Choose your own adventure: Vocal jazz improvisation, conceptual metaphor, and cognitive embodiment

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Abstract

Creativity in the form of musical improvisation has received growing attention from researchers informed by the literature on embodiment. To date, this research has focused on the embodied experiences of improvising instrumentalists rather than those of improvising singers. This article investigates the experience of embodiment during improvisation through a systematic analysis of the metaphorical language used by an artist-level jazz singer in her reflections on practice. Extensive interview data with the participant were analyzed to identify and reconstruct metaphorical expressions into conceptual metaphors. In this process, the metaphor of IMPROVISATION IS AN ADVENTURE was identified as the overarching conceptual structure that the participant used to make sense of her experiences of improvisation. This metaphor and its mappings illuminate the cognitively embodied dimension of vocal jazz improvisation. These findings will be of interest to jazz singers and vocal jazz educators who are encouraged to explore more fully the role of the body–mind's interactions with its environment in order to establish expertise in improvisational ways of knowing. This research illuminates the multidimensional nature of an expert singer's experiences of improvisation and is presented as a provocation for future research to include singers as participants when investigating musical improvisation and cognitive embodiment.

Over the past two decades, much scholarly attention has been paid to the embodied practice of improvising instrumentalists, as evident in the number of studies that examine this practice through the lenses of embodied, situated, and enactive cognition (e.g., Iyer, 2002, 2004a, 2004b, 2016), and 4E cognition and dynamical systems theory (e.g., van der Schyff et al., 2018; Walton et al., 2015). However, investigations of improvised *singing* as cognitively embodied are largely absent from this literature. While there have been isolated reports on the gestural, embodied elements of sung performance (e.g., Davidson, 2001), the focus on instrumentalists in studies on cognitive embodiment in improvised music is indeed curious;

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singers are arguably the most obvious example of embodiment in music performance, whereby the biological context for cognition and the phenomenological dimensions (the body as a lived, experiential structure) are most apparent (Clayton & Leante, 2013). The singer's instrument is the body; therefore, improvised singing is, at the very least, a literally embodied musical activity.

Within music performance research, the case for the value of phenomenological inquiries into the experiences of artist-level performers ($N = 1$) is outlined by Holmes and Holmes (2013) who contend that elite participants can provide vivid insight into the relationships between performers' sense of artistry, their embodied experience of music, and their "inner world" (p. 77). Holmes and Holmes argue that if subjective experience is an important and irreducible determinant of music performance, then one aim of performance research must be to get closer to the subjective experience of a particular performer. One suggested method for obtaining such insights is through the analysis of metaphor as it is both conceptualized and reported by performers (Holmes & Holmes, 2013). For Clayton and Leante (2013), embodied metaphor is closely linked to music's affect and subsequently forms—to the extent that it is possible to put this knowledge into words—"an essential part of explicit knowledge about music" (p. 202). Walker (2000), too, describes metaphors of practice as "covert representations of the physical experience of music" (p. 34), while for Peltola and Saresma (2014), although more concerned with the listening experience, metaphor is "a vehicle of communication" (p. 293) for an experience that "typically escapes the grasp of non-metaphorical language" (Zbikowski, 2008, as cited in Peltola & Saresma, 2014, p. 293). In other words, metaphor is an attempt to derive meaning from, or make sense of, the affective experience of music and the embodied dimension of music performance.

This article explores metaphor's potential to offer insights into the embodied experience of vocal jazz improvisation from the perspective of an expert or "artist-level" improviser (Norgaard, 2011, p. 109). The current research emerged from a previous phenomenological study (Forbes, 2021), which established that expert jazz singers experience a state of *flow* (Csikszentmihalyi, 1975, 2002) during improvisation. An intriguing by-product of this initial study was that one participant used metaphorical expressions extensively (and ostensibly unconsciously) to describe the experience of improvising. Since studies of improvising singers are underrepresented in research about embodied musical activity, this singer's extensive use of metaphor warranted further investigation (for similar impetus for a follow-up study, see, for example, Shinebourne & Smith, 2010).

Cognitive embodiment and the embodied grounding of language and music

This section provides the theoretical background for the current study by considering theories of cognition, the embodiment of language and conceptual metaphor, and musical improvisation. Johnson (1997) hypothesizes that "the very same patterns of bodily perception, activity, and feeling that structure our musical experience also structure our conceptualization of it" (p. 95). He notes that research on the embodiment of linguistic meaning can inform our understanding of musical meaning and experience: "[s]tructures of our felt musical experience underlie our conceptual systems and thus shape the language we use to describe and theorize about music" (p. 95). Here, we outline theoretical ideas that inform our conceptualization of embodiment as "the body as semantic engine" (Gallagher, 2011, p. 62), in which metaphor is the bridge between embodied (musical) experience and conceptual thought.

Over the past three decades, classical cognitivism or, at the risk of oversimplification, cognition as computation, has been increasingly challenged across several disciplines by theories which view the body as playing a constitutive role in human cognition. Johnson (2018) describes the turn in thinking on cognition as based on the idea that "our bodies impose the very conditions of our experience, thinking, and communicating with others" (p. 626). The term *embodied cognition* has recently given way to *4E cognition*, a gestalt theory in which cognition is multi-dimensional—it is not only *embodied* but also *embedded*, *enactive*, and *extended* (Menary, 2010; van der Schyff et al., 2018). These dimensions, while separate in theory, overlap conceptually, and exist in dynamic relationships with each other. Each "E" views the body coupled with, variously, the brain (embodied), the environment (embedded), action (enactive), and even other objects within the environment (extended). Johnson (2018) proposes up to seven Es with the addition of cognition as *emotional, evolutionary*, and *exaptative*. There is no consensus within the literature, however, as to what each E represents in theories of 4E or 7E cognition (Gallagher, 2011). This heterogeneity makes both theories difficult to apply as holistic lenses through which to explicate specific examples of human behavior such as vocal improvisation. Rather, these approaches sit along a continuum of embodiment, ranging from minimal through to radical embodiment, and depart from, or adhere to, in varying degrees, Cartesian mind–body duality and representationalism. Here, and as will be further discussed below, we agree with and adapt Gallagher's (2011) conclusion that "embodied approaches to cognition are not brainless; the proper explanatory unit is brain-body-environment rather than the body (understood literally)" (p. 67).

Alongside the turn in the cognitive sciences toward embodiment broadly conceived, theories of language that view language as cognitively embodied have also emerged. In *Metaphors We Live By*, Lakoff and Johnson (1980) theorize that our "conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature" (p. 3). Furthermore, the pair argue that "language is an important source of evidence for what that [conceptual] system is like" (Lakoff & Johnson, 1980, p. 3; see later Johnson, 1987, 2010). In other words, metaphor is not simply a decorative accessory, or an ornamental device designed to exaggerate or embellish, but rather a conceptual tool for structuring and restructuring our everyday reality. As Schmitt (2005) observes, extending Lakoff and Johnson's work, metaphor "enables the reconstruction of cognitive strategies of action" (p. 359), revealing that we tend to think and act, both individually and collectively, in "metaphorical patterns" (p. 360). Since conceptual metaphor always involves a cognitive process of understanding one thing in terms of another, metaphor represents a participant's attempt to articulate ideas or experiences that are intangible or inaccessible, or at the very least, difficult to conceptualize. As Sallie McFague (1987) explains in her work on conceptual modeling, "Metaphor is a strategy of desperation, not decoration; it is an attempt to say something about the familiar in terms of the unfamiliar, an attempt to speak about what we do not know in terms of what we do" (p. 33). Since the publication of Lakoff and Johnson's foundational work in 1980, conceptual metaphor theory (CMT) has used empirical evidence to demonstrate that while metaphor and grammar are closely connected, metaphor use is in fact grounded in embodied experience (for discussion of empirical studies, see Fincher-Kiefer, 2019; Gibbs, 2011; Gibbs et al., 2004). As Kövecses (2020) explains, using a metaphor of his own, "Metaphor and grammar cross-fertilize each other" (p. 9).

Linguistically, metaphors consist of two domains: the source domain, which is typically concrete, and the target domain, which is more abstract (Kövecses, 2017a, 2017b, 2020). For example, in the conceptual metaphor LOVE IS A JOURNEY, the abstract and complex domain of LOVE (that is, the target domain) is understood through the more concrete domain of JOURNEY (that is, the source domain). Similarly, in the metaphor LOVE IS BLIND, a correspondence is

created between two seemingly different phenomena: LOVE (the target domain), which we might understand as an intense feeling of care and affection, and BLINDNESS (the source domain), which refers to the state or condition of being visually impaired. The product of this correspondence, which occurs, again, through the cognitive processing of *one thing* in terms of *another*, is a conceptual pattern in which the direct comparison of two different things results in a new understanding (in this case, the understanding that a person in love cannot see faults or imperfections in the subject of their affection). In both instances—LOVE IS A JOURNEY and LOVE IS BLIND—the conceptual mapping that occurs moves in the same direction, from more tangible conceptualisations (the concrete domains of JOURNEY and BLINDNESS) to a less tangible idea (here, the abstract domain of LOVE). The metaphor, LOVE IS A JOURNEY, consists of a fixed set of ontological correspondences between entities in the source domain and entities in the target domain (the lovers are travelers; their relationship is a functional or nonfunctional vehicle; their common goals are destinations they must reach). Therefore, metaphor involves both conceptual mappings and metaphorical expressions; however, the cross-domain mapping is primary, and the language is of secondary importance (Lakoff, 1992, 2006) In other words, the metaphors above are more than mere linguistic expressions because the locus of metaphor is not in language but in thought. As Lakoff (2006) makes clear, conceptual metaphors are "not just a matter of language, but of thought and reason" (p. 192).

In this way, CMT highlights the pervasiveness of our understanding of complex domains through the more readily accessible domains of physical or sensory experience. For example, the conceptual metaphor LOVE IS FIRE creates a set of correspondences that map the ontology of fire onto the ontology of love. In this case, fire is love; the thing on fire is the person in love; and the intensity of the fire is the intensity of love. Through metaphorical inference (Johnson, 2018; Kövecses, 2020), we can derive further knowledge about the target domain (that is, LOVE) by drawing on our knowledge of the source domain (that is, FIRE) to conclude, for example, that love, like fire, can fizzle out. It is this pointing toward nature of metaphor that is of particular interest in this article and within CMT research more generally. As Kövecses (2020) explains,

> The main aim of CMT is to analyze and describe the conceptual nature of metaphor: how conceptual metaphors structure thought, how they enable inferences, how they can give us new perspectives on reality, how they can construct new ideas and concepts, how they are grounded in experience, and so on. (p. 9)

Therefore, when seeking to explore the embodied nature of improvised musical performance, CMT is useful not just because of its emphasis on the rhetorical or evocative power of metaphor but because of what it can tell us about the nature of thought and the way that cognitive patterns are intrinsically bound to our bodily orientations and our interactions with the environment (Johnson, 1987, 2018). As Johnson (2018) observes,

> Given the nature of our bodies [how and what we perceive, how we move, what we value] and the general dimensions of our surroundings [stable structures in our environment], we will experience regular occurring patterns [such as up-down, right-left, front-back, containment, iteration, balance, loss of balance, source-path-goal, forced motion, locomotion etc.] that afford us possibilities for meaningful interaction with our surroundings, both physical and social. (p. 628)

These essential conceptual structures or image schemas—"our first guides in conceptualizing experience" (Kövecses, 2017b, p. 340)—are embodied, grounded as they are in our sensorimotor perception and emotional response (Damasio, 2012; Johnson, 2018). In this respect, Johnson's (2018) theory of the embodiment of language, which builds partly on Gibson's

(1979) work on affordances, provides a useful lens for exploring the embodied nature of the singer's experiences of improvisation.

According to Johnson (2018, p. 626), drawing on Gibson (1979), conceptual meaning depends on, and emerges from, complex organism–environment interactions in which "our bodies impose the very conditions of our experience." These complex physical and interpersonal interactions are exapted for abstract conceptualization (and reasoning) in the form of conceptual metaphor, which employs body-based meaning to make sense of a situation. This meaning-making process is enacted through image-schematic affordances that form "intrinsically meaningful patterns" of thought (Johnson, 2018, p. 628) to imbue our experience with meaning. For example, our earliest encounters with moving objects, including our own experiences of spatiality and movement, generate a motion schema that makes the JOURNEY domain meaningful (Johnson, 2018; Kövecses, 2020). In turn, our knowledge of the JOURNEY can be mapped onto different target domains (CAREER, INFERTILITY, CANCER, etc.) to create, as discussed above, a fixed pattern of conceptual correspondences that allows us to understand, and infer knowledge about, the target domain. Therefore, the notion of "affordances" (Gibson, 1979), in its simplest terms, refers to the possibilities for action "that are specified *relationally*" by the environment (Krueger, 2014, p. 2; emphasis in original), the structural features housed within it, as well as the "repertoire of sensorimotor capacities the perceiver employs to detect and respond to these structural features" (p. 2). In other words, different people will perceive different affordances (or possibilities for interaction) within any given environment. Like Krueger (2014), what we are concerned with in this article is the phenomenology of the singer's responsiveness to the affordances of her environment when improvising with other musicians, as captured through metaphorical language, in her reflections on practice. Johnson's (2018) theory of embodiment of language (p. 626) suggests that Gibson's (1979) "affordances" offer an expansive conception of meaning beyond conceptual or propositional accounts. Importantly for current purposes, Johnson (2018, p. 627) argues that conceiving meaning in this embodied or experiential way enables us to unearth "the richness of body-based meaning" in artistic practices such as music-making.

In contrast to theories of cognitive embodiment and theories of the embodiment of spoken language, musical improvisation—itself a form of language—has traditionally been theorized by "describing the organization of cognitive structures" during the improvisation process (Walton et al., 2015, p. 2). For example, Pressing's (1988) theory of improvisation focuses on how jazz musicians "overcome the limitations of their information-processing capacities" to create coherent musical expression from limitless permutations and combinations (Walton et al., 2015, p. 2). Pressing theorized jazz improvisation as cognitively constrained by the knowledge base that is formed by the internalization of idiomatic source materials, as well as by performance-specific referents such as song form, harmonic structure, and rhythms (see also Berkowitz, 2010; Kenny & Gellrich, 2002). Other theories of idea generation in jazz have been expounded by Clarke (1988) and Johnson-Laird (2002) (see Hargreaves, 2012, for a brief review of these theories). These theories view cognition during musical improvisation as representational and ascribe prominence to the role of the brain as an information processor. This privileging of the brain as a processing machine is replicated in much jazz education, including vocal jazz education research, which emphasizes building the conceptual knowledge base via the "inputting" of information for idea generation (Berkman, 2009, p. ii; Weir, 2005, p. 28). For present purposes, and in light of Johnson's (2018) theory of the embodiment of language in which Gibson's affordances are central to conceptions of both embodiment and meaning-making, our adoption of the term *embodiment* is most closely aligned with *embodied semantics*, as originally conceptualized by Lakoff and Johnson. According to this view, mental

representations have—arguably—a minor role to play in cognition but do not occupy as prominent a position as they do in traditional theories of cognition during improvisation.

Within music perception and cognition research, Iyer's work during the 2000s was the first to draw on embodied cognitive science in the context of musics that fall outside the Western tonal system (for example, African-American musics such as jazz). Iyer argued that these musics have privileged the body by assigning the corporeal component of performance a far more prominent role in music-making than has traditionally been the case in Western art music (Iyer, 2002, 2004a, 2004b, 2016; see also Bowman, 2004). Iyer (2004b) suggests that within these musics:

> [m]usical meaning . . . is also *embodied* in improvisatory techniques. Musicians tell their stories, but not in the traditional linear narrative sense; an *exploded narrative* is conveyed through a holistic musical personality or *attitude.* This attitude is conveyed both musically, through the skillful, individualistic, improvisatory manipulation of expressive parameters in combination, as well as *extramusically*, in the sense that these sonic symbols "point" to a certain physical, social, and cultural comportment; a certain way of being embodied. (pp. 401–402)

In musics such as improvised jazz, the skilful manipulation of expressive parameters does not occur in a "brain in a vat" (Harman, 1973, p. 5) but through a complex interaction of body, mind, and environment. Iyer's "certain way of being embodied" invites an exploration of how these ideas might manifest in the experiences of an artist-level improvising singer.

Metaphors and qualitative research

More recent work in CMT has moved beyond the two-domain (target-source) account proposed by Lakoff and Johnson (1980) to establish increasingly complex frameworks. Kövecses' (2017b) multi-level view of conceptual metaphor proposes at least four different representational formats for modeling the conceptual background of metaphorical meaning: image schemas, domains, frames, and mental spaces. While Kövecses' (2017b) model provides a comprehensive framework for understanding the different levels of schematicity that conceptual metaphors occupy, Kövecses himself acknowledges that "different methodologies are necessary to study the different levels of metaphor" (p. 345). Given that "the question of methodology has haunted metaphor researchers for a long time" (p. 345), and since there is still disagreement among CMT practitioners as to which theoretical constructs are most important, we have adopted the two-domain framework to avoid further theoretical and terminological confusion. In doing so, we have employed Schmitt's (2005) method of systematic metaphor analysis to exploit the foundational ideas of CMT, while simultaneously extending the application of Lakoff and Johnson's work beyond the field of cognitive linguistics.

Systematic metaphor analysis, as proposed by Schmitt (2005), is a method of qualitative research that "attempts to reconstruct models of thought, language, and action" through the study of metaphorical patterns in the way we think, speak, and act (Schmitt, 2005, p. 368), with a focus on the "unconscious metaphors of daily language" (p. 366). Schmitt outlines the key ideas of CMT that inform this method of analysis: the construction of overarching metaphorical concepts from specific examples of metaphorical language; the identification of the ways in which physical experience is used as a *gestalt* to capture complex phenomena; and the linking of thematically similar metaphors within a particular domain (p. 366). To capture rather than reduce the complexity of metaphor, Schmitt also reiterates the importance of reading and interpreting metaphorical descriptions in context, especially when metaphors are assigned political or ideological

functions but also because the evaluative process inevitably requires the documentation of reflective subjectivity. Thus, for Schmitt, the question that drives this method of analysis is: "which interpretive conclusions does systematic metaphor analysis permit and how is the interpreting subject involved in reaching these conclusions?" (p. 375). Other CMT researchers outline concerns with the subjectivity of metaphor analysis and propose methods for triangulating findings such as member checking or thematic analysis of field observations (Armstrong et al., 2011). Here, we argue that in a phenomenological study such as the present one, the researchers' subjectivity, reflexively applied, provides a novel opportunity for the illumination of experience via metaphor analysis. The limitations of this approach are discussed in the conclusion. Adapted for this context, then, Schmitt's propelling question might be reframed as: how can a systematic analysis of a singer's metaphors, both as they are conceptualized and reported, and interpreted by researchers with expertise in improvised singing and applied linguistics, provide insight into the experience of the complex phenomenon of vocal improvisation?

Schmitt's (2005) procedure for systematic metaphor analysis (discussed in more detail in the Method and Material section) requires an initial "unsystematic, broad-based collection of background metaphors" (p. 370) that are relevant to the topic of investigation. In performance research, the following examples of metaphorical conceptualization provide some "cultural scope" for the systematic analysis of the metaphorical language used by the participant in this study (p. 370). In Hytönen-Ng's (2013) phenomenological study of flow experiences in jazz improvisation, jazz musicians speak of "throwing" or "plunging" themselves into the act of improvisation, two metaphors of movement that are based on the motion schema (Kövecses, 2017b). Similarly, Sudnow (2001) describes his early efforts at jazz piano improvisation as akin to being "on a bucking bronco of [his] own body's doings" (p. 33). The classical improvising pianist Robert Levin uses mixed metaphors to describe the moment of improvisation; for Levin, improvising is a "high wire act" that necessitates "living on the edge"; improvisation is like "going down the bobsled" since one must respond to abrupt turns or "curves" as they present, while "letting go" when improvising requires a delicate balance of conscious and unconscious processing (Berkowitz, 2010). Conceptually, these metaphorical expressions demonstrate that artist-level improvisers understand the complex experience of improvisation (the target domain) in terms of physical or bodily movement and spatial orientation (the source domains). Identifying and interpreting the metaphorical expressions employed by an artist-level jazz singer and reconstructing these expressions conceptually contributes new knowledge to the study of music, improvisation, and embodiment.

Method and material

Extensive interview data were collected for the original phenomenological study which explored jazz singers' experiences of improvisation (Forbes, 2021). Two semi-structured interviews were conducted with the participant (whose first language is English) over two separate days in April 2019. At the time of interview, the participant was a 38-year-old female who had been singing jazz for over 20 years. An accomplished musician, she had released 20 recordings as both a lead and featured artist and won numerous prestigious national and international music awards. Today, she maintains an international profile as a singer and teaches jazz voice at a leading conservatory in Europe. Human ethics approval was granted for this research, and the participant was advised that a pseudonym would be used in the reporting of findings.

The interviews with the participant were based on Seidman's (2006) phenomenological interview model and designed to explore in-depth the singer's experiences of improvisation (see Appendix 1 for the interview protocol). The interviews were recorded and transcribed by the first author, yielding approximately 30,000 words of transcript. These interviews were

identified as containing metaphorical expressions that were treated as surface manifestations of underlying conceptual relationships (Ritchie, 2006). Given the underrepresentation of research into the experience of the individual performer, and the limited number of studies that pay attention to the way that metaphor might provide deeper insight into the embodied experience of music improvisation, the preliminary material warranted secondary analysis to elicit "additional insights and a richer picture" of the performer's experience (Shinebourne & Smith, 2010, p. 59).

Upon completion of the preparatory step recommended by Schmitt (2005) (i.e., the broad-based collection of metaphorical language used by improvising instrumentalists), analysis of the interview data commenced. The systematic analysis occurred in two stages, as outlined by Schmitt (2005):

1. Identification of metaphors

The first stage involved the identification of any metaphorical expressions employed by the singer during the interview. A word or phrase was considered metaphorical if the answer to the following three questions was in the affirmative:

a) Can the word or phrase be understood beyond its literal meaning?
b) Is the source domain of the word or phrase a sensoric or cultural experience?
c) Is the source domain mapped onto a target domain?

Once the metaphorical expressions were identified, they were extracted from the text. The interview transcript was then scanned again, and the above process was repeated until only non-metaphorical content, or metaphorical content unrelated to improvisation, remained (Schmitt, 2005, p. 372).

2. Synthesis of collective metaphorical models

The second step involved allocating individual metaphorical expressions to overarching metaphorical concepts (Schmitt, 2005, p. 373). For the current purposes, this process of synthesization involved grouping metaphors conceptually under the heading IMPROVISATION [target domain] IS [SOURCE DOMAIN]. This process was repeated until all metaphorical expressions were allocated to a conceptual grouping.

While this process of reconstruction is open to subjective interpretation, we followed Schmitt's (2005) proposition that "individual metaphorical idioms do not occur by chance, but as a rule can be traced back to a small number of common concepts" (p. 372) and that conceptual models, as the frameworks of collective thought, have already been identified in their basic form (p. 369). We also sought to limit bias by using two coders to categorize and review the data. The first author, a music educator, researcher, and jazz singer, conducted Steps 1 and 2. The second author, a writer trained in applied linguistics, contributed to the identification and interpretation of the metaphors and cross-referenced the first author's classification of the identified metaphors into conceptual domains.

Findings and discussion

Through the systematic analysis described in the preceding section, the singer's metaphorical descriptions of improvisation were identified as constitutive of the conceptual metaphor,

IMPROVISATION IS AN ADVENTURE. The improvisation as adventure metaphor was mapped as follows:

- The improvising singer is the adventurer or explorer.
- The conceptual knowledge base corresponds to the adventurer's map.
- The other musicians are members of the expedition party.
- Acts of musical creation correspond to physical actions and reactions.

In the following sections, we discuss the metaphorical expressions used by the participant, and what these might allow us to infer about the embodied experience of improvisation.

Improvisation is an adventure

The word "adventure" is defined by the *Oxford Dictionary* as "an unusual, exciting, or dangerous experience, journey, or series of events." In light of this definition, many of the singer's metaphorical expressions of improvisation evoke the concept of adventure or draw on adventure-related operations such as following (or ignoring) directions, discarding maps or set itineraries, and becoming physically lost. In this sense, the singer imagines herself as a transgressive explorer who strays from linear pathways to a more colorful vista of playfulness and misrule. In fact, her suggestion that improvisation is "like choose your own adventure" is particularly interesting, given that Edward Packard's (ca. 1979–1998) children's books of the same name are well-known examples of rhizomatic texts that are interactive and interconnected. At any given point in time, one or more of the adventurer's exploits (flying, swinging, diving etc.) may clash or collide, opening up the possibility for a variety of plot threads, bridging segments, and alternative endings. In the same way, the process of improvisation is governed by principles of connection and heterogeneity, both of which allow the singer to move beyond linearity to points of overlap and convergence. As the singer explains, "You can shut the joy down when you make a mistake, or you can just choose to go to page 27 and keep the story going." In this way, the adventure is experienced not as a linear movement from Point A to Point B, but rather as a rhizomatic multiplicity, what Krauth (2006) describes as "a sort of zapping, synaptic, unstoppable, interconnected, interlayered system of planes" (p. 193).

At every juncture, the singer's decision-making is informed by calculated risk-taking. When discussing the importance of "celebrating mistakes" rather than "berating [one's self] on stage," the singer explains:

> It's how you resolve it. It's how you get out of it. It's like you turned down this street that you shouldn't have turned down, but you're not just going to go and crash the car into a tree, you're gonna [be] like, "Oh, well, let's have a look what's down here," or it's a dead end, so we'll have to go back. But now, oh my gosh, this is a one-way street. So we can't . . . Okay, so now we're a bit further away, but we've got cool music and good company . . . it's helped me change my perspective around it [improvisation] being . . . a bit all or nothing . . . I started going well, you know, no one's lost a limb.

To capitalize on the affordances provided by the environment, the singer maintains an adventurous sense of curiosity in the face of the unexpected ("oh, well, let's have a look what's down here") as well as a willingness to re-route ("it's a dead end, so we'll have to go back"; "this is a one-way street"). The singer's ability to reorientate and renavigate herself when confronted with obstacles and challenges posed by the environment (a musical "dead end," for example) provides a sense of comfort and perspective ("no one's lost a limb"). There is joy in the unknown,

a willingness to embrace risks as exciting opportunities for new ventures. Like all good adventures, this is an expedition that is rhizomatic in nature; the processes that the singer describes are non-linear and multidirectional; they are marked by generative collisions and clashes, as well as detours and delays. This conceptual metaphor, IMPROVISATION IS AN ADVENTURE, is suggestive of the singer's expert sensorimotor capacity to fully evaluate and capitalize on the affordances or possibilities for action as presented in the moment to, and by, the singer herself, other musical agents, and their surroundings.

One of the recurring metaphors that the singer uses for understanding the experience of improvisation as an adventure is that of the map as an essential resource that orients the adventurers to each other and to their environment. The singer employs an extended metaphor of visiting someone's house to describe using a map to arrive at an intended destination:

> So, it's like visiting someone's house for the first time—I don't know how to get there, but if I visit them a few times, I don't need my map anymore [because] I remember . . . So that helps me to go, okay, I can let this go and try to be present and listen because it's not all up to me . . . which is really hard for people just starting out to do because it's scary! It's like, you're, you know, you're asking them to be at risk, you know, for a whole set, and some people can go there, and some people can't yet, and some people will eventually and maybe not ever.

This recalls Levin's descriptions of attempting to plan improvisations over cadenzas by compiling mental maps of potential plot lines (Berkowitz, 2010). Levin recalls, however, that inevitably, these maps are discarded during performance. Due to the spontaneity of musical creation, it was simply not possible to rely only on the map because a direction would be forgotten, a wrong turn would be made, or an alternative route needed to be formulated immediately in order to ensure musical coherence. Levin then, comes to the realization that he had to "let go of [the map] and go wherever" (quoted by Berkowitz, 2010, p. 123). Similarly, for the artist-level improvising singer, her cumulative experience as an adventurer means she simply knows which way to go, and because each adventure is different on each subsequent expedition, she is highly unlikely to follow a pre-determined route. Rather, she prefers to explore uncharted territory, with the map in her back pocket in case of emergency.

Another submapping that emerges in the singer's conceptualization of improvisation as an adventure is the idea that other musicians are members of the expedition party who accompany her on her ventures. From the singer's perspective, the other musicians mis/adventure alongside her. For this reason, the adventure is often a shared one rather than a purely solitary endeavor, as the performer explains:

> . . . when other people are creating from that same kind of control centre, it's like holy shit, here we go! You're finally in the rocket ship with people who know how to drive it! And it's like, "You've got that bit and I've got this bit, and we needed to find one another and now . . . it's like the Power Rangers!"

When the singer is playing with musicians who share her adventuring spirit ("creating from the same control centre"), the music takes off ("here we go!"). Again, the choice of metaphorical expression here is revealing in that improvisation is described as collective labor, a submetaphor that highlights the physicality of the collaborative experience of improvisation. Put simply, improvisation is a team effort, with each team member playing a unique and equally important role in the success of the improvisation. As the singer observes, "we're joining forces . . . so we don't have to come up with all the ideas [alone]." Here, she is able to recognize the unique contribution that each musician makes to the assemblage of a successful vehicle for adventure: in

this case, the rocket ship that allows the team to fly. When the rocket ship, which has been custom built, is in full flight, improvisation is a full body experience for the singer: "we're all kind of staying in it and feeding off one another's focus and that's when you fly, I think, and that's when you're actually letting go." Of course, the flight is sometimes turbulent, with unseen bumps and obstacles along the way. The singer describes these moments of tension as "collisions . . . [laughs] . . . like where we would lock in and then it would dismantle." However, this is not a problem for the singer; over time, she has learned to embrace rather than avoid moments of collision, and to view the dismantling of the ship as an act of creation. As she explains, "it's almost like a utopian society"—when one of the crew is "bleeding," the other musicians are "cushioning." All these metaphorical expressions point toward the role of the body and other bodies in the creation of improvisation, as well as the intuitive corporeal knowing at play when musicians are adventuring while operating from the same control center.

In reflecting on practice, the singer uses a number of metaphorical expressions that describe a range of physical actions and reactions that can be mapped onto corresponding acts of musical creation. She describes improvisation variably as "swinging through the trees," "catching onto something," "scoring a goal," "bouncing like a ping pong ball," and "diving in." Each movement is characterized by the embodied values of risk, freedom, and pleasure, and all are performed in a liminal space that is marked by individual transformation, endless possibility, and perpetual reconfiguration. The musical agent here is operating under few if any constraints; just like a bird that is free to soar through the sky, so too is the singer free to create without limitation. For the singer, these creative possibilities are the result of her "ongoing processes of organism-environment interactions" (Johnson, 2018, p. 637), which depend on, and emerge from, an embodied process of meaning-making:

> . . . if you're all wanting to serve the music and you acknowledge that you need each other to make the music, you're all listening . . . and giving hopefully just what is needed, and so then it becomes this really joyous exchange where you feel like, no matter what happens, you're gonna be caught . . . it's like you're all kind of just helping one another sort of swing through the trees and no one falls because mistakes aren't mistakes; they're just a new way of going through.

For the singer, this "physical" freedom allows improvisation to become a "joyous exchange" with other musicians, one where the limitless possibilities offered in the act of creation are no longer a source of fear but rather, again, a source of comfort and security ("no one falls"). This sense of security, whether real or imagined, means the singer can effortlessly "swing through the trees," with the other musicians there to help build momentum; to find "a new way through." This focus on collaborative meaning-making and group problem-solving imbues the act of improvisation with a sense of shared responsibility for the musical creation. Therefore, despite improvisation being "a crazy vulnerable thing," the singer feels "completely free and completely strong." These metaphors of physical action and response suggest that the improvising body interacting with, and through, its environment is a free, strong body that moves with effortless grace through the bends and elbows of improvisation.

While the above discussion demonstrates that the singer experiences improvisation exclusively as body–mind–environment interactions and projections, the analysis is not intended to present a radical view of embodiment—we do not reject out-of-hand representationalist theories of improvisation as put forward by Pressing (1988) and Berkowitz (2010). The singer's conceptual knowledge base comprised of idiomatic musical material (the map) must be highly developed to allow her to fully exploit the affordances (both musical and non-musical) of her performance environment. However, we argue that the singer's experiences of improvisation,

as captured in the conceptual metaphor, IMPROVISATION IS AN ADVENTURE, provide a far more integrative and complex view of the improviser as body–mind interacting with their environment than do strictly representationalist views of improvisation. We posit that it is the expert sensorimotor capacity to leverage the affordances of the environment that distinguishes the elite vocal improviser from the amateur; and in this sense, the singer's expertise enables her to extract maximum meaning from her coupling with the environment and the other agents within it, in the form of sophisticated spontaneous musical compositions. As Johnson (2018) states, "Conceptual/propositional meaning *depends on, and emerges from*, this much deeper and broader embodied process of meaning-making" (p. 627, emphasis added).

The road ahead

Our systematic analysis of the singer's use of metaphorical expression reveals that improvisation is conceptualized at the schematic level as IMPROVISATION IS AN ADVENTURE, with a set of ontological correspondences that demonstrate the singer experiences the abstract act of improvisation through embodied activities that are unusual, exciting, or dangerous. In this conceptual mapping, the improvising singer corresponds to the adventurer or explorer; the conceptual knowledge base is the adventurer's map; the other musicians are members of the expedition party; and acts of musical creation are physical actions and reactions. This overarching conceptual metaphor presupposes, at the very least, motion and spatiality schemas that again point to the recruitment of body-based meaning and orientation in the conceptualization of improvisation.

We acknowledge that the analysis presented here is limited in scope to Lakoff and Johnson's (1980) original two-dimensional model of conceptual metaphor. Further and more in-depth studies of performers' experiences, expanded beyond those of a single participant, would lend themselves to full consideration of the multi-level approach advocated by Kövecses (2017b, 2020), namely the analysis and identification of image schemas, domains, frames, and mental spaces. A large-scale study of this kind would make an important contribution to performance science and to our understanding of expert performers' subjective experiences and how those experiences are metaphorized.

We further acknowledge that the analysis is bounded by the subjectivity of the researchers' re-construction of the participant's metaphorical language into conceptual categories. Other CMT researchers have suggested methods of triangulation to support the trustworthiness of findings of metaphor analysis; however, these methods must be incorporated during the design phase of the research (e.g., Armstrong et al., 2011). The impetus for metaphor analysis in the current study emerged *post facto* from the original data collection (as was the case in Shinebourne & Smith, 2010), and as a result, it was not possible to enact methods of triangulation retrospectively. Rather than view these findings as limited when considered through the positivist lens of trustworthiness, however, we argue that in keeping with many other qualitative methodologies, the researchers' own subjectivity is a valuable resource in the analysis of data. As the first author is a jazz singer of many years' experience, it was her familiarity with the social and cultural milieu of jazz that enabled the identification of metaphors as a "striking feature" of the original interviews (Shinebourne & Smith, 2010, p. 59). Therefore, we contend that within phenomenological research, the idiographic nature of the singer's experience as well as the researchers' interpretations—while not intended to be generalizable to all improvising singers—are, nonetheless, illuminating within the confines of a single-participant study.

This article, then, presents "glimpses and manifestations" (Pate & Johnson, 2013, p. 189) of the cognitively embodied dimension of vocal improvisation. In attempting to articulate

"patterns of thought, perception, communication, and action" (Schmitt, 2005, p. 366), the singer's use of metaphorical expressions suggests that she accesses "bodily-constituted knowledge" in the process of improvisation (Bowman, 2004, p. 34). This is important knowledge for developing jazz singers and vocal jazz educators. In addition to the very important foundational work of building their conceptual knowledge base, developing singers also need to seek opportunities for working regularly with other musicians to practise interacting with others and their environment. The singer's case, as presented here, indicates that such learning opportunities are crucial to the development of the improvisatory skills of jazz singers. Admittedly, these learning opportunities are already a feature of much vocal jazz education. However, the question arises as to what extent bodily ways of knowing are explicitly referred to in pedagogy and practice. Future research, therefore, could consider the formulation of specific meta-pedagogical strategies for enhancing these development opportunities for singers. For example, investigating which metaphors are internalized by singers from teachers or peers might reveal whether metaphors function as a form of socialization into jazz improvisation. This has implications for teacher and musician talk during lessons and rehearsals since certain metaphors used in practice, or in the communication of practice, might be more accessible (or inaccessible) to certain groups of students. In fact, since everyday uses of metaphor are largely unconscious (Lakoff, 1992; Lakoff & Johnson, 1980; Schmitt, 2005), the simple act of bringing metaphor to a conscious level, through discussion and reflection, might help practitioners conceptualize their craft and make sense of its possibilities and limitations.

Artist-level improvising jazz singers are uniquely embodied in the world of music performance. The findings of this study are intended to act as a provocation for future research to include singers as participants when investigating improvisation and cognition. We contend that there is much to learn about cognitive embodiment from the musical experience of the expert improvising jazz singer. This experience "provides a fascinating and a compelling laboratory for the study and fuller appreciation of cognition: of what it is 'to know' in the fullest sense of the term" (Bowman, 2004, p. 34).

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Appendix 1

The interview protocol is based on the three-part series proposed by Seidman (2006).

Part 1: Focused history
- How did you become involved in vocal jazz improvisation?
- Can you tell me broadly what place vocal jazz improvisation has in your life at the moment?

Part 2: Details of experience
- Can you reconstruct a particular instance of vocal improvisation, such as an occasion where you felt things went well? Or perhaps an occasion where you felt things didn't go so well? What do you think were the differences?
- What do you actually do when you improvise with your voice? What are the stages involved?
- What is happening around you when you improvise?
- Can you describe where vocal improvisation typically takes place for you?

Part 3: Reflection on meaning
- Given what you have said about your life and the details of vocal improvisation, how do you understand vocal improvisation?
- What does an audience's reaction mean to you as a vocal jazz improviser?
- What sense does it make to you?
- What meaning does vocal jazz improvisation hold for you today?
- Can you imagine what life would be like for you without improvisation?