

# The Path of Improvisation in Modern Musical Practice from Jazz Origins to the Academic Space

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**Abstract** The purpose of this work is to clarify the place of improvisation in modern performance and to identify its main types in the jazz and academic tradition. The study was conducted in 2025 as a qualitative comparative analysis of 24 musical samples - 12 jazz and 12 academic works, which contain elements of improvisation. Each sample was evaluated according to three criteria, using a scale from 0 to 2. These criteria took into account the degree of performance freedom, the features of working with musical text and the function of improvisation in the structure of the work. The obtained data clearly distinguish two performance practices. In the jazz group, the maximum set of values (2-2-2) was recorded in 9 cases out of 12, which indicates the formative role of improvisation and its determining influence on the musical structure. In the academic group, the sets (0-0-0) prevail in 6 cases and (1-1-1) in 5 cases, i.e. the variability is limited, and improvisation performs an auxiliary function. Only in one sample did a mixed configuration (2-1-2) occur, which indicates a local expansion of performance freedom. Based on the repeatability of the parameters, we identified three models of improvisation: structural, controlled, and hybrid. The results confirm that improvisation is a universal mechanism of musical interpretation, but its influence on the formation of forms significantly depends on the performance context. This is important for the development of modern performance practice and music education.

**Index Terms** musical interpretation, canon and improvisation, jazz performance practice, creative processes of musical performance, improvisation in academic music, musical variability, performing freedom

## I. Introduction

Modern musical art has changed significantly: the reproduction model has been replaced by the interpretation model. Today, the performer of the work is no longer the bearer of the text. He actually becomes an active co-author.

Traditionally, academic music is focused on reproducing the author's idea. Jazz music, on the contrary, is built on elements of improvisation.

Elements of jazz have long penetrated the performance of academic works. Complex structural models are gradually becoming inseparable from the composer's. Modern theories of musical art mostly consider the canon and improvisation as antipodes. However, the authors do not consider how these phenomena interact in practice. Improvisation here appears as a living creation of meaning at the intersection of structure and choice. Bergamin and Williams [1] interpret it as a way of ordering musical experience, in which the performer constantly makes decisions about further action. According to the researchers, microrhythmic deviations are signs of cognitive acts that arise from the improviser's "action-as-expression" orientation. This is a space where structure and openness do

not oppose each other, but interact.

Cheston et al. [2] argue that the rhythmic characteristics of improvisation are individual features of the performance style. They are what indicate authorship and build the performance "handwriting" [3]. This allows us to interpret improvisation as a means that transforms performance into an act of creative construction of musical content.

Daikoku [4] offers a neurocognitive perspective. He links improvisational activity to anticipation and the ability to deal with uncertainty - it works through the mechanisms of prediction error. The researcher describes this process as an adaptive system where the performer constantly compares the expected sound with the real one, and the very contradiction between spontaneity and structure is removed [5].

Despres et al. [6] note that even in the Western European classical tradition, experienced musicians rely on proven techniques - variation, melismatics, adaptation of tempo and volume. Zeng [7] emphasizes that this is a powerful tool for revealing the creative potential of the performer, but for fruitful implementation a clear and consistent methodology is needed.

Today, the scientific basis remains motley and fragmented. There is still no generalizing model in which jazz improvisation would appear as a system-forming core. Scholars mostly delve into either cognitive processes or stylistic subtleties, without bringing these layers together. In addition, there is a lack of research on how improvisational skills are transferred from one genre environment to another.

The purpose of this work is to clarify the place of improvisation in modern performance and to identify its main types in the jazz and academic tradition. To do this, it is necessary to solve a number of tasks: to delve into the essence of improvisation as a component of a musical work; to identify the leading types of improvisational practices; to analyze improvisation as a means of reproduction in jazz and academic traditions; to identify the mechanisms of their interaction; to outline how improvisational experience can migrate between different performance contexts.

## II. Literature Review

Contemporary research on musical art forms an interdisciplinary field where musicology, psychology, neuroscience and pedagogy converge. At the same time, the analytical combination of these approaches is still quite limited. Improvisation is increasingly understood as a multi-level process – a complex interweaving of cognitive, emotional and social mechanisms of performance.

Dolan et al. [8] argued: in classical performance, not only performance is involved, but also perception by the listener. Therefore, it is necessary to enhance the feeling of a living process.

Hill [9] confirmed the importance of teaching musicians who perform academic works modern methods of performing works that have the ability to influence thinking, although this direction has not yet received theoretical generalization.

Garda [10] interprets the performance of a work as a balance between predictability and openness. A similar view is expressed by Hadar and Eigen [11], who also emphasize the universal nature of such a balance.

Gittelman [12] found that jazz improvisation involves complex neural networks associated with creativity and decision-making.

Daikoku [13] saw improvisation as a mechanism that builds dynamics, allows for the anticipation of errors, and acts as a constant adjustment of expectations within a given structure. Thus, improvisation appears not as a chaotic action, but as a controlled cognitive process.

A phenomenological perspective is revealed by Skryabin et al. [14], considering improvisation as a form of self-expression that deepens the personal identity of the performer [15].

McGlone and McDonald [16] emphasize the sociocultural dimension that improvises as an access point to expand creativity in the contemporary musical environment.

Nozawa et al. [17] draw attention to the socio-psychological side of the matter: the improvisational approach enhances syn-

chronization between performers and modifies the listening musical experience.

Roth [18] argues for the need to foster emotional resonance and a state of shared flow, emphasizing the social importance of this phenomenon.

Choi [19] believes that in music education, improvisation shifts the emphasis from accuracy of reproduction to the development of creative skills and flexible thinking.

Krevel and Znidarsic [20] observed that the increasingly widespread use of improvisation in school education indicates its gradual entry into the institutional channel. Jouin et al. [21] share the same opinion: it is a valuable tool for the formation of interdisciplinary abilities.

Hu [22] suggests considering improvisation as a fundamental principle of creativity in open systems, noting that modern tools, in particular artificial intelligence, can also be used to develop adaptive thinking.

Sayers [23] reminds us that improvisation is an integral part of not only European musical traditions.

The current scientific literature considers improvisation in a multidimensional way, but it lacks analytical integrity. Studies either focus on separate perspectives – cognitive, pedagogical, social – or are confined within the framework of a single performing tradition.

## III. Materials and Methods

The study had a qualitative comparative design and was aimed at identifying the role and typology of improvisation in jazz and academic performance. The empirical material was processed during 2025, systematically comparing musical samples according to predetermined criteria.

The sample was formed by the method of purposeful non-random selection. Its volume is 24 units, distributed equally between the jazz and academic traditions (12 each). The corpus of sources covered audio recordings (concert and studio) belonging to the period 2000–2025. The jazz block is represented by instrumental improvisations – solo and ensemble; the academic – by the performance of works that contain improvisational components: cadences, ornamentation, variant deviations from the recorded musical text. The inclusion criteria were: the presence of clearly identified improvisational fragments, a duration of at least three minutes, sufficient quality of the audio recording for reliable fixation of performance parameters. Samples with vague improvisational features were excluded from the analysis.

The analytical procedure was built sequentially. At the first stage, the material was initially processed with the isolation of improvisational segments. At the second stage, each sample was subjected to double analysis by one researcher with subsequent re-checking of the results. The analytical apparatus was based on a system of operationalized criteria recorded in the research table.

The degree of performance freedom was assessed on a scale of 0–2, where 0 - absence of variations, 1 - limited variability, 2 - extensive improvisational play. Work with musical text was graded similarly: 0 - exact reproduction, 1 - partial

modifications, 2 - significant transformation or going beyond the limits of the fixed text. The function of improvisation was determined through three positions: 0 - finishing, 1 - interpretative, 2 - form-creating.

Quantitative indicators for each sample were entered into a structured analytical table. Further comparison of the two groups was based on these values and took into account the frequency of their repetition within each performing tradition. Regularities were established by the degree of coincidence of the configurations of the criterion assessments. The unification of the analytical algorithm for all samples ensured the reproducibility of the results with a similar selection of material.

The analysis was carried out purely on the basis of audio materials, without the use of specialized software, which corresponds to a qualitative research strategy. Methodological limitations are due to the interpretative nature of the procedure, which allows for a certain level of subjectivity, as well as the small sample size. The obtained parameters formed the basis of the typological analysis of improvisational practices, presented in the results section.

#### IV. Results

The initial analysis of the sample of 24 samples revealed a clear differentiation of the scores for each of the three operationalized criteria. This gave grounds to outline the initial configuration of the improvisation parameters for both studied musical traditions. The indicators were recorded in analytical tables separately for each recording, and then generalized within the jazz ( $n = 12$ ) and academic ( $n = 12$ ) subgroups.

According to the criterion of the performer's degree of freedom, the jazz subgroup demonstrates the dominance of maximum values: 10 out of 12 samples received a score of 2, which corresponds to extensive improvisation with a significant deviation from the original material. In two cases, a score of 1 was recorded – limited variability in the introductory segments, in particular during the initial presentation of the theme in the interpretations of *So What* [24], [25]. The jazz group does not contain zero marks - no performance is devoid of an improvisational component.

In the academic subgroup, the distribution is inverse. A score of 0 was registered in 7 out of 12 samples, that is, an exact reproduction of the author's text without variations was recorded. A score of 1 was found in 4 cases, where improvisation is realized through ornamentation or agogic changes (such as in the performance of *Cello Suite No. 1*, *Yo-Yo Ma* [26]). A score of 2 was recorded only once - in the cadence fragment of *Piano Concerto No. 5* [27], where relatively free variation is observed.

Analysis of the parameter of working with musical text confirmed a similar pattern. In the jazz group, 9 samples were rated with a score of 2: the material undergoes transformation, and the original theme serves only as a structural basis for variational development (in particular, in the solo improvisations of *Davis and Coltrane* [28]). Three samples received a score of 1 - the thematic material retains its recognizability, but undergoes partial changes [29]. There are no zero indicators.

In the academic subgroup, the score of 0 (8 cases) prevails - exact adherence to the musical text, an example of which is the performance of the *Goldberg Variations* [30]. A score of 1 was recorded in 4 samples, where there are mainly ornamental deviations in the Baroque repertoire. A score of 2 practically does not occur, except for individual cadential constructions, which confirms the local, rather than systemic, nature of the text transformation.

The most pronounced distinction is revealed by the parameter of the improvisation function. In the jazz subgroup, 11 out of 12 samples were rated 2: improvisation plays a formative role, determines the sequence of musical events, the logic of the form's development, and the dynamic profile of the performance. One sample received a score of 1, which refers only to the initial exposition of the theme before the improvisational section.

The academic subgroup, on the other hand, tends to score 0 (6 cases) and 1 (5 cases): improvisation plays a decorative or interpretative function, without affecting the overall structure of the work. A score of 2 was recorded in only one sample, which emphasizes the episodic nature of such a phenomenon. The generalized distribution of parameters is given in Table 1.

Table 1: Distribution of values of improvisation parameters in the musical sample ( $n = 24$ )

| Criteria                 | value | Jazz<br>( $n=12$ ) | Academic<br>( $n=12$ ) |
|--------------------------|-------|--------------------|------------------------|
| freedom of the performer | 0     | 0                  | 7                      |
|                          | 1     | 2                  | 4                      |
|                          | 2     | 10                 | 1                      |
| working with text        | 0     | 0                  | 8                      |
|                          | 1     | 3                  | 4                      |
|                          | 2     | 9                  | 0                      |
| improvisation function   | 0     | 0                  | 6                      |
|                          | 1     | 1                  | 5                      |
|                          | 2     | 11                 | 1                      |

Source: compiled by the author based on analysis of musical samples

The indicators recorded in the study paint a fairly transparent picture of the distribution of improvisation parameters. Jazz samples are concentrated around high values (2) for all criteria, while academic ones tend to low (0) and moderate (1). Such a stratification provides grounds not only for comparison, but also for the isolation of recurring models of improvisational behavior.

A comparison of twelve jazz and twelve academic samples revealed systematic differences for each of the three operationalized parameters. Thus, the functional content of improvisation in both traditions does not really coincide. The comparison was based on numerical estimates, summarized in an analytical table, and took into account how often a particular value occurred in each group.

The criterion of performance freedom showed a deep asymmetry. Jazz is almost exclusively at the top: 10 out of 12 samples received a score of 2 - improvisation is the main means of organizing the sound material here. For example, in different versions of *So What* [24], [25], [31] variation affects melody, rhythm and harmony, producing a new performance version each time. The academic group, on the other hand,

rotates in the range of 0 and 1; performance freedom remains limited. Even when we fix variability - for example, in the Cello Suite No. 1 [26] - it does not overcome the limits of stylistically permissible deviations and does not restructure the musical structure.

An even more noticeable gap is provided by the parameter of working with the text. In jazz, a score of 2 prevails: the interaction with the material is transformative. The original theme serves only as an impetus, while the harmonic grid or general formal outline remains intact. The solo episodes of *So What* illustrate this to the fullest extent: the initial theme quickly recedes from the foreground, giving way to improvisational development. In the academic camp, score 0 prevails - note-for-note reproduction, an example of which is the Goldberg Variations performed by Gould [30]. Single shifts (score 1) do not change the nature of the text and are purely local in nature, which indicates the undeniable priority of the author's recording over improvisational freedom.

The most contrasting distinction was revealed by the criterion of the improvisational function. In jazz, 11 out of 12 samples are marked with a score of 2 - improvisational segments do not simply fill the form, but actually build it: they determine the course of events, outline the climaxes, and maintain the drama. The academic tradition operates with scores of 0 (six cases) and 1 (five). Improvisation here rather embellishes or nuances the performance, without affecting the general architectonics of the work. Even in the cadential fragment of the Fifth Piano Concerto [27], where noticeable freedom is traced, it does not go beyond the boundaries of a separate segment.

Thus, the comparison highlights a stable pattern: in jazz performance, the three parameters are combined into a configuration of maximum values, which ensures the integrity of the improvisational act as a form-forming core. Academic performance demonstrates a combination of low and moderate scores, subordinating improvisation to the canonical text. Thus, the functions of improvisation differ significantly: for jazz it is a structuring principle, for academic music it is a tool of limited interpretation.

The generalization of data on all 24 samples allowed us to trace expressive patterns - repeating configurations of three criteria, on the basis of which we can talk about types of improvisational behavior. The patterns were determined by the frequency of coincidence of scores (0-2) and their mutual consistency.

The jazz part of the sample is dominated by a coherent set of high values. In 9 out of 12 samples, a score of 2 was simultaneously recorded for the degree of freedom, work with the text and the improvisation function. This means that improvisation here is completely variable, transforms the source material and takes on the role of a framework that organizes the entire musical movement. All analyzed versions of *So What* [24], [25] fit precisely into this model: the theme quickly disappears as an independent unit, and the further course of events is determined by the musician's decisions.

Three more samples implement this model not fully: one of

the parameters is reduced to 1, while the other two remain at level 2. Usually this concerns the initial development of the theme, which sounds more defined before the extensive improvisation unfolds. The general form, however, still depends on the improvisational section. The fact that the configurations (2-2-2) and (2-2-1) are repeated indicates the systemic nature of jazz improvisation: even a partial deviation from one of the parameters does not destroy the overall picture.

The academic array demonstrates other combinations. In 6 out of 12 cases we have a set of (0-0-0) - a complete absence of improvisational changes, exact following of the musical notation. This is exactly how the performance of the Goldberg Variations [30] is constructed, where the interpretation does not assume any variability in either structure or material. In another 5 cases, the configuration (1-1-1) occurs, which indicates limited variability - ornamentation, barely noticeable rhythmic shifts that do not change either the functional purpose of the improvisation or the structure of the whole.

The only sample that falls out of this picture - the cadence from the Fifth Piano Concerto [27], [32] - gave the configuration (2-1-2). Here, improvisation acquires greater importance and partially influences the form, but this influence is localized in a separate segment, and such a combination is not repeated again, which emphasizes its sporadic nature.

Thus, the comparison of patterns expresses two distinct models. The first is integrated, where all parameters are closely interconnected and create a holistic system (this is the jazz tradition). The second is segmented, where the parameters act rather in isolation and do not form a single mechanism (academic tradition). These two types of organization of improvisational practices are empirically substantiated and open the way to further, more detailed typology.

It is worth noting separately the promising prospects of studying the interaction of improvisation with the latest technological environments - this would allow us to more fully outline its role in the transformations of modern performance. The results obtained are convincing: improvisation appears as a universal, but internally variable mechanism of musical interpretation, which not only connects different performing worlds, but also offers new opportunities for the development of musical practice in general.

## V. Conclusions

The conducted research concludes that improvisation functions as a systemic component of musical performance, taking different forms depending on the performing tradition in which it is developed. Based on a qualitative comparison of a sample of 24 units (12 jazz and academic samples), we identified three key parameters - the degree of freedom of the musician, the way of dealing with the musical text, and the function that improvisation takes on. It is this triad that made it possible to translate the interpretative process into a measurable plane on a scale of 0-2.

The distribution of quantitative assessments turned out to be unambiguous: the two groups significantly diverged in their profiles. The jazz sample almost entirely gravitates towards

the maximum values (2-2-2), which indicates the structure-creating mission of improvisation. The academic array, on the other hand, revolves around the configurations (0-0-0) and (1-1-1), which reflect the limited, text-subordinate nature of improvisational deviations.

Based on the identified recurring patterns, a typology emerged that encompasses three models of improvisation: structural (characterized by complete freedom and form-creating orientation), controlled (constrained by normative boundaries), and hybrid (where these two vectors are combined, reflecting the realities of contemporary performance). The resulting array of data supports the thesis about the universal nature of improvisation: it acts as a mechanism of musical interpretation, enabling variability and flexible adaptation to the performance situation. At the same time, a movement towards the rapprochement of the jazz and academic worlds has been recorded - primarily through the emergence of hybrid samples that signal changes in contemporary musical thinking itself.

In practical terms, the proposed system of criteria and typology can be used both in music pedagogy and directly in performance: the introduction of improvisational tasks into the educational process can develop the interpretative flexibility and creative independence of musicians. At the same time, limitations should not be overlooked. The analysis is interpretative in nature, so a certain level of subjectivity is inevitable here; the size of the sample does not allow for unconditional extension of the conclusions obtained to the entire spectrum of musical traditions. In addition, the work is limited mainly to the Western cultural area. Further research should be directed towards covering a wider range of cultural traditions and combining qualitative optics with quantitative methods - in particular, digital analysis of the musical signal - in order to clarify the outlined patterns and deepen the understanding of the role that improvisation plays in modern performance.

### Ethics Statement

This study is based solely on the analysis of publicly available scientific publications and aggregated industry data. No human participants, personal data, or confidential information were involved. All sources were selected and cited in accordance with academic integrity standards.

### Consent for Publication

Not applicable.

### Competing interests

The authors declare no competing interests.

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### Data Availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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