

# Linearity in Music

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## Abstract

The aim of this article is to discuss the relationship between polyphonic music and linearity. This will be regarded in the case of both harmonic and non-harmonic polyphony. To designate a melodic design, the notion of "line" was not used before the early 20th century, when it was introduced by the Austrian musicologist Ernst Kurth. Kurth's notion of linear counterpoint has been frequently interpreted as the opposite of harmonic counterpoint. Kurth's contemporary Austrian music theorist Heinrich Schenker, like Kurth himself, developed his theoretical system as a response to previous harmonically oriented interpretations of music. But whereas Kurth usually discusses linearity apart from harmony, Schenker regarded melodic motion as determined by harmony. During the 1920s and 1930s, linearity was one of the most fashionable terms in European, as well as Estonian, musical literature. This term was often used to designate non-harmonic polyphony. In Estonian music, it was used, first of all, to characterize the first two string quartets by Heino Eller (1887–1970). The problems arising from the analysis of such music will be illustrated by discussing Eller's piano prelude in G minor (1920), which can be regarded as a typical example of "linear counterpoint" or "linear harmony".

In section 1.2 ("What is Linear Music?") of Urve Lippus's dissertation *Linear Musical Thinking*, she wrote as follows:

It is difficult to find a good adjective to denote the principal difference between melodies with harmonic structure and earlier monophonic melodies. [...] It seems to me that the word "linear" is best used to characterize early European monophonic music, as well as other monophonic styles, in which implications of an underlying harmony are absent. In harmonic music all the notes of the melody also have some relations to underlying harmonies, whether or not those harmonies are actually sounded. (Lippus 1995: 10)

It is obvious that she meant by linear music, first of all, linear monophony which can be divided primarily into harmonic and non-harmonic monophony. Whereas the meaning of the latter is quite self-evident, that of the term "linear monophony" is more contextual. In this connection, a question suggests itself: what is the relationship between *polyphonic* music and linearity? The aim of this study is to discuss this question.

## 1. Harmonic Polyphony

In the *New Grove Dictionary*, the word "linear" is explained as follows:

**Linear.** Characterized by conjunct motion in a given part; thus one of the chief characteristics of the musical texture commonly called "counterpoint". The expression "linear counterpoint", a literal translation of a term introduced by Ernst Kurth in his *Grundlagen des linearen Kontrapunkts* [...], is strictly speaking a tautology; however, it remains useful as a means of emphasizing the melodic or "horizontal" aspect of counterpoint as opposed to the harmonic or "vertical." (Rushton 2001: 721)

The monograph *Grundlagen des linearen Kontrapunkts* by the Austrian musicologist Ernst Kurth (1886–1946) is a deep and original study of Johann Sebastian Bach's counterpoint, as well as that of the "free style" in general. To designate a melodic design, the notion of "line" was not used before the early 20th century. According to Lee A. Rothfarb, the psychologist-aesthetician Theodor Lipps (*Ästhetik*, 1903) "called on melody to exemplify continuity in his idea of 'line'" (Rothfarb 1988:

13). Moreover, Kurth's "idealization of melody is a reaction to previous harmonic oversimplification of music. The very title of his counterpoint book [...] is clearly a polemical response to theories of his predecessors" (*Ibid.*, 31).

According to Rothfarb, Kurth

does not mean melody in the ordinary sense of *tune*, but rather in the primal sense of *tonal stream*. [...] Melodic "line", "linear motion", and above all, "linear counterpoint" are all concepts that would have been better understood and less often misrepresented had they been taken in the sense of primitive tonal stream (*Ibid.*, 13–14).

In his subsequent study *Romantische Harmonik und ihre Krise in Wagners "Tristan"*, Kurth described the melodic line as "the first projection of the will onto 'matter'", as "the boundary where the creative will and its reflection in sonorous expression make contact and conjoin", and where "the mysterious transition of tension into sounds, outwards from within, occurs" (Kurth 1920: 5, partially translated in Rothfarb 1988: 15).

The main principles of Kurth's musical philosophy have been outlined in the essay "On the essence of music as an art" by the Estonian musicologist Karl Leichter. He wrote, in particular:

The main characteristic of rhythm as the most primitive expression of the psychic tension is *motion*. [...] The primary process bearing a sonorous tension finds its indigenous form in the phenomenon of the *melodic line*. The content, as if emanating through each melody and through each of its tones, is thus a certain force of psychic tension, a certain *energy*. This energy consists in the *kinetic impulse* which is the bearer of the most diverse effects of melody. This driving force is the subconscious primary cause of all melodic phenomena. (Leichter 1935: 7)

Kurth's notion of linear counterpoint has been frequently interpreted as the opposite of *harmonic counterpoint*. This notion was used, for instance, when speaking about contrapuntal theory of the Baroque era. In the context of 17th-century French music theory, it is described by Wilhelm Seidel as follows:

The goal of the contrapuntal structure is [...] harmony. [...] As before, two-part structure

plays an important role in the theory of counterpoint. But, rather than being the embodiment (*Inbegriff*) of the art of composition, it is only a framework, in which the harmonic structure will be adjusted. This harmonic structure [...] has at least three voices. (Seidel 1986: 95)

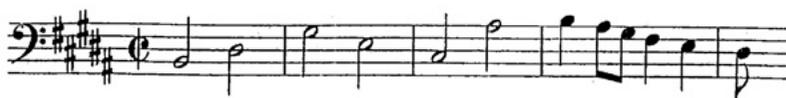
According to Carl Dahlhaus, there is no ground to regard linear and harmonic counterpoint as opposites:

Ernst Kurth's thesis that "chord" in Bach's "linear counterpoint" is a result of voice leading, not a prerequisite to it, still does not exclude the possibility that the degree or function a chord represents is predetermined by a harmonic plan. The individual chord may appear as the pure result of voice leading precisely because the general schema of a degree of functional progression can leave the particular form of a chord undecided [...]. Thus, instead of being mutually exclusive opposites, the concepts of linear and harmonic counterpoint complement each other. (Dahlhaus 1990: 69)

The same idea was expressed by Kurth himself in the preface to the third edition of *Grundlagen*: "[N]ot a weakening of harmonic effects is intended but rather a supplementary infiltration of them with the polyphonic-melodic element." As a result, the linear counterpoint itself becomes harmonic. "They by no means contradict, but rather mutually complement each other" (Kurth 1996: XIV, partially translated in Rothfarb 1988: 32).

Harmonic and linear counterpoint are thus two different aspects of one and the same phenomenon. This phenomenon itself – harmonic polyphony – underlies all classical music in the broadest sense of the word (including also that of the Baroque and Romantic eras). Imagining the structure of classical music in the form of a pyramid, with counterpoint as its foundation, harmony as its middle and form as its top (in which the lower stages are directed by the higher ones and are functionally subordinate to them; see Humal 2008: 93), it becomes clear that counterpoint in the era of functional harmony (including that of Bach) cannot be anything else than harmonic counterpoint.

Kurth's contemporary Austrian music theorist Heinrich Schenker (1868–1935), like Kurth himself, developed his theoretical system as a response to

**Example 1.** Bach, Fugue in B major (WTK II), bars 1–5.**Example 2.** Schenker's analysis of Example 1.**Example 3.** An alternative contrapuntal analysis of Example 1.

previous harmonically oriented interpretations of music. But whereas Kurth “generally concentrates on linear details apart from harmony” (Rothfarb 1988: 78), Schenker regarded melodic motion as “more than motion pure and simple” – as “motion from somewhere to somewhere else, and these places are defined by the structural harmonies” (Cook 2007: 263).

The difference between Kurth’s and Schenker’s analytical methods can be illustrated by the analysis of the theme of Bach’s Fugue in B major (WTK II; Example 1) by the two theorists. Kurth characterised this theme as follows:

The formal sense of this theme lies in its steep and precipitous, upwardly directed energy of motion, [...] driving upward to the octave above the starting tone, B. The energy [...] which presses forward to this apex note in a twice-enacted impulse, thus acquires [...] such a concentration of melodic intensity [...] that the abrupt discharge into the apex of the theme seems to radiate like a gleaming summit. (Kurth 1996: 45, translated in Snarrenberg 1997: 136)

Example 2 presents Schenker’s three-level graphic analysis of the same theme (Schenker

1925: 97). Whereas Kurth’s analysis is restricted to a description of its melodic design (ascending in the form of two waves), Schenker interprets it as an *Auskomponierung*, in the form of three ascending parallel sixth chords, of the B-major triad making up its background (Example 2a), thus revealing its polyphonic structure (Example 2b, middleground). In the foreground (Example 2c), the slurs connecting three or two notes (B–D sharp–G sharp, G sharp–E–C sharp, and C sharp–A sharp) show the melodic motion. The middleground graph (Example 2b) shows two ascending progressions: the third–progression B–C sharp–D sharp in the lower voice and the fourth–progression F sharp–G sharp–A sharp–B in the upper voice.

Example 3 presents an alternative contrapuntal analysis of this theme, based on the analytic theory of harmonic counterpoint, outlined in Humal 2011 (the harmonic counterpoint being understood as the counterpoint made up by the melodic patterns of individual voices within chord progressions). Whereas neighbour-note figures and third-progressions constitute the lowest, elementary level of harmonic counterpoint, the fourth-progressions (such as that which occurs in the upper voice during the first four bars

of this theme) are not elementary events, but rather melodic lines consisting of two elementary events (here – of the upper-neighbour figure F sharp–G sharp–F sharp and the lower-level third-progression G sharp–A sharp–B, ascending from its second tone).

Although Schenkerian analysis is frequently defined as *Schichtenlehre* (hierarchical, multi-level analysis) or *Stimmführungsanalyse* (voice-leading analysis), the combination of third- and fourth-progressions in Example 2 (similar to that of the three-tone *Baßbrechung* and the five-tone *Urlinie* in the *Ursatz* with a five-line), as a high-level structure, excludes a strict hierarchy of levels. As I noted in Humal 2011, the matter of traditional Schenkerian analysis is the counterpoint of lines, rather than that of voices. Elsewhere, I have defined it as *pan-contrapunctistic analysis* (Humal 2016: 120), because in it non-contrapuntal parameters are absorbed by counterpoint (see, for examples, the aforementioned three slurs in Example 2c).

Despite the profound differences between Kurth and Schenker, in analysing the music of the era of harmonic counterpoint both theorists one-sidedly emphasise its horizontal dimension. Whereas Kurth himself defines the object of his analysis as the linear counterpoint, the counterpoint of lines analysed by Schenker can be labelled as such to a still higher degree. In both cases this results from the analyst's interpretation, rather than from the music itself.

## 2. Non-Harmonic Polyphony

In the preface to the third edition of *Grundlagen*, Kurth complains: “[T]he expression ‘linear counterpoint’ was unscrupulously misused to cover a harmony-free, experimental patchwork of tone lines in new harmonic realms, and employed for all kinds of experiments in ‘absolute’ or ruthless counterpoint, unconcerned with any harmony” (Kurth 1996: XIII, partially translated in Rothfarb 1988: 233, Note 32).

Another of Kurth's famous contemporaries, Arnold Schoenberg (1874–1951), although admitting that he had not read Kurth, twice recorded his opinion about linear counterpoint and linear polyphony. For example, in 1931 he wrote that to be linear, “parts ought to be independent of each other even in their harmonic relationship. [...] So by ‘linear’ one can imagine a number of parts, each of which has its own development, and none

of which worries in any way about the others” (Arnold Schoenberg, “Linear Counterpoint”, 1931, in Schoenberg 1975: 291–292). In the same context, Schoenberg noted that Paul Hindemith's and Ernst Křenek's “unconcern [of harmony] bears witness to a disturbing lack of responsibility” (*Ibid.*, 294). Much more hostile towards linearity were the Soviet critics of “formalism”:

“Linearity” in music is an apology for an abstract geometrical motion of tones, this motion being turned into an end in itself. [...] In these two works [Eller's first two string quartets] which have no principles or ideas, each musician, in the proper sense of the word, is playing without any attention paid to others (Milovski 1950).

During the 1920s and 1930s, linearity was indeed one of the fashionable terms in European (as well as Estonian) musical literature. This term was used in very different senses. Whereas Kurth understood it as the dynamic of melodic lines, and Schoenberg as the harmonic independence of parts, this word was also frequently used simply to designate the thematic equivalence and independent development of different instrumental parts, as, for example, by the Estonian composer Heino Eller (1887–1970), in the following statement: “In the chamber music, it is an idea (theme), the ways of its development, various nuances and modifications that I am interested in above all. [...] Besides that, of course, form as such and an absolute independence of parts (linearity [...])” (Heino Eller to Adolf Vedro, Febr. 11, 1933, published in Humal 1987: 107).

On the other hand, this term was very often used to designate *non-harmonic polyphony*. In Estonian music of the 1920s and 1930s, it was used, first of all, to characterise Eller's first two string quartets. His First Quartet (1925) is described by the critic and composer Riho Päts as follows:

Here Heino Eller demonstrates one of the highest degrees of his mastery, probably using, for the first time in Estonian music, an independently linear manner of composition in such a pure form. Eller's contrapuntal lines, in which ingenious ideas are developed, in spite of being very independent, are nevertheless integrated into an organic whole, making this quartet a surprisingly monolithic work (Päts 1932: 145).

**Example 4.** Eller, Piano prelude in G minor, bars 1–4.

**Grave (♩ = 42)**

1 *pp* *tetro*

3 *cresc.* *mp*

**Example 5.**

- a) A hypothetical version of Example 4, bar 1.
- b) Another hypothetical version of Example 4, bar 1.
- c) Example 4, interpreted as a three-part canon.

a)

b)

c)

Other authors used in this connection such expressions as “linearity” (Eduard Oja on Eller’s Second Quartet; Oja 1937), “linearly developed counterpoint” (Olav Roots on Eller’s First Quartet; Roots 1938: 59) or “a striving for a linear polyphony” (Leo Normet on Eller’s First Quartet; Normet 1967).

Example 4 – the first four bars of Eller’s piano prelude in G minor (Book II, 1920, No. 7) – illustrates the problems arising from the analysis of such music. In the first three bars, a varied chord progression is stated three times. In terms of traditional theory, it consists of four seventh chords of different structure in different inversions, each having four tones without doublings. The outer voices, taken separately, seem to belong to different keys. The bass figure can support a Phrygian tetrachord in G minor (Example 5a), and the upper voice is identical to the beginning of the main theme of the finale of Mozart’s “Jupiter” Symphony, transposed down a twelfth (Example 5b). The middle voices are obviously based on an ascending chromatic scale (to avoid doublings, the second tone of the second voice, which ought to be D, is replaced by E). The structure as a whole can be interpreted as a three-part canon in unison, two of its three voices passing through an entire ascending octave during the four bars (Example 5c).

Due to the dissonant verticals and tonal ambiguity of outer voices, the harmony seems to be based on this consistent chromatically ascending motion in the middle voices, which can be labelled as chromatic linearity. In addition, present here are all the characteristics enumerated

by Schoenberg in the last chapter (“Aesthetic Evaluation of Chords with Six or More Tones”) of his *Theory of Harmony* when speaking about dissonant chords:

It seems that the progression of such chords can be justified by the chromatic scale. The chord progression seems to be regulated by the tendency to include in the second chord tones that were missing in the first, generally those a half step higher or lower. [...] Then, I have noticed that tone doublings, octaves, seldom appear. The explanation for that is, perhaps, that the tone doubled would acquire a predominance over the others and would thereby turn into a kind of root, which it should scarcely be. [...] For the same reason, apparently, the simple chords of the earlier harmony do not appear successfully in this environment. (Schoenberg 1978: 420)

Although Kurth claimed that “linearity has nothing to do with atonality” (Kurth 1996: XIII), and Schoenberg characterised the notion of linear counterpoint as “a contradiction in terms” (Schoenberg 1975: 296), it seems nevertheless that it is for the characterisation of music such as this prelude by Heino Eller where the notions “linear counterpoint” or “linear polyphony” can be used most convincingly.

In conclusion, we can say that, on the whole, polyphonic music, similarly to monophonic music, may indeed be divided into harmonic and non-harmonic polyphony, the latter having, at least in certain cases, a character that can be qualified as linear.

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## Lineaarsusest muusikas

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Väitekirja „Lineaarne muusikaline mõtlemine“ („Linear Musical Thinking“) alapeatükis 1.2 „Mis on lineaarne muusika“ kirjutab Urve Lippus: „Mulle näib, et euroopa varast ühehäälsset muusikat, nagu ka teisi ühehäälsed stiile, kus ei teki harmoonilisi assotsiatsioone, on kõige parem iseloomustada sõnaga „lineaarne““ (Lippus 1995: 10). Sellest tsitaadist ilmneb, et lineaarse muusika all mõtles autor eelkõige lineaarset ühehäälsust. Käesoleva artikli eesmärgiks on uurida, milline võiks olla mitmehäälsse muusika suhe lineaarsusega, kusjuures vaatluse all on nii harmooniline kui ka mitteharmooniline mitmehäälsus.

1. Harmooniline mitmehäälsus. Mõiste „liin“ meloodiajoonise tähenduses tuli kasutusse alles 20. sajandi algul, eelkõige tänu Austria muusikateadlase Ernst Kurthi (1886–1946) monograafiale „Lineaarse kontrapunkti alused“ („Grundlagen des linearen Kontrapunkts“, 1917; vt. Kurth 1996), mis on sügav ja uudne käsitlus Johann Sebastian Bachi kontrapunktist ja üldse vaba stiili polüfooniast. Ernst Kurthi uurija Lee A. Rothfarbi sõnul ei käsitlenud Kurth meloodiat „mitte tavalises tähenduses kui „viisi“, vaid kui „heli-voolu“ selle algses tähenduses“ (Rothfarb 1988: 13).

Kurthi käsitlust lineaarsest kontrapunktist on sageli vastandatud varasemas muusikateoorias levinud harmoonilise kontrapunkti mõistele. Carl Dahlhausi arvates ei ole lineaarse ja harmoonilise kontrapunkti vastandamine põhjendatud.

Tegelikult tähendavad harmooniline ja lineaarne kontrapunkt ühe ja sama nähtuse kaht eri aspekti. Nähtus ise – harmooniline mitmehäälsus – on aga aluseks kogu klassikalisele muusikale selle sõna laiemas tähenduses (mis hõlmab ka barokk- ja romantilist muusikat).

Nagu Kurth arendas ka tema kaasaegne Austria muusikateoreetik Heinrich Schenker (1868–1935) oma teoreetilise süsteemi välja vastukaaluks varasemale harmooniakesksele muusikakäsitlusele. Ent kui Kurth vaatles lineaarsust harmooniast eraldi, siis Schenkeri arvates on meloodiline liikumine määratud harmoonia poolt.

2. Mitteharmooniline mitmehäälsus. „Lineaarse kontrapunkti aluste“ kolmanda trüki eessõnas kurdab Kurth, et nimetust „lineaarne kontrapunkt“ on „jõhkvalt kuritarvitatud, tähistamaks eksperimente heliliinide harmooniavaba kokkulappimisega uutes kõlasfäärides“ (Kurth 1996: XIII).

20. sajandi 20. ja 30. aastail oli lineaarsus tõepoolest üks Euroopa, sealhulgas ka Eesti muusikakirjanduse moesõna. Seejuures tarvitati seda sõna väga erinevas tähenduses. Väga sageli tähistas see sõna just mitteharmoonilist mitmehäälsust. 20. ja 30. aastate eesti muusikas kasutati seda eelkõige Elleri kahe esimese kvarteti iseloomustamiseks.

Sellise muusika analüüsil tekkivaid probleeme illustreerib näide 4 – esimesed neli takti Elleri klaveriprelüüdist *g*-moll (II vihik, nr. 7, 1920). Arvestades dissoneerivat akordikat ja äärmiste häälte tonaalset ambivalentisust, näib siin struktuuri ühtsus tuginevat just keskmiste häälte sihikindlale ühesuunalisele kromaatilisele liikumisele, mida võib põhjendatult nimetada kromaatiliseks lineaarsuseks. Tundub, et kui üldse kasutada mõistet „lineaarne kontrapunkt“ või „lineaarne harmoonia“, siis eelkõige just seda laadi muusika iseloomustamiseks, nagu on kõnealune Elleri prelüüd.