

Functional Analysis: Music via Music to Music

by

ANDREW WILDER

B.M., Columbus State University, 2016

M.M., University of Kentucky, 2019

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Committee Members:

Dr. Nicolò Spera

Dr. Yonatan Malin

Erika Eckert

Christina Jennings

Dr. Jeffrey Nytech

Abstract

Wilder, Andrew (D.M.A., Classical Guitar, College of Music)

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Research lecture directed by Dr. Nicolò Spera

This paper provides an overview of Functional Analysis, a musical analysis technique developed by the Austrian-born musician, broadcaster, and critic Hans Keller. The underlying philosophy, public and critical reception, as well as potential pedagogical applications are also surveyed. In order to explore the method further, and to provide a demonstration, a new functional analysis was composed based on Haydn's Piano Sonata No. 12 in A Major, and is included in the appendix. The new functional analysis was composed in accordance with Keller's writings on the topic, and was modeled after the available examples he composed himself. This research was motivated in part by what I believe are important pedagogical applications of the method, which were not explored by Keller, as Functional Analysis has the potential to offer students a subtle, integrated, and unique perspective on a composition.

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Introduction

I feel that functional analysis, developed by the Austrian theorist Hans Keller, is a technique that has not received adequate attention in recent decades. This may be partly due to the fact that there are no complete recordings of any functional analyses, and only a handful of easily accessible scores; however, Hans Keller did write on the topic in books, articles, and letters, providing insight into the philosophy and intended use of the method. In order to explore the topic further, I decided to compose one myself based on Haydn's twelfth piano sonata; the analysis is included in the appendix of this paper. The method is meant to provide a temporal and auditory experience of music analysis, so the included score is most useful when played. The functional analysis includes an analytical introduction, as well as analytical interludes in between each movement. Between the analytical interludes, however, the movements of the sonata should be performed without alteration as Haydn composed them. This paper will serve as an overview of Hans Keller's functional analysis method, its public and critical reception, and its application.

Overview of Functional Analysis

Hans Keller was born into a Jewish family in Austria in 1919 before being forced by the Nazis to migrate to Britain in 1938. His musical life began with playing the violin, studying with the Austrian violinist Max Rostal. For the majority of Keller's career, however, he was an active music critic, musicologist, and broadcaster, most known for his work at the BBC between 1956 and 1979. Of his extensive creative output on a variety of topics, Keller is particularly known for his 'Functional analysis' method (also referred to as 'Wordless Functional Analysis'). The technique uses exclusively musical material composed on the score without any verbal descriptions, visual aids, or analytical symbols. Each functional analysis is constructed out of

musical material from a given work including motives, themes, formal structures, and harmonic progressions. These analytical pieces are then assimilated into standalone compositions that also incorporate the analyzed work in its entirety. As an exclusively musical form of analysis, the functional analyses were intended to be performed. Keller described the technique as being focused on discovering “the unity of contrasts” in musical works by demonstrating the interconnectedness of seemingly disparate musical ideas.¹

Keller believed that verbal logic and musical logic were incompatible, and using one to analyze the other was ineffective. He wrote about this in the introduction of his functional analysis of Mozart’s G Minor Quintet: “Without the interference of conceptual thought, the laws of whose logic are far removed from the laws of musical logic, FA demonstrates, by way of purely musical experience, how contrasts - contrasting motifs, phrases, themes, sections, movements - hang together. It thus provides the listener with an intellectual explanation of his or her own instinctive understanding.”² He reiterated this point in an essay several years later, writing: “All conceptual thought about music is a detour, from music via terms to music, whereas functional analysis proceeds direct [sic] from music via music to music.”³

Functional analysis, which from this point will be referred to as FA, also allows the examination of musical material at many compositional levels simultaneously. The emphasis of a short two or three note melodic motive, for example, can be revealed in, and effectively unify, not only an individual phrase but also the movements in a large-scale work. These connections, when revealed through FA, point to a subconscious musical cohesion that the listener likely

¹ Abaigh McKee, “Hans Keller (1919-1985),” *Music and the Holocaust*, n.d., <https://holocaustmusic.ort.org/politics-and-propaganda/hans-keller/>.

² Hans Keller, “Functional Analysis of Mozart’s G Minor Quintet,” *Wiley* 4, no. No. 1/2 (1985), <https://www.jstor.org/stable/854236>.

³ Hans Keller, *Essays on Music* (Cambridge University Press, 1994).

senses, but senses without conscious awareness. According to Keller, these unifying elements might not have been known consciously to the composer themselves, but originate from subconscious compositional instinct, and play an essential role in the manner in which a piece “hangs together.” Keller composed a total of fifteen functional analyses. These consist of FAs on one work of Bach, four works of Haydn, seven works of Mozart, two works of Beethoven, and one of Britten. These FAs were primarily written to be aired on the radio, but in several cases were also premiered and performed at music festivals. Despite the fact that the majority of these analyses were written on works by composers from the First Viennese School, the method has adequate flexibility and versatility to be applied not only to any composer, but to any genre of music as well.⁴

Beyond extensive writing and analysis on the First Viennese school composers, Keller’s work also focuses on new music, film music, music theory, and Freudian psychoanalysis. More specifically, the essential idea of FA itself seems to have been at least partially inspired by Freud’s concept of manifest and latent dream content. Manifest content consists of conscious aspects and details in a dream that an individual might remember, while the latent dream content is comprised of unconscious thoughts and desires. Manifest content, then, is a result of the latent content that functions as its root source. With regards to its influence on musical analysis, Keller himself wrote: “It is psychoanalysis in particular that is destined, in my considered conviction, to get the psychology of music out of its present embryonic state by shedding light on the psychology, not only of the composing process, but of the actual elements of musical structure and texture.”⁵ The relationship between manifest and latent content in psychoanalysis

⁴ William O’Hara, “Music Theory on the Radio: Theme and Temporality in Hans Keller’s First Functional Analysis,” *Music Analysis* 39 (2020), <https://doi.org/10.1111/musa.12129>.

⁵ Christopher Wintle, “From Psychology to Music: Keller via Freud,” *The Musical Times* 144, no. 1884 (2003): 7–13.

corresponds to what Keller refers to as the foreground and background in a composition. The background, as Keller described it, functions as the latent subconscious (or preconscious) expectations that are fulfilled, suppressed, defined, or implied in a work. The foreground aligns with the concept of manifest content in that the foreground consists of pitches, motives, themes, harmonies and any other literal, explicated musical material. FA can be considered a form of musical psychoanalysis with the aim of using manifest musical content to gain insights into the latent background, unifying content that is not self-evident to the conscious mind. As the British musician, musicologist, and broadcaster Deryck Cooke pointed out: “What FA does is to lay bare the hidden unity of a work which makes the listener apprehend it unconsciously as an integral and consistent whole, in which things must be as they are, and not otherwise.”⁶

Public and Critical Reception

Many of Keller’s early FAs were premiered as broadcasts on BBC radio’s *Third programme*. Despite reports that listeners admitted that they did not entirely understand the program, the broadcasts were in large part received positively by radio audiences. Their positive reception is also evidenced by the fact that following the first broadcast in 1957, the BBC premiered and aired five more of Keller’s FAs.

FA, as was mentioned earlier, was also enthusiastically supported by Deryck Cooke. He publicly voiced his support in a letter to the editor of *The Musical Times*, pointing out the unique capabilities of the method, writing: “FA is the demonstration of true, functional relationships which are not apparent on the surface, but are *felt intuitively* by the musical listener[...] we have both emotional contrast (change of mood) and musical unity (development of the same material).

⁶ Deryck Cooke, “In Defence of Functional Analysis,” *The Musical Times* 100, no. 1399 (September 1959): 456–60.

The contrast of mood is felt intuitively as emotional expression, and the unity of form as the ‘inevitability’ of the ‘new’ theme; but only FA (working on a basis of both these intuitive feelings, and not from a mere intellectual inspection of the intervallic relationships) can make the latter clear to the conscious mind.”⁷ This letter was written in response to the criticism generated by Cooke’s article *In Defence of Functional Analysis*. In his article, although primarily carried out verbally, Deryck Cooke went as far as to compose his own functional analysis of Beethoven’s Seventh Symphony in an effort to further demonstrate FA’s capabilities.

While signs point to the generally positive reception of FA amongst audiences, composers, and performers; reception from critics, musicologists, and theorists was mixed. R.J. Drakeford was one of its most aggressive opponents, writing: “I recently heard a Functional Analysis of a Mozart piano sonata, and found in the analytical sections a maddeningly persistent statement of the obvious, which moved me first to laughter and subsequently to anger. The actual music, by comparison, was utterly lucid, and I wondered why it was necessary for Mr. Keller to take such pains to demonstrate a unity which musical masterpieces inevitably possess and which the intelligent listener as inevitably perceives (whether consciously or unconsciously hardly matters).”⁸ Drakeford’s argument presupposes that audiences, or more specifically, “intelligent listeners” as he calls them, of a functional analysis performance will have extensive prior experience of the piece being analyzed. It also seems that Drakeford’s criticism is based on the belief that the “obvious” similarities of motives in different passages is the main objective of FA without any regard of the subtle, implicit, musical background they point towards. FA was not developed to replace musical performance of compositions as they were written but merely to be

⁷ Deryck Cooke, “Letters to the Editor: Functional Analysis,” *The Musical Times* 101, no. 1406 (April 1960): 241.

⁸ R.J. Drakeford, “Letters to the Editor: Functional Analysis,” *The Musical Times* 100, no. 1401 (November 1959): 604–5.

an additional tool in connecting and interacting with a composition. For listeners that are curious about why a piece sounds, coheres, and functions the way that it does, FA will be of interest.

Benjamin Britten, on the other hand, strongly supported Keller's method, even going so far as to commission an FA of a Mozart string quartet to be performed at his Aldeburgh festival. As Keller recounted: "When I asked him what had made him so enthusiastic about my method, he replied that it was the only type of music analysis that interested him, because it confined itself to the composer's own pre-compositional thought, partly conscious, partly unconscious. He had thus learnt a lot about himself from my FA of his Second Quartet. I in my turn have to admit that I have never been in touch with a more understanding listener to FA."⁹

Similar Methods

Aspects of FA share commonalities, at least superficially, with several other techniques that preceded and followed. Keller's emphasis on motives in the construction of his analytical compositions was, by his own admission, influenced by theories developed by Rudolph Reti, Heinrich Schenker, and Arnold Schoenberg. In each of these three cases, compositional unity is considered to be derived from a singular origin, which is discovered primarily through their distinct methods of analysis. Reti referred to this unifying and essential component as *Motif*; in Schenkerian analysis, it is called the Fundamental Structure; while Schoenberg described it as the *Basic Idea*. In terms of implementation, Schenkerian Analysis is the most similar to FA in that Schenker's reductions, which were composed as a series of musical reductions that each analyze a distinct structural level of a composition, were also meant to be played and experienced in order to be understood. One additional similarity is that the terms foreground and

⁹ Keller, "Functional Analysis of Mozart's G Minor Quintet," 1.

background are used in both Schenkerian and Functional Analysis. Although Keller's FA, as is the case with all three of the previously mentioned methods, is concerned with discovering the unity of a piece of music, Keller's approach differs in that what unifies the work, according to his writings, lies in the underlying compositional instinct from the composer's subconscious musical thought.¹⁰

Regarding the functional component of FA, Keller compared his method to, and was also influenced by, Hugo Riemann's functional and contextualized conceptualization of harmony, writing: "Something 'functional' is [...] constructed with regard only to its function, and 'functional analysis' draws attention to its exclusive preoccupation with the function of music as well as of the analytic method itself [...] just as Riemann showed that a chord is not a self-sufficient entity determined by its degree, but an entity determined by its function within the progression in which it occurs, FA shows that a motive is not a self-sufficient entity determined by its rhythmic articulation, but an entity determined by its function within its sub-thematic context."¹¹

Pedagogical Applications

It is important to note that the benefits of FA might be just as strongly experienced by the composer-analyst as they are by audiences. For this reason, FA has the potential to have impactful and effective pedagogical applications. In order to introduce the technique to students, simple single line melodies would serve as educational exercises in observing motivic contrasts and unity. Students might begin by looking for any unifying rhythmic elements by, for example,

¹⁰ William O'Hara, "Music Theory on the Radio," 39.

¹¹ Hans Keller, "Letter from Hans Keller," July 1982, *Music Analysis*, Vol. 1, No.2, <https://www.jstor.org/stable/854133>.

clapping the rhythm of a phrase, then comparing that with other themes and looking for similar or related rhythmic material. The resulting similarities could be distilled into a rhythmic reduction of just a few motives that would inform the rhythmic unity of the melody. Those rhythmic components then might be combined with melodic motives through the same process of isolation, comparison, and reduction, by which new motivic connections reveal themselves and an FA of even simple musical material becomes possible. Later, a student might be assigned to compose a full functional analysis of a piece they are studying or preparing for performance in order to encourage conceptualization of the entire piece as a whole. The new conceptualization offered by the FA process, importantly, is based on the work's unique characteristics and is not overly reliant on preconceived notions or extrinsic information. The resulting FAs would not necessarily need to be performed to be useful, as the process of composing them develops musical sensitivity and thought through observing and attending to motivic, thematic, rhythmic, and formal components that unify the piece. Considering that Keller did not provide instructions on how to write an FA, and primarily wrote about the topic with regards to its underlying philosophy, I feel that it is useful to think about FA's potential instead of viewing it as a collection of constraints. The only things that would clearly contradict the method would be to use anything other than music in the analysis, such as words or graphs, or if the included musical material was not derived from the original piece being analyzed. After writing the FA, it would also be useful for the student to experiment with or improvise variations on the fundamental (or to borrow Keller's term, 'Background') material in the work as a routine part of practicing the piece. Such work inspires a higher level of internalization of musical material, deepening interpretive thought. Additionally, the instructor might also compose FAs prior to a lesson in order to demonstrate interpretive ideas to the student.

I believe that it is impossible to interpret or analyze music in an entirely objective way; however, this can be embraced as an opportunity rather than a flaw. Any interpretation is, consciously or unconsciously, built upon a system of personal musical values and ideals. One approach might prioritize metrical homogeneity while the other its heterogeneity. Another would be to devise tempo choices based on harmonic rhythm, while other tempo choices might be based on small melodic and rhythmic motives. In each effort to clearly render and highlight particular aspects of a composition, certain interpretive opportunities are gained while others are lost. The process of creating an FA potentiates a wealth of observations about the interconnectedness of musical ideas between all movements of a multi-movement work: observations about how, as Keller puts it, the piece “hangs together”. It is my view that unbiased observation and sensitivity are at the essence of interpretation. The performer must give room for the composition to speak for itself; to define its own tendencies and rules, and more generally, to define itself.

Functional analysis is merely another interpretive and analytical tool, but one that is free from verbal interference and the confines of non-musical thought. The process of composing the FA included in this paper encouraged me to think about the piece I prepared in an entirely new way, and one that I had not experienced through any other means. I believe that if FA is approached with an open mind, as it was by the general public, composers, and performers, and is not immediately rejected without exploration of its possibilities, as was the case with certain theorists and musicologists, its value becomes self-evident. As with any form of analysis, to varying degrees, a successful FA is dependent on interpretation. While it might differ from Keller’s view, I believe that writing an FA is essentially, in the end, a creative act and one that

relies on the analyst's interpretive instincts and intuition. Due to the possible creativity allowed by the method, the technique potentiates infinite possibilities.

Individual FAs composed by several analysts will be, and in my view ought to be, drastically different from one another. Each one would highlight a variety of unifying elements in a piece based on each analysts' interpretive instincts, tendencies, and musical ideals. All of them, however, would be equally valid if they reveal and demonstrate ways in which a piece is assembled and unified on a level that is not otherwise apparent. FA encourages the analyst to think as the composer through the act of composing, by writing music about music, speaking the composition's own unique language, and on its own terms.

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Appendix

1

Functional Analysis of J. Haydn's Piano Sonata No. 12

Arranged for Classical Guitar

A. Prelude

Andrew Wilder

Tempo di Andante

9

18

25

31

36

Play I. Andante with repeat of exposition

B. Interlude 1

Andrew Wilder

Tempo di Minuet

7

13

21

28

33

39

46

51

Play II. Minuet and Trio with repeats

C. Interlude 2

Andrew Wilder

Tempo più lentamente di Finale

9

18

22

29

35

46

59

66

Play III. Finale with repeats