
The Effects of Instrumentation, Playing Style, and Structure in the Goldberg Variations by Johann Sebastian Bach

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Different recordings and arrangements of the Goldberg Variations by Johann Sebastian Bach were evaluated on cognitive, emotional, and perceptual dimensions. In Study 1, eight different renditions of the piece were classified as Classical or Romantic interpretations. Both harpsichord and piano versions of each style were included. Only minimal differences were found in subjects' appreciation for the harpsichord versus the piano recordings. Comparisons between the Classical and Romantic styles also revealed only slight differences in subjects' ratings. In addition, no differences were found in subjects' enjoyment of different recordings made by a single artist at different points in his career. In Study 2, the structure of the piece was modified by rearranging the order of the variations. A preference for the original version over the modified arrangements was indicated on only 1 of the 15 dimensions measured. In Study 3, specific triplets of variations were played to subjects in their original order and in a random sequence. No differences were found in subjects' appreciation for the original versus the modified versions.

MUSICOLOGISTS and music critics devote much of their time to dissecting musical works in an effort to determine what the intended impact of these works is and how their effects are achieved. A composition is often broken down to its components to evaluate how each contributes to the piece's overall effect.

For their part, musicians and composers differ in their willingness to discuss their works. Some state their intentions implicitly within the work itself. The phrasing, instrumentation, and tempi utilized all give indications of the artist's desired impact. Other artists freely expound on the effects they strive to achieve in statements resembling "manifestoes" (cf. Payzant, 1978). These musicians together with musicologists and music critics have

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produced a wealth of literature in which a wide body of musical works is examined.

It can be argued that music is composed without consideration for its eventual impact on the listener. This is undoubtedly true for some musicians some of the time, but the extensive amount of literature available in which artists' intentions are discussed supports the idea that music is, for the most part, meant to be presented to an audience.

Music scholars do not always agree in their assessments of how, or whether, a composition accomplishes an effect or impression on the listeners. This is, in part, because these authorities are limited to armchair speculation; they lack the experimental tools to measure a work's effect on experts, connoisseurs, and/or the typical lay audience. Much of the time, relatively little supplemental information is available from the composer, making it difficult to draw definitive conclusions concerning the work's intended effect; such is often the case with music composed before the advent of recording equipment. In this situation, music scholars make inferences based on their general knowledge of music and their familiarity with the composer's work (Dutton, 1983; Lang, 1979). This is indeed a difficult task, for the musicologist or critic ideally must not allow his personal biases to prevent him from discerning the composer's intentions (Gould, 1955).

As it turns out, many of the claims made by critics and composers themselves should be amenable to empirical evaluation. The psychology of music is in part concerned with the cognitive, emotional, and perceptual impact of music and has the methodological means to verify the assertions made by music authorities. In short, psychology has the ability to determine objectively whether a work and its components have the effects the artists and scholars claim they do.

Some previous research (Koňecni, 1984) has indicated that the explicit claims made by music theorists and critics, and the implicit ones made by composers through a work's very structure, are not always borne out by the work's actual impact.

In one study, Koňecni evaluated how rearranging the movements of Beethoven's piano sonatas and string quartets would affect the works' overall pleasingness and emotional impact. Music scholars (e.g., *Britannica Book of Music*, 1980) claim that such an alteration would result in a vastly inferior piece. The results of this study, however, showed that even quite drastic modifications of the structure of the pieces had only a minimal negative effect on their pleasingness and emotional impact.

The studies described in this article examined the various explicit claims made by musicians, musicologists, and music critics about the Goldberg Variations by Johann Sebastian Bach. Although the present studies are limited to the Goldberg Variations, many of the claims cited here address issues that are relevant to much of Bach's work and to Baroque music in general.

Study 1

Many music authorities (David, 1945; Donnington, 1963; Landowska, 1964) claim that tampering in any way with the composer's specifications changes the work's overall effect. This study will examine how three different forms of modification (changes in instrumentation, stylistic interpretation, and personal interpretation) affect the impact of the Goldberg Variations.

There are two schools of thought concerning the need for authenticity in modern performance of Renaissance and Baroque music. Proponents of the purist school believe that the full impact of a piece can only be achieved when it is played exactly as the composer intended in terms of instrumentation, tempi, playing style, and so on (e.g., Donnington, 1963; Landowska, 1964). These scholars see any liberties taken in the interpretation of a work as necessarily detracting from its effect.

Scholars (e.g., Berljowsky, 1976; Dutton, 1983; Kochevitsky, 1972; Lang, 1979) who advocate "artistic freedom" claim that restricting modern performance to highly authentic instruments, interpretations, and so on, not only limits artistic creativity, but makes the musical works themselves into historical documents instead of the artistic creations they were meant to be. These scholars and musicians claim that the composers of the past were limited in ways that prevented them from achieving their goals. The modern artist, they feel, has the opportunity to attempt to fulfill the actual aims of those composers.

Critics often tend to ridicule interpretations that do not adhere to the standards commonly associated with the piece in question (Dutton, 1983). A musician who dares to deviate substantially from the norm risks serious career repercussions (*Britannica Book of Music*, 1980). Bad reviews are assumed to deter many musicians from attempting truly innovative interpretations of well-established musical pieces.

The question is Does altering a piece of music with regard to the composer's stated intentions necessarily reduce the overall impact of the composition, or is there room for the coexistence of different but equally pleasing and interesting interpretations?

One of the first issues a composer must address in creating a piece is what instrument(s) to use. Many music authorities (*Britannica Book of Music*, 1980; Landowska, 1964) feel that playing a piece on instruments other than those designated by the composer seriously distorts the piece. This claim has been made specifically in reference to Bach's Goldberg Variations.

Wanda Landowska, a noted harpsichordist and musicologist, maintains: "Piano transcriptions of the Goldberg Variations by Johann Sebastian Bach no matter how thoughtfully edited, cannot succeed in preserving

the effect the composer intended” (Landowska, 1945). Scholars with kin ideas claim that the full impact of Bach’s music can only be realized on the instruments of the Baroque period. In contrast, a second group (Goldsmith, 1979; Joseph, 1975; Payzant, 1978) maintains that the piano captures the composer’s intentions just as well as do the older instruments, such as the harpsichord.

For a variety of reasons, the Goldberg Variations is a piece particularly well suited for an examination of the effect of the type of instrumentation in Bach’s music. Bach rarely specified a particular instrument for any one piece, but he composed the Goldberg Variations specifically for the two-manual harpsichord (Geiringer, 1966). Therefore, the intended instrumentation of the composer is clear.

The Goldberg Variations are considered by many musicologists and musicians (Dowley, 1981; Terry, 1963) to be Bach’s most comprehensive keyboard composition. The performer is called upon to execute a vast array of ornaments and technical maneuvers (Marshall, 1976). Due to differences in the keyboard designs of the two instruments, some of these maneuvers must be altered or omitted when playing the piece on the piano. The complexity of the piece should provide ample opportunity to reveal any differences in the effect achieved by the piano as opposed to that by the harpsichord.

Proponents of the harpsichord cite the mechanical differences between the two instruments to support their view (Landowska, 1964). These differences result in distinct sonorities and degrees of resonance. This school of thought claims that these qualities affect the impact of the piece.

Although the two instruments are decidedly different, it cannot be inferred that these differences alone necessarily affect the composer’s desired impact. Musicians and musicologists (Goldsmith, 1979; Joseph, 1975; Wadsworth, 1980) who advocate piano versions claim that a careful interpretation of the piece and a thorough understanding of the differences between the two instruments will result in a musically accurate and pleasing piano rendition.

Stylistic interpretation is another area of concern for musicians, musicologists, and music critics. One musicologist states: “Style of interpretation and style of music can contradict each other if the performer assumes too many liberties. This leaves us uneasy about the piece . . . sometimes the piece just does not affect us as it should” (Donnington, 1963).

The Goldberg Variations is a formal classical work (Roddy, 1983). It, along with most of Bach’s music, epitomizes the Baroque style. Romantic interpretations of the Goldberg Variations have been recorded and have, in some cases, received sharp criticism for being “other than what the composer intended” (Sadie, 1971).

The playing styles of the Baroque and Romantic eras differ in a variety of ways. Clarity of the polyphonic complex and technical adroitness are con-

sidered pertinent to a proper interpretation of Baroque and, therefore, of Bach's music (Kochevitsky, 1972; Landowska, 1964). Dynamic variation and the legato touch are common in the music of the Romantic period, but were rarely used in the music of Bach's time (Basel, 1976). Romantic music is typically more fluid and less restricted by the theoretical and structural formalisms of the Baroque era (*Britannica Book of Music*, 1980).

The diversity of musical forms in the Goldberg Variations renders it an excellent subject for examining the effects of different stylistic interpretations. The piece contains an overture, a quodlibet, several dance-type variations, and nine different canons. Each variation is commonly thought of as having a unique character (e.g., Gould, 1955). The piece thus provides a wide spectrum in which to evaluate the differences in the Romantic and Classical styles of interpretation.

In addition to examining differences in stylistic interpretation, changes in personal interpretation were also measured. Occasionally, a performing artist will make more than one recording of a piece during his career. There is reason to believe that in doing so the artist intends to modify some aspect of his original recording (Dutton, 1983). In one way or another, the artist reconsiders how the piece could best be performed. Gustav Leonhardt, for example, used two different types of harpsichord to make the two different recordings (the first made in 1965 and the second in 1978) included in this study. Glenn Gould, who has also recorded two versions of this work (the recordings were made 28 years apart with the first being recorded in 1955) was unsatisfied with his first rendition and attempted to improve upon it (Page, 1983).

The psychology of music, then, can help bridge the gap between musicians and music appreciators by determining whether the aforementioned differences are perceived in the intended manner.

Method

To examine the effects of different instrumentation and of different stylistic and personal interpretations, eight recordings of the Goldberg Variations were evaluated on cognitive, emotional, and perceptual dimensions.

Four harpsichord and four piano versions of the piece were selected. Each recording was classified as either a Romantic or a Classical interpretation based on a consensus of claims made by musicologists, musicians, and music critics.

Subjects for this study were 112 undergraduate students from the University of California at San Diego. Fifty-seven male and fifty-five female subjects participated. Demographic information and information concerning the subjects' musical background (including their familiarity with the Goldberg Variations, as well as their familiarity with, and fondness of, Baroque music in general) were collected.

A between-subjects design was used, in which each recording was heard by 14 subjects. Groups of 2 to 8 subjects came to the studio where they heard one of the eight versions in its entirety.

The studio was equipped with stereo speakers and was large enough to provide comfortable seating for the subjects. The music was played at an agreeable listening level.

TABLE 1
Artists Whose Recordings Were Used in This Study

	Piano	Harpsichord
Classical:	Glenn Gould (1955) Glenn Gould (1983) Daniel Varsano	Gustav Leonhardt (1965) Gustav Leonhardt (1978) Ralph Kirkpatrick
Romantic:	Wilhelm Kempff	Wanda Landowska

Stimuli. The artists whose recordings were used in this study are listed in Table 1. These versions were selected primarily because of the availability of claims made about the artists' use of their instruments and their interpretations of the piece (see Appendix 1 for the list of sources).

Individual cassette recordings were made of each album to insure consistency from one playing to the next.

Rating Instrument. Subjects evaluated the piece on the following 15, 200-mm bipolar scales: Clear-crisp/not clear-crisp, ugly/beautiful, wish to own/do not wish to own, pleasing/not pleasing, simple/complex, cold/warm, exciting/not exciting, spontaneous/not spontaneous, weak/strong, interesting/not interesting, orderly/disorderly, slow/fast, emotional/not emotional, surprising/not surprising, slightly differentiated/highly differentiated. The differentiation dimension measured the uniqueness of the different variations; if the variations all sounded alike, they were to be considered slightly differentiated, but if each sounded unique, they were to be considered highly differentiated (this was explained to the subjects). The positive and negative extremes of the various scales were alternated in the booklet. Subjects made their evaluations upon completion of the piece. These evaluations were then measured to the nearest millimeter for the data analysis.

Results and Discussion

Because of variability in subjects' musical backgrounds, the following factors were treated as covariates in computing the results: The amount of time the subject had played a musical instrument, the number of music and/or art classes taken, and the subjects' familiarity with, and fondness of, Baroque music. As only a very few of the subjects were familiar with the Goldberg Variations, we did not control for this factor.

In the harpsichord/piano comparison, two significant effects were found. On the ugly/beautiful dimension, a significant preference was shown for the piano ($t_{(104)} = 2.11, p < .05$; the means were 142 and 155 mm from the "ugly" extreme for the harpsichord and piano, respectively). The piano was also the preferred instrument on the pleasingness scale ($t_{(104)} = 2.52, p < .01$; the means were 133 mm for the harpsichord and 153 mm for the piano as measured from the "not pleasing" extreme). On the pleasingness dimension, all four piano versions received higher ratings than any of the harpsichord recordings.

It is interesting to note that there were no significant differences on the

clarity, complexity, or interestingness dimensions. Obviously, to a general audience, playing the piece on the piano does not reduce the clarity of the sound or the polyphonic texture of the piece as some music scholars (Landowska, 1964) suggested it would. In addition, any necessary changes made to the ornamentation in the piano recordings did not detract from the work's interestingness or complexity.

These findings indicate that playing the Goldberg Variations on the piano does affect the work's overall impact to a certain degree, but only in a positive sense. This is at least true for a contemporary, general audience that is probably accustomed to the piano more than to the harpsichord. For this audience, the pleasingness and beauty of the piece are enhanced on the piano. It seems unfortunate, then, to strive to restrict performance of the piece to authentic, yet to modern ears, less enjoyable instruments. Whatever it is that the proponents of authentic instrumentation feel the harpsichord offers that the piano does not is obviously not perceived by the general listener.

In comparing Classical with Romantic interpretations, only one significant difference was found. Subjects heard a higher degree of differentiation between the variations in the Classical renditions than in the Romantic versions ($t_{(104)} = 2.40, p < .01$; the means were 100 and 129 mm from the "slightly differentiated" extreme for the Romantic and Classical interpretations, respectively). Classical interpretations, then, better reveal the individual character of each variation.

Many music authorities (David, 1945; Gould, 1955; Marshall, 1976) maintain that much of the Goldberg Variations' impact derives from the individuality and contrasting nature of the different variations. If this is true, however, it is surprising that differences in the interestingness, beauty, pleasingness, and complexity of the different playing styles were not found in conjunction with the difference found in the differentiation. Differentiation was significantly correlated with complexity (.29), strength (.30), excitingness (.31), surprisingness (.37), and emotionalness (.40), but no significant effects were obtained on any of these dimensions.

Bach clearly designed the Goldberg Variations to consist of a diversity of musical forms, but diminishing the contrast between them seems to have little effect on the effect of the piece as a whole.

Romantic interpretation, then, appears to have only a minimal effect on the overall impact of the work.

The comparison of the two Gould recordings to each other revealed no significant differences, and the same was true for the two Leonhardt recordings. In spite of these artists' attempts to present different interpretations by re-recording the piece, the perceived impact on the dimensions studied remained the same.

In comparing the ratings of the individual recordings, the following

significant effects were found: Beautifulness ($F_{(11, 100)} = 1.97, p < .05$), desire to own ($F_{(11, 100)} = 2.92, p < .01$), excitingness ($F_{(11, 100)} = 1.88, p < .05$), interestingness ($F_{(11, 100)} = 3.32, p < .01$), and differentiation ($F_{(11, 100)} = 2.22, p < .05$).

One recording, Glenn Gould's 1983 rendition, had the highest mean scores on all five of these dimensions. Gould has been credited (Roddy, 1983; Said, 1983) with capturing the essence of Bach's music in a way that few other musicians can duplicate and yet he has done so without subscribing to the standards set by music scholars (Dutton, 1983). He used unusual tempi in a number of the variations, for example, and has an uncommonly aggressive approach (Broder, 1956; Strickland, 1978). Gould believed that even if it were possible to discern how a composer himself would have played a piece, that conception alone should not be considered sacrosanct, but should merely serve as a basis for other artistic interpretations (Dutton, 1983). In the case of the Goldberg Variations, Gould seems to have captured Bach's intentions without the strict observance of his every specification.

An additional interesting finding was that the two recordings by Gustav Leonhardt, considered by critics to be among the finest renditions of the piece, ranked among the least preferred in this study. Leonhardt's 1965 recording was considered the least beautiful, least orderly, weakest, and tied with the 1978 version as the least pleasing. The 1978 version was further found to be the least desirable to own, the least surprising, and the least emotional.

It is often assumed by music scholars that there is a "right" way to play a piece and deviations from that conception are often criticized (Dutton, 1983). Wilhelm Kempff's romantic recording of the Goldberg Variations is a case in point. The rendition was considered "un-Bachian" and received generally unfavorable reviews. This recording, however, received the highest rating of all the versions on the pleasingness scale.

Kempff may not have satisfied all the requirements of a Bachian rendition, but the recording was found enjoyable by a general audience. The Leonhardt recordings, for their part, are truly Bachian in nature, but were found less appealing.

A number of statistically significant correlations was found between the dimensions measured. Only some of the more interesting correlations are mentioned here. Strong correlations were found between pleasingness and the desire to own a recording (.68). Pleasingness and beautifulness were also highly correlated (.70). Interestingness was correlated with pleasingness (.47) as well as with the desire to own (.47), beautifulness (.42), excitingness (.58), and strength (.40). Correlations between the clarity of the piece and beautifulness (.43), pleasingness (.31), complexity (.29), and orderliness (.34) were also found.

The study suggests that there is plenty of room for artistic individuality in interpreting Baroque music. Alterations in instrumentation and stylistic interpretation do not necessarily cause major changes in a work's overall impact and, therefore, should not be categorically criticized. It would appear that a variety of different, yet enjoyable, renditions of a piece can coexist. Music critics and musicologists may be doing the general public and some musicians a disservice by unjustifiably censoring certain aspects of musical works.

Study 2

This study examines whether crudely bandering with the structure of a musical work reduces its pleasingness, interestingness, or emotional impact for a lay audience.

The structure of a musical piece is generally considered to be an influential aspect of the work's overall effect. The following statement describes the view held by many music authorities: "Given the thousands of directions in which the material of a work could be unfolded, the (composer) chooses the 'right one,' the one that maintains structural tension and hence musical interest. The themes of a masterpiece cannot assume one another's function" (*Britannica Book of Music*, 1980). Alterations to the thematic chronology of a work, then, should cause discernible changes in the work's overall effect.

It is further maintained that "an illuminating exercise . . . is to reconstruct a masterpiece so that its thematic running order is altered . . . nothing is better calculated to reveal the presence of a creative principle of contrast distribution in the original" (*Britannica Book of Music*, 1980).

During the period in which Bach composed the Goldberg Variations, he was especially attentive to the questions of structure and organization (Wolff, 1976). The piece is unanimously considered a masterpiece of structural design (Gould, 1955; Kirkpatrick, 1954; Robinson, 1973; Terry, 1963). The Goldberg Variations, therefore, is an appropriate piece to examine the importance of structure and sequence in a musical work.

The aria on which the variations are based is played as an introduction to the thirty variations and again at the conclusion. This serves to frame the variations giving the piece a sense of circular completeness (Kirkpatrick, 1954). The aria contains 32 measures which are divided into two 16-measure halves. This pattern is duplicated in the overall piece which, including the aria and the aria da capo, also consists of 32 parts. Like the aria, the piece is divided into two parts with the sixteenth variation marking the beginning of the second half.

The piece is organized in a tripartite system where the third variation in each triplet is a canon. During the piece, the canon interval progresses from

the octave to the ninth. The variations are said to “follow a symmetrical grouping like the beads of a rosary” (Kirkpatrick, 1954). As one musicologist states: “The Goldberg Variations unfold in its grandeur of conception only when the complete series of compositions is heard in succession” (David, 1945).

Stimuli

All tapes used in this experiment were made from Glenn Gould’s 1955 recording of the piece. This recording was selected based on Gould’s reputation as a truly Bachian player. Although Gould’s is a piano rendition, he is commonly credited (Hume, 1955; Said, 1983; Wadsworth, 1980) with avoiding all pianistic effects in his playing. In addition, the results from Study 1 indicate that playing this piece on the piano has only a minimal effect on the work’s overall impact. As Gould is considered quite adept at capturing Bach’s intentions, only the structure of the piece will deviate from the composer’s desired effect in this experiment.

Three different arrangements of the Goldberg Variations were used in this study: The original recording (Version 1); a version (Version 2) in which the variations were randomly scrambled (the order used was: 3, 7, 10, 18, 20, 25, 27, 30, 16, 19, 1, 2, 6, 9, 11, 14, 17, 21, 24, 26, 28, 29, 4, 5, 8, 12, 13, 15, 22, 23), but the arias retained their positions at the introduction and conclusion of the work; and a version (Version 3) consisting of the same random order used in Version 2, but with the arias placed after variations 14 and 15. Version 3 was thus an even more drastic alteration than Version 2.

In making the tapes of Versions 2 and 3, every attempt was made to reduce any signs of modifications. Although effects such as uneven spacing and clicking sounds between the variations were not completely avoidable, subjects reported little awareness of such distractions. It should be noted that spacing between the variations on the original varies as well.

The rating instrument used in Study 1 was employed in this study also.

Method

A between-subjects design was used in which each version was heard by a total of 14 male and female subjects. Subjects came to the studio in groups of 2 to 8. Demographic and music-related information was obtained.

Subjects were told that they were to listen to, and evaluate, a musical piece, but no title was given to the work. Subjects were instructed to make their evaluations after hearing the entire piece.

Results

As subjects differed in their musical backgrounds, the same covariates used to control for musical experience in Study 1 were used in computing the results for this study as well.

Only one significant effect was found. On the warm/cold scale, a significant preference was shown for the original over Versions 2 and 3 ($F_{(6)} = 2.85, p < .05$; the means were 151, 126, and 123 from the “cold” extreme for Versions 1, 2, and 3, respectively).

It would appear, then, that a general audience does not perceive the structural effect that the music authorities suggest exists. Perhaps the composer’s organization of the piece is not the only one capable of maintaining

musical interest and producing pleasure (the means for pleasingness, as measured from the “not pleasing” extreme, were 147, 148, and 136 for Versions 1, 2, and 3, respectively; means on the interestingness dimension were 139, 135, and 118 from the “not interesting” extreme for Versions 1, 2, and 3, respectively).

Study 3

A second study was conducted to further investigate the importance of structure in a musical work. Here the triplet organization of the Goldberg Variations was the focus.

Stimuli

Glenn Gould's 1955 recording was again used in this experiment. Two triplets (variations 1–3 and 16–18) were isolated from the piece and recorded both in their original arrangements and in a random order (1,3,2 and 18,17,16).

Attempts were made to minimize all indications of modification in the altered triplets. Subjects' reports suggest that any such effects were not noticed.

Rating Instrument

Each triplet was rated on the following 200-mm bipolar scales: Slow/fast, weak/strong, orderly/not orderly, pleasing/not pleasing, interesting/not interesting, beautiful/ugly, crisp-clear/not crisp-clear, and wish to own/do not wish to own.

The negative and positive extremes of the scales were counterbalanced in the booklet.

Method

A within-subjects design was used in which 12 male and female undergraduate students from the University of California at San Diego served as subjects. Demographic and music-related information was gathered.

Groups of 2 to 4 subjects came to the studio. They were told they would hear four short musical works, but no indication was given that any relationship existed between the different triplets. Subjects were told to wait until the completion of each piece before making their evaluations. A random order of presentation was used.

Results

No significant effects were found between the altered and original versions of the triplets. These results indicate that both within the context of the piece (as was tested in Study 2), and on a smaller scale, the effect achieved by the sequence and structure of the variations is not detected by a general audience.

General Discussion

The results of the studies described in this article can be summarized as follows:

1. Employing styles of interpretation and instrumentation that are other than what Bach intended does not necessarily detract from the overall impact of the Goldberg Variations.

2. Altering the structure of the Goldberg Variations has only a minimal effect on the overall impact of the piece.

3. Changing the order of certain triplets does not result in a decrease in the enjoyment of these segments.

An obvious objection to the studies described in this article is that the subject population used was inappropriate to evaluate the issue involved. However, counterrebuttals were available for various levels of this general criticism.

Admittedly, college students are generally not connoisseurs of Baroque music, but neither are they completely ignorant of the subject (in Study 1, means for the familiarity with, and fondness of, Baroque music on a 200-mm scale were 53 and 80 from the negative scale ends). University students, then, would seem to represent a close to average point on the continuum of music appreciators, rendering them a reasonable group of judges.

Although intuitively one might suspect that serious music appreciators would be more sensitive to the manipulations performed in these experiments, previous research (e.g., Gordon, 1981; Konečni, 1984) using other art media shows that artistic training by itself does not affect the subjects' awareness of alterations in artistic works and does not diminish their enjoyment of such works.

The exception would presumably be the experts thoroughly familiar with the piece in question. However, claims made by musicologists and musicians are often worded such that they imply applicability to all music listeners (e.g., the comments made by Landowska and David, along with the excerpts taken from the *Britannica Book of Music*, cited in this article). If the issues these authorities address pertain only to individuals with advanced musical training and expert knowledge of the piece in question, they should be stated as such. A greater degree of caution, moderation, and humility in the music critics' and theorists' often sweeping claims—mere speculations really—would be a welcome consequence of the type of research in the psychology of music that this article advocates. The objective of this approach is not to suggest that all claims made by music scholars are fallacious, but rather to assess to what degree they are legitimate and/or necessary.

The present studies could also be criticized on the grounds that it would have been better to examine several different pieces rather than one work in depth. Previous research (Konečni, 1984) has been done in which individual aspects of different works were tested. It, therefore, seemed of interest to further this research by conducting a more focused study where different elements of an individual—exemplary, universally praised, and

“prototypic”—piece were evaluated. Certainly it cannot be concluded from these experiments that altering the instrumentation, structure, or playing style of a musical piece never affects the work’s overall impact. Such a broad generalization would be quite inappropriate. It can be stated, however, that the aforementioned modifications do not *necessarily* distort the piece or the composer’s intentions and, therefore, should not be condemned on a priori grounds, based merely on speculation rather than empirical evaluation.

The world of music, it has been claimed, is more heavily restricted by authoritarian input than any other artistic realm (Dutton, 1983). It would appear that allowances for artistic creativity are reduced based on beliefs that are, at least in some instances, erroneous.

Subjects’ responses in these studies indicate that they genuinely enjoyed both the original and the altered versions of the Goldberg Variations. As was shown, modifying the piece had only a minimal effect on subjects’ enjoyment of it. It would seem, then, that the pleasure produced by the piece results from something other than what the music authorities suggest.

The analyses proposed by the music scholars suggest that the attributes of a piece of music combine in an additive, rather than an interactive, fashion (Konečni, 1984). It may be that complex interactions between the components of a musical work are responsible for the positive effects the composition creates. Although music authorities are capable of elucidating important features found in a musical piece, they lack the methodological means to investigate the relationships between these dimensions; such interactions can only be explained through the type of empirical investigations described in this article. The psychology of music, then, can improve current theories of how the cognitive, emotional, and perceptual impacts of music are achieved by augmenting the armchair speculation provided by music authorities with further empirical study in this domain.

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Appendix 1

Artist	Album	Source of Commentary
Glenn Gould (1955)	CBS Great Performances MY 38479	<i>High Fidelity Record Annual</i> 1956. New York: J. B. Lippincott Co., 1956 <i>Fanfare</i> , 1980, 4, 61
Glenn Gould (1983)	CBS Masterworks DBL 37779	<i>Vanity Fair</i> , May 1983, 97–127 <i>Glenn Gould Variations</i> J. McGreevy (Ed.) New York: Doubleday & Co., 1983
Wilhelm Kempff	Deutsche Gramophone 139 455	<i>Gramophone</i> , 1971, 48, 1325 <i>Stereo Review</i> , 1971, 26, 79 <i>High Fidelity</i> , 1979, 29, 128
Ralph Kirkpatrick	Archiv Produktion	<i>Gramophone</i> , 1981, 58, 1343 <i>High Fidelity Record Annual</i> . New York: J. B. Lippincott Co., 1956
Wanda Landowska	RCA Victor LM 1080	<i>Audio</i> , 1965, 49, 4664 <i>Glenn Gould Variations</i> J. McGreevy (Ed.) New York: Doubleday & Co., 1983 <i>Gramophone</i> , 1972, 49, 1208
Gustav Leonhardt (1965)	Telefunken SAWT 9474-A	<i>High Fidelity Annual Records in Review</i> . Mass.: Wyeth Press, 1967 <i>Gramophone</i> , 1978, 56, 922
Gustav Leonhardt (1978)	Harmonia Mundi IC 065 99710	<i>Gramophone</i> , 1978, 56, 922 <i>Fanfare</i> , 1980, 4, 61
Daniel Varsano	CBS Masterworks	<i>Fanfare</i> , 1981, 5, 82–83 <i>High Fidelity</i> , 1981, 31, 56–57