sixths simply do not exist in this tonal idiom, nor do the triads on which Zeising based the confirmation of his aesthetic conception of 'unity in variety' (*Einheit in Verschiedenheit*).

So after all, Liszt was in the same position as the painters in the circle of the Duchamp brothers would be half a century later: he felt attracted to the term, he hoped that the golden section could have practical implications for his own creative work, but in the end, he had no idea how to put this desire into practice.