Expert improvisers in Western classical music: Perceptions, learning pathways and creative processes

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Aims. The research question of the present study is: "What are Western classical music improvisers' perceptions, learning pathways and creative processes?" To address this question, a threefold rationale has been developed: (1) describe how Western classical music expert improvisers perceive their practice; (2) map Western classical music improvisation learning pathways; and (3) identify and define the cognitive processes and strategies implemented by Western classical music experts, as well as the states they experience in the course of performance.

Method. Open-ended, semi-structured interviews have been conducted with (N=8) internationally recognized Western classical music expert improvisers. Expertise has been determined by peer recognition and professional performing/recording/teaching activity in Western classical music. After transcription, the interviews have been coded and analysed using *NVivo 10* software, with a mixed category approach.

Results. The participants perceived improvisation as a spiritual experience, situated at the core of their musical practice, which is ideally created collaboratively and *ex nihilo*. Furthermore, even though improvisation, interpretation and composition are often intricate activities, distinctions are clearly drawn for the participants. Two different types of learning pathways have been identified: *native improvisers* and *immigrant improvisers*. While in the former pathway improvisation was introduced at the very beginning of instrumental learning, in the latter pathway improvisation was learned after developing high-level of instrumental proficiency. Both these learning pathways led the participants to develop improvisational expertise. Thus, we hypothesize that expertise can be attained even when improvisation is introduced in later phases of musical development, as long as *know-how* and *know-what* are sufficient. Moreover, beyond knowledge and skills, expertise is also built on risk-taking and acceptance of the unexpected. Finally, the strategies implemented by Western classical music improvisers can be grouped into six categories: *motivic*, *pitch-oriented*, *real-time*, *rhythmical*, *structural* and *stylistic* and, from a broader perspective, the improvisational cognitive processes and strategies identified are either *transversal* or *language-specific*. On the one hand *transversal* cognitive processes and strategies could be implemented in any improvisational context; on the other hand Western classical music-*specific* cognitive processes and strategies are linked to the peculiar constraints of this language.

Keywords: Musical improvisation, expertise, perceptions, learning, creative process.

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Musical improvisation has been a central component of Western classical music for centuries; most Renaissance, Baroque, Classical and early-Romantic musicians possessed a relative degree of ability to improvise, compose and perform notated music (Moore, 1992).

However, from the second half of the 19th century, improvisation gradually vanished from Western classical music, as musicians' roles gradually separated and specialized. Many factors probably contributed to this phenomenon, importantly the ever-increasing technical difficulty of the repertoire and the similarly growing public expectations in terms of technical perfection (Berkowitz, 2009; Moore, 1992; Sloboda, 1996). However, in recent decades, musical improvisation is slowly coming back to life in Western art music performance practice.

While musical improvisation has been described as an "art neglected in scholarship" (Nettl & Russell, 1998, 1), such a statement is no longer valid (Solis & Nettl, 2009, 7-9). Indeed, researchers' interest in musical improvisation has burgeoned in the last few decades. However, even if empirical studies on jazz and "world" music have recently made significant breakthroughs, so far Western classical music received relatively little attention in comparison.

The present study aims to broaden the understanding of Western classical music improvisational expertise. Similar research, led by Norgaard (2008) in the field of jazz music, has already demonstrated its value *per se* and the relevancy of its pedagogical implications. The main objective of this research is to analyse musicians' developmental and generative processes, more precisely answering the following research question: "What are Western classical music improvisers' perceptions, learning pathways and creative processes?"

In order to address this broad question, a threefold rationale has been developed: (1) describe how Western classical music expert improvisers perceive their practice; (2) map Western classical music improvisation learning pathways; and (3) identify and define the cognitive processes and strategies implemented by Western classical music experts, as well as the states they experience in the course of performance.

Method

Open-ended, semi-structured interviews have been conducted with (N=8) internationally recognized Western classical music expert improvisers. Expertise has been determined by peer recognition and professional performing/recording/teaching activity in Western classical music. After transcription, the interviews have been coded and analysed using *NVivo 10* software, with a mixed category approach (L'Écuyer, 1987). An initial coding scheme had previously been developed from an in-depth literature review of musical improvisation by the author (Després & Dubé, in press).

Results

The participants' perceptions of musical improvisation have been expressed throughout the interviews with little, if any, prompting from the researcher. Improvisation learning was the first topic specifically addressed during the interviews. The following question served as an introduction to this topic: "How did improvisation enter your musical learning?". Subsequent discussion stemmed from the participants' answer. The cognitive processes, strategies and states that musicians implement and experience in the course of an improvised performance were the final subjects addressed during the interview. These themes were prompted by questions such as: "In what state do you find yourself when you improvise?" or "What specific strategies, tactics or 'tricks' do you implement in the course of improvisation?"

Perceptions – Rationale 1

Describe how Western classical music expert improvisers perceive their practice.

The participants interviewed perceive improvisation as a spiritual experience, situated at the core of their musical praxis. Furthermore, they believe that improvisation should ideally be created *ex nihilo* and form a collaborative product between them, other performing musicians and the audience. However, as inspiration cannot always be called up at will, possessing a "lifeline" – composed of motifs, digital patterns, harmonies, modulations, and so on – is a necessary condition of improvisational expertise development, which, in turn, contributes to the likelihood of the performer experiencing a *flow*-state in the course of the performance.

Finally, even though improvisation, interpretation and composition are often intricately intertwined activities (e.g. an improvisation might contain one or many pre-learned – therefore composed and interpreted – formulas) the distinctions between these practices are clearly drawn for the interviewed participants.

Versus interpretation. Even if some micro-structural components of an improvisation might be repeated from one time to another, its macro-structural constitution is unique. This characteristic distinguishes clearly improvisation from interpretation; even if subtle micro-structural components of an interpretation might (and will, inevitably) vary from one performance to another, its macro-structural construction will remain unchanged through time (save the musician's memory lapse). However, the musician's contact with his instrument is common to both improvisation and interpretation. In effect, a

sine qua non condition of expertise development in these practices is technical fluency, which is necessarily acquired through hours and hours of rehearsal.

Versus composition. Composition, *qua* improvisation, is a creation of original musical material. Nevertheless, as opposed to composition – which can be reworked indefinitely, in quest for a relative aesthetical "perfection" – improvisation is a unique temporal event. Therefore, risk-taking – and in it the probability of unexpected events and technical glitches – is conceived, by the expert improvisers interviewed, as a necessary condition of a "good improvisation". Finally, because improvisation is, by definition, a unique occurrence, any attempt to re-perform an improvised performance will alter its nature, turning it into an interpreted composition with an improvisatory feel.

Learning – Rationale 2

Map Western classical music improvisation learning pathways.

Two different types of improvisation learners have been identified: *native improvisers* and *immigrant improvisers*. While the former started to improvise from the very beginning of his instrumental training, the latter only initiated his improvisation learning after having reached a high-level of instrumental proficiency. *Native improvisers* started to improvise autonomously, "naturally" and without any conscious effort, in a playful manner. On the other hand, *immigrant improvisers* learned improvisation deliberately, with conscious effort and exterior guidance from a mentor and/or instructional methods. Overall, *native improvisers* tended to describe their improvisational practice by using terms related to leisure (e.g. "fun" "enjoyable" and "pleasant"). In contrast, immigrant improvisers tended to use expressions related to work, such as "labour", "clean", "select" and "get to the bottom".

Cognitive Processes, Strategies and States – Rationale 3

Identify and define the cognitive processes and the strategies implemented by Western classical music experts as well as the states they experience in the course of performance.

Aiming for a better comprehension of the participants' states and cognitive processes, the researcher asked them: "What's going on in your head in the course of performance?" He also questioned them about the specific strategies they use during improvisation.

Cognitive processes. Broadly speaking, cognition refers to the processes of perception, archiving, storage, organization and utilisation of information (Martinsen, Kaufmann, & Furnham, 2011). More specifically, Plucker, Runco, & Hegarty (2011) define cognitive processes as: "Actions taken by the human mind to process information." (p. 456).

While talking about "what's going on in their head" in the course of musical improvisation, the participants revealed their improvisational cognitive processes. Four different expert improvisers' cognitive processes have been identified: two were part of the initial coding scheme and two emerged from the participants' discourse. **Table 1** presents these cognitive processes and their respective definitions; emergent cognitive processes are in **bold**.

Cognitive processes	**Definition**
Anticipation	The musician plans forthcoming musical events (Kenny & Gellrich, 2002; Norgaard, 2011).
Memorisation	The musician stores information in his memory.
Execution	The musician transforms his musical ideas into sounds (Johansson, 2008; Kratus, 1995).
Selection	The musician filters through his ideas.

Table 1. Expert improvisers' cognitive processes.

Strategies. Strategies can be defined as "the series of procedures an individual uses to accomplish a cognitive task" (Lemaire & Fabre, 2005, p.2). Thus, as opposed to a cognitive process (which can either be conscious or unconscious), a strategy is, by definition, deliberate and conscious; it is a *means* elaborated in order to achieve an *end*. Furthermore, the realisation of a strategy generally implies the utilisation of multiple cognitive processes.

In the specific context of musical improvisation, strategies correspond to the means implemented by the musician to generate and select musical elements (form, harmony, notes, rhythm, timbre, etc.) of his improvisation. In sum, strategies are conscious, deliberate and goal-oriented.

Data analysis revealed 17 expert improvisers' strategies: seven of which were contained in the initial coding scheme and ten which emerged from participant discourse. **Table 2** presents these strategies and their respective definitions; emergent strategies are in **bold**.

Strategy	**Definition**
Alternating program	Planning the whole concert program, alternating between improvised and interpreted pieces/movements.
Chromatic approach	Using the chromatic scale to determine which notes to play.
Feedback	Reusing elements that have been played earlier in the course of improvisation (Kenny & Gellrich, 2002).
Hierarchical improvisation	Creating new musical ideas on the basis of melodic or harmonic elements of the piece on which one improvises (Clarke, 1988).
Hypermeter	Building the improvisation upon large-scale, structural phrasings.
Interrupt generation	Developing contrasting material in relation to what has just been played (Pressing, 1988).
Melodic priority	Thinking in terms of melodic contour to determine which notes to play (Norgaard, 2008).
Pastiche of a composer	Using musical elements inspired by a given composer.
Pastiche of a work	Using musical elements inspired by a given musical work.
Prosodic approach	Constructing an improvisation on the natural rhythm of the spoken voice.
Rhythmical freedom	Taking rhythmical freedom while keeping a steady pulse interiorly.
Sketch planning	Determining, before starting to play, the general characteristics of the improvisation (Hargreaves & al., 1991).
"In the moment" tactic	Focusing the attention on the present or immediate future (1-2 seconds) in order to be "in the moment".
Timbre/texture priority	Thinking in terms of timbre or texture.
Tonal approach	Building the improvisation around its tonal axis (e.g. using a tonal centre or superimposing two different tonalities).
Using "errors" creatively	Using creatively an unexpected event (Csikszentmihalyi et Rich, 1997).
Using the idea bank	Using formulas stored in long-term memory (Norgaard, 2008).

Table 2. Expert improvisers' improvisational strategies.

Using "errors" creatively is the strategy that was mentioned by the most participants (N=4). *Hierarchical improvisation* and *feedback* came next (N=3).

States. A state corresponds to the lived experience of the musician. A state is a condition lasting for a given time period that encompasses and partly determines the musician's mental activity (cognitive processes and strategies).

What is going on in the musician's head in the course of improvisation? Vacuity – a state that can be related to Csikszentmihalyi's (1997) notion of *flow* experience – appears to be the optimal condition during improvisation: "The best thing is that nothing happens" (Sophie[1]). How does one feel in that *flow* state? Philippe answered:

"One is in another space-time. When I play a note, it is as if I opened a wall. I go through it and I don't know where I am. When I'm done, I come out through the wall. I don't know what I just did."

When the researcher asked Daniel the key to attain *flow* in every concert, he answered in a poetical fashion, evoking Philippe's previous words: "Well, the body must be as wide as the room and as moving as the music. Because we are no longer the body." These two latter participants (Philippe and Daniel) claimed to be in a constant *flow* state during their concerts.

For others, *flow* cannot always be reached in the course of improvisation. When asked: "What's going on in your head in the course of performance?" Isaac answers:

"It changes according to the mood of the concert, according to the "Je ne sais quoi". Moreover, in these words "Je ne sais quoi" there is, I think, this mysterious but important mix of one's instinct with one's know-how. One's instinct reacts differently depending on one's state of mind, one's emotional state, one's contact with the audience – whether it is a warm or a cold

contact – and how we feel in real-time, in this lived time."

For him, there is a dynamic interaction between instinct (flow) and know-how (knowledge and skills) which depends on multiple factors (i.e. the "mood of the concert").

But how do one's instinct and one's *savoir-faire* interact with each other? Isaac continues:

"It depends, it depends on the day, it depends on my state. When I'm not in very good condition, from the point of view of inspiration, from the point of view of freedom […] I base myself more on my know-how. It is in my best concerts that I rely less [on it] … that I'm less conscious. And it is a state of uncertainty; it is a state between two worlds, between control and letting go."

Here, the **mood of the musician** is perceived as strongly correlated to his chance of experiencing *flow*.

The interaction between an instinctive and a rational state was a recurring theme throughout the interviews and there appears to be consensus among all participants that a *flow*-instilled performance is a better performance. **Table 3** presents the two states as revealed in data analysis.

States	Instinctive (Flow)	The musician's attention is entirely focused on the moment, while he improvises in a quasi-automatic fashion.
	Rational	The musician's develops its improvisation consciously and deliberately, using declarative knowledge.

Table 3. Expert improvisers' improvisational states.

Discussion

Perceptions

Know-how and *know-what* are determinant conditions of improvisational expertise. However, the interviewed participants revealed something beyond knowledge and skills: a meditative space where the unexpected is accepted and where fears are transfigured into a witness facing the unknown. Their words echo the *litany against fear* found in Frank Hebert's (1965) famous novel Dune:

"I must not fear. Fear is the mind-killer. Fear is the little-death that brings total obliteration. I will face my fear. I will permit it to pass over me and through me. And when it has gone past I will turn the inner eye to see its path. ***Where the fear has gone there will be nothing. Only I will remain."*** (Bolding mine)

Secondly, the complex debate about the distinctions and similarities between improvisation, interpretation and composition[2] continues. Still, according to the musicians interviewed, they are fundamentally distinct musical practices: because improvisation leads them to encounter the unexpected and the "other" (i.e. musicians and the public) they perceive that improvisation holds a greater transformative potential for them and involves them more profoundly then interpretation or composition.

Learning

Because *native improvisers* and *immigrant improvisers* have both developed high-level of improvisational achievement, we hypothesize that expertise can be achieved even when improvisation is introduced in later phases of musical development. However, early improvisational experiences do foster musicians' self-efficacy perception and facilitate the process of expertise development.

States, Cognitive Processes and Strategies

Musicians seem to consider the development of extensive *know-how* and *know-what* to be simultaneously: (1) a necessary condition for *flow* to be experienced and (2) a "safety net" on which to rely if for some reason *flow* does not occur in the course of a given performance. There is a peculiar link between improvisation learning and improvisers' states in the course of performance: that is, "the more you learn, the less you think".

Strategies. The strategies implemented by Western classical music improvisers can be grouped into six categories: motivic, pitch-oriented, real-time, rhythmical, structural and stylistic (Table 4). These categories are not hermetic (e.g. motivic strategies have

consequences on pitches and rhythmical elements) but they outline the focus of musicians' attention while they use each strategy.

Motivic strategies focus on short and recurrent musical utterances and their permutations. The main function of *pitch-oriented* strategies is to define the actual notes to be played. *Real-time* strategies are used to deal with the extemporaneous nature of improvisation and its subsequent risk-taking and unexpectedness. *Rhythmical* strategies highlight the temporal placement of the notes that are to be played. *Structural* strategies are used to determine the formal construction of the improvisation. Finally, *stylistic* strategies define the global musical language of the improvisation.

Categories	**Strategies**
Motivic	Using the idea bank
	Hierarchical improvisation
Pitch oriented	Tonal approach
	Melodic priority
	Chromatic approach
Real-time	*"In the moment" tactic*
	Using "errors" creatively
Rhythmical	Rhythmical freedom
	Prosodic approach
	Hypermeter
Structural	Sketch planning
	Feedback
	Interrupt generation
	Alternating program
Stylistic	Timbre/texture priority
	Pastiche of a composer
	Pastiche of a work

Table 4. Categories of Western art music improvisational strategies.

Two (out of four) cognitive processes and seven (out of 17) strategies we identified through data analysis have also been found in previous theoretical or empirical work on musical improvisation. The remaining cognitive processes and strategies we inventoried are not echoed in the literature. Explanations as to why these cognitive processes and strategies have not been documented can be only hypothetical at this point. However, the nature of Western classical music improvisation may explain these differences.

As an example, we will discuss the particular case of *harmonic priority* strategy. *Harmonic priority* has been identified in Norgaard's (2008, 2011) study as the main strategy implemented by experts jazz improvisers. However, this strategy was not mentioned by any of the improvisers we interviewed; musical language differences may explain this omission. Indeed, the most common praxis in jazz band improvisation is to "take turns", improvising over pre-established (and commonly agreed-upon) chord sequences. Such a practice is rarely found in Western classical music improvisation. Hence, in jazz, the structure of the improvisation is pre-determined, while in many instances (excluding namely ornamentation and thorough-bass realization) the structure of Western classical music improvisation itself is improvised.

Thus it is arguable that there are two broad types of cognitive processes and strategies: *transversal* and *language-specific*. A number of the Western classical music improvisation-specific strategies identified (i.e. *alternating program*, *hypermeter*, *pastiche of a composer*, *pastiche of a work*, *tonal approach*) may allow the musician to ensure the coherence of his improvisation on a level that, in jazz, is already granted by the pre-defined harmonic and rhythmic structures of the piece.

States. The dialectic between "instinct" and "savoir-faire" has previously been documented by Berkowitz (2009) in his research on classical period improvisation. Following his work, the present research supports the point of view that *flow* is transversal to all improvised music.

Conclusion

As observed by Berliner (1994) in his in-depth research on jazz improvisation, musicians are not "picking notes out of thin air" (p.1). Likewise, Western classical musicians have named and described numerous strategies they use in order to develop their improvisation. These strategies range from short-term, tactical approach to concert-long planning. The strategies identified and defined could be used as an empirical foundation for elaborating and improving Western classical music pedagogical practices. Consequently, through

a better understanding of experts' behaviour and mental activity, efficiency of instructional methods can be optimized.

Implications for music education

Although the participants perceived improvisation as a core component of their musical praxis, it forms a merely peripheral component of Western classical music pedagogy. Subsequently, this research supports the numerous advocates of improvisation (re)introduction in Western classical pedagogy (Azzara, 2002; Kenny & Gellrich, 2002; McPherson, 1993; Wilson, 1970, *inter alios*). In doing so, teachers should work on developing in learners strategies akin to those used by experts, starting with in-the-moment strategies, and gradually tending towards longer-term structural planning. Since the creative use of "errors" is an important strategy for Western classical improvisers, it deserves special attention from the music educator. Creating a context favourable to the occurrence of unexpected events (e.g. improvising in unusual meters/tonalities; or trying to modulate suddenly in a remote tonality) may foster the learner's self-confidence, especially when attempts are valued over results.

Limitations

The main limitations of this study are related to its data collection method. *Self-reporting methods* may come under various biases, both conscious and unconscious. Indeed, self-reporting participants may involuntarily forget or modify past events, they also may voluntarily omit certain details of their narrative, for social desirability or other reasons. Nonetheless, the in-depth perspective of experts in Western classical musical improvisation provided by our research data validates our exploratory methodological choice.

Further research

Further research would benefit from a direct focus on expert improvisers' behaviour. Both rehearsing and performance practices should be documented using verbal protocol methods so that the participants' self-descriptions can be compared to their actual behaviour.

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[1] All participants' names are fictional in order to ensure their anonymity.

[2] See Lehmann, Sloboda, & Woody (2007) and Thompson & Lehmann (2004) contributions to this discussion.