Metaphorical Transduction in Musical Performance:
An essay on interpretation and imagination

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ABSTRACT

This essay investigates the role of metaphor in musical performance and proposes the concept of metaphorical transduction as a framework for understanding how symbolic notation becomes embodied musical action. Drawing on perspectives from rhetoric, semiotics, embodied cognition, artistic research, and performance studies, the article argues that metaphors in musical practice function not merely as descriptive devices but as operative techniques that reorganise perception, bodily disposition, attention, and action. Through this process, the score is transformed into a particular sounding realisation.

The article combines theoretical discussion with reflections from artistic practice. It begins with a series of performative situations, including lessons with Leon Fleisher, the pedagogical practice of Alfred Cortot, and experiences from my own work as a pianist. These examples motivate a broader enquiry into the function of metaphor in musical interpretation. The historical discussion ranges from Aristotle's theory of analogy and Cicero's rhetoric through C. P. E. Bach, Leopold Mozart, Roger Scruton, and the embodied theory of metaphor developed by George Lakoff and Mark Johnson. The article further develops Roland Barthes' concept of somathemes as a bridge between signification and corporeal articulation.

Particular attention is given to two case studies. The first examines the rehearsal practice of Antonio Pappano, where metaphor operates as a means of coordinating perception, gesture, and collective musical action. The second analyses experiments conducted within the HammerklavierX Project, a long-term artistic research project exploring the use of analogy and metaphor in Beethoven interpretation. An experimental analogy between Beethoven's Hammerklavier Sonata and the extreme virtuosity of works such as Maurice Ravel's Scarbo generated an unforeseen insight into Beethoven's controversial metronome indication for the first movement, demonstrating how metaphor can function as an experimental variable capable of producing new artistic and historical knowledge.

The article concludes by proposing that metaphorical imagination forms part of the technical foundations of performance. Stories, images, affects, characters, gestures, and bodily sensations can be understood as operative components of musical technique, shaping the conditions under which performers hear, act, and sound. The concept of metaphorical transduction offers a framework for examining a dimension of performance practice that is widely used by musicians but less often studied through detailed accounts of its operation in playing.

Parts of the article originated in discussions surrounding the seminar "Metaforer som musikalsk praksis", held at the Royal Danish Academy of Music on 29 October 2026. The seminar brought together performers, researchers, and educators to examine the role of metaphor, imagination, and embodied knowledge in musical interpretation. Several of the questions explored there continue to inform the present investigation.

PART I - INTRODUCTION

An imaginative intervention

In December 2006, at the age of twenty-one, I participated in a masterclass with Leon Fleisher at the Sibelius Academy. I played the first two movements of Beethoven's Piano Sonata in A major, Op. 101. After the performance, Fleisher asked what impressions I associated with the first movement. What, in my experience, was this music about?

I described the movement as fluid or aqueous, perhaps like water in continuous motion. Fleisher added the recollection of something from the past: a pleasant but distant memory. His intervention connected an image of physical movement with a temporal relation. The music could be experienced as both flow and recollection.

Fleisher related these associations to the rhythmic articulation of the opening. The movement is in 6/8, and its character depends partly on the relation between longer and shorter notes. He demonstrated how small adjustments to this relation produced different results. A slight emphasis on the longer note created a more pronounced lilt; a different distribution produced a more continuous phrase. The technical means were precise and developed from distinct imaginative orientations.

The intervention shifted the point of departure for technical instruction. Fleisher established an image through which the rhythmic relations could be heard and physically organised, rather than prescribing the duration of individual notes. The image made certain differences perceptible and available to the body as timing, touch, weight, and movement.

Fleisher also related this procedure to the conditions of public performance. A performer entering the stage with an elevated heart rate cannot simply decide to "play beautifully." The instruction is too general to organise action. A concrete memory, sensation, or image can establish a more specific orientation before the first sound. It directs attention towards a field of qualities and prepares the body for a particular mode of action.

In other masterclasses, Fleisher frequently used terms drawn from mechanics and thermodynamics. He described musical events through resistance, friction, attraction, momentum, temperature, pressure, and the accumulation or release of energy. A phrase might work against a force, be pulled in a particular direction, gain momentum, or move between states of heat and cold. These expressions transferred relational structures from physical processes into musical practice. Dynamic and temporal relations could thereby be approached as bodily problems.

This episode introduces the initial problem of the present article: what happens between an image, analogy, or metaphor and the physical production of musical sound? How can a verbal proposition reorganise attention and movement? How does an imagined configuration become audible?

The example makes no general claim that effective teaching must be metaphorical. Fleisher's intervention worked in conjunction with a detailed understanding of rhythm, sound production, and musical structure. Its specific function was to connect these elements within one imaginative configuration. The metaphor altered the conditions under which several related actions could be coordinated.

"Continuing Wagner"

During the same period at the Sibelius Academy, a fellow student, Aleksander, who is a Danish violinist, and I developed a simple pre-performance practice. Before going on stage, we would sit in one of the academy library's listening rooms, listen to Wagner, or watch recordings of Wagner performances, often conducted by Georg Solti or James Levine. The repertoire we were about to perform could be entirely different, yet the performance often felt more convincing when approached as a continuation of the Wagnerian musical world.

The procedure was elementary. We listened or watched for a short period and then went on stage while retaining something of the musical state generated by the recording. We were not concerned with reproducing Wagner's harmonic language, orchestration, or style. What persisted was a configuration of scale, energy, temporal extension, dramatic projection, and bodily intensity.

At the time, we had no theoretical explanation for the effect; we simply observed that the procedure made it easier to enter a focused state of concentration and that the ensuing performance acquired a stronger sense of direction and consequence, as though the music had begun before the first note and our playing were entering a process already in motion.

The experience suggests that a productive analogy does not require a close resemblance between source and target, since what is transferred may be a configuration of relations rather than a set of identifiable musical features: relations between tension and release, local event and large-scale continuity, gesture and dramatic consequence, or bodily disposition and temporal process. The operation is necessarily selective, activating certain aspects of the source while allowing others to recede. Wagner's music functioned in this sense as a reservoir of intensities, temporal scales, gestures, and modes of dramatic projection that could be carried into another performance situation without importing Wagner's harmonic language, orchestration, or style.

In Deleuzian terms, this might be described cautiously as a local movement of deterritorialisation and reterritorialisation: a configuration was loosened from the musical context in which we first encountered it and became operative within another repertoire, where it entered into different relations and acquired another function. The practical procedure remained simple. Listening to or watching a Wagner performance altered our imaginative and physical readiness, and this changed the musical possibilities available to us when we went on stage.

The effect was perceptual, affective, and physical. Listening to Wagner affected breathing, muscular tone, temporal expectation, and the scale of anticipated gesture. Larger continuities became more salient, transitions acquired greater dramatic weight, and individual events were experienced as moments within an extended process. The procedure changed what we heard in the score and what we expected from our own actions.

This may be described provisionally as metaphorical transduction. A configuration encountered in one artistic practice is converted into another functional mode. Rather than being reproduced, it reorganises the performer's disposition and subsequently becomes audible as musical action.

The Wagner experiment also complicates the distinction between musical and extra-musical metaphor. Its source was another musical practice, yet the transfer extended beyond stylistic reference. Dramatic, bodily, spatial, and temporal relations were carried across into a different repertoire. Musical materials activated an imagined world, and that world reorganised the performance that followed.

"One must dream it, not play it"

Among the many examples that could be discussed, I choose one that accompanied my own musical formation. As a student, I repeatedly returned to a documentary film on great

pianists that included Alfred Cortot teaching Robert Schumann's *Der Dichter spricht*, the concluding piece of *Kinderszenen*, Op. 15.

Link to video: https://www.youtube.com/watch?v=NkaxYxaTTwM

Over the years, the lesson acquired an almost mythological status for me. It condensed, in a few minutes, a particular conception of musical interpretation in which imagination functions as one of the driving forces of performance.

The lesson begins with a remark that has become well known: “One must dream this last piece, not play it.” Cortot proposes a particular order of operations. Before questions of touch, phrasing, and sonority can be addressed, the piece must emerge as a poetic and imaginative situation. Performance develops from within this situation.

The masterclass is striking because of the precision with which imaginative language is connected to musical detail. Cortot speaks of reverie, intimacy, questioning, tenderness, futurity, disappearance, and immortality. He asks the student to hear the phrases as distinct expressive conditions. The opening phrases should not be mechanically connected because they represent “two different elements of the same musical condition.” One phrase becomes a question; another “tenderly questions the future.” Later, the music gradually leaves the sphere of ordinary discourse and enters what Cortot describes as immortality. The final sonorities disappear while the dream continues.

These images correspond to concrete musical differentiations. Questioning affects direction and expectation. Tenderness shapes attack and the relation between tones. Disappearance alters the release of sound. The dream functions as a mode of organising timing, articulation, sonority, and phrasing.

The lesson also demonstrates how metaphorical instruction operates simultaneously through several channels. Cortot speaks, sings, gestures, changes facial expression, demonstrates at the keyboard, and directs the student's attention through his own bodily engagement with the music. The image is spoken, demonstrated, and enacted. The passage from imagination to sound begins within the pedagogical event itself.

For instrumentalists, the example is especially revealing. Singers often encounter an imagined world through text, character, and dramatic situation. Instrumentalists usually work with fewer explicit points of reference. The score may contain indications of character, yet much of the imagined world remains to be discovered, borrowed, constructed, or experimentally produced by the performer.

Cortot's images need not be treated as definitive interpretations of Schumann's piece. They function as operative devices. They establish conditions under which particular forms of phrasing, timing, articulation, and sound production become possible. Their value lies in what they enable the student to hear and do.

In this sense, “dreaming” the piece can be understood as a procedure. It reconfigures the performer's relation to the score and opens a particular field of musical action. Whether the procedure succeeds remains an empirical question, ultimately evaluated through the sound it produces.

Imagination in the discourse of pianists

Cortot’s lesson presents an unusually concentrated example of a practice that is common among pianists. Images, stories, characters, bodily sensations, colours, gestures, voices, and references to other instruments form part of the daily vocabulary of performance and teaching. They belong to the practical culture of the instrument.

This practice has a particular significance in piano playing. The piano produces sound through a hammer striking a string. Once the hammer has struck, the pianist has little direct

control over the continued physical production of the sound. Pianists nevertheless speak constantly of singing, breathing, sustaining, shaping, speaking, and carrying a tone. We imagine the piano as a voice, an orchestra, a string instrument, a dramatic character, or a physical body in motion. Such descriptions influence the preparation of the attack, the relation between successive tones, voicing, pedalling, timing, dynamics, and the distribution of weight. Imagination participates in transforming a percussive instrument into a vehicle for song, orchestral sonority, narrative, emotion, and image.

Vladimir Horowitz gave a concise account of this practice: “I must tell a story. That’s what music is to me. I paint pictures in my mind as I play.” The formulation links storytelling, internal imagery, and instrumental performance. The imagined story or picture supplies an organisation that can be realised through sound, with consequences for musical direction, differentiation, continuity, and timing.

A related conception appears in a statement attributed to Cortot: “The interpretation of a work of music is not a matter of reproducing it but of recreating it through the artist’s imagination.” Interpretation is understood here as a productive activity. The score enters a process of recreation involving imagination, historical knowledge, instrumental technique, and close attention to notation.

Clara Haskil reportedly described musical phrasing through three closely related images: “To me, a phrase in music is like a breath, a gesture, a spoken line. It must have life.” Breath, gesture, and speech each introduce a different bodily organisation. Breath implies continuity, capacity, preparation, and release. Gesture involves direction, scale, and physical consequence. Speech introduces inflection, syntax, accentuation, and address. Applied to a musical phrase, these images produce practical questions: Where does the phrase begin to move? Where does it breathe? What does it emphasise? Towards whom is it directed?

Charles Rosen placed imagery within the activity of musical shaping: “Imagery in performance is indispensable. If I don’t have a metaphor in my mind, something visual, something emotional, I can’t shape the music.” The relevant point is the verb shape. An image introduces differences into the perceived musical material. It allows the performer to hear a contour, direction, hierarchy, or field of tension that can be realised through physical action.

András Schiff has frequently referred to keys, colours, characters, and stories. In one attributed formulation, he describes B minor as black, “like a storm cloud,” and D major as “bright and noble, like a trumpet call.” Elsewhere he states: “We must tell a story. Playing notes is not enough. It’s like reading a poem without feeling the meaning. Every phrase has a beginning, a journey, and a destination.” These formulations connect musical structures with colour, weather, instrumental timbre, poetry, and narrative movement. They provide several overlapping systems for organising attention.

Heinrich Neuhaus occupies a central position in this tradition of piano pedagogy. A student recalls that “Neuhaus constantly spoke in images. He compared phrases to gestures, voices to colours, and emotions to landscapes. He said that to play without imagination was to speak without meaning.” In The Art of Piano Playing, such imagery forms part of a broad pedagogical method in which musical conception precedes and directs instrumental work. The desired sound must first be heard inwardly and understood expressively. The corresponding technical means can then be selected.

Taken together, these statements reveal a recurring practical structure. The score presents a field of pitches, rhythms, articulations, dynamics, proportions, and historically mediated signs. The performer hears these relations under a particular imaginative description. This description directs attention, establishes priorities, and affects bodily preparation. The resulting actions become audible as phrasing, timing, articulation, voicing, pedalling, attack, and release.

The image may concern the work as a whole or a very small musical event. A movement can be approached as a drama, a landscape, or a remembered experience. A single phrase can be treated as an utterance, a breath, or a gesture. A chord may be heard as an orchestral sonority. One voice may be imagined as a singer, a woodwind instrument, or a character entering a conversation. The image establishes a temporary system of relations within which the pianist can act.

This practice is particularly visible in teaching. A teacher may sing a phrase, conduct it, imitate another instrument, describe a physical force, invent a dramatic situation, or ask the student to assume a character. Such interventions often combine verbal, vocal, visual, and bodily information. Their effects may be immediate: the student changes posture, breathing, timing, scale of gesture, or quality of attack before being able to explain the change analytically.

Metaphor and imagination can therefore be approached as a living part of pianistic technique. They operate within the processes through which performers organise perception and action. Their effects extend into the physical production of sound, even when the initiating image leaves no explicit trace in the final performance.

Individual metaphors may be conventional, vague, culturally restricted, or ineffective for a particular performer. Their wider significance lies in their operative potential. They offer procedures for converting notated structures into differentiated acts of performance. Metaphors of song, speech, orchestral colour, gesture, and narrative are deeply embedded in pianistic practice. They help the pianist organise an instrument whose mechanism produces sound through impact, while the musical result requires continuity, inflection, character, and life.

The statements above point towards a shared layer of pianistic practice in which imagination mediates between notation and bodily action. This knowledge is frequently transmitted through speech, imitation, and demonstration. It forms part of the practical knowledge of the profession, though it is not always recognised in formal accounts of technique.

The transmutational metaphor: “det magiske som”

I use the term transmutational metaphor as a provisional name for the class of imaginative operations discussed in the preceding examples. The expression was suggested to me by Tuan Hao Tan as a translation of the Danish phrase “det magiske som”, a core concept in my current pedagogical practice (literally "the magical as if"), itself derived from an appropriation of Konstantin Stanislavski's "magic if."

Stanislavski's formulation invites the actor to proceed through a conditional proposition: What would I do if I were in this situation? The practical force of the condition lies in its capacity to reorganise attention, intention, bodily disposition, and action. Acting as if establishes a relation to an imagined situation and generates a particular mode of engagement with it.

In musical performance, a comparable operation often takes the form of hearing or playing as. A phrase may be heard as speech, a texture as landscape, a line as bodily movement, a movement as drama, or one musical work through the performative logic of another. The source domain may be another musical style, an imagined instrument, a physical sensation, a gesture, a colour, a character, a historical affect, or a particular configuration of forces.

A provisional definition can therefore be proposed:

A transmutational metaphor is an image, analogy, narrative, sensation, character-identity, or “as if” that changes the performer's embodied relation to a musical work and thereby generates new possibilities of perception and action.

The term is intentionally broad. It includes operations that would not all be classified as metaphors in a strict linguistic sense. References to other musical works, imagined instruments, bodily sensations, dramatic situations, rhetorical affects, gestural analogies, and what Paulo de Assis has described as anagrammatic relations between musical objects may all operate in this way. The common feature is operational rather than semantic. An imported configuration reorganises the performer's relation to the musical material.

The adjective ‘transmutational’ designates a functional transformation within performance practice. The metaphor enters the interpretative process as a variable capable of modifying relations among score, performer, instrument, and sound. The term also retains an intentional alchemical resonance. Alchemical transmutation sought to produce new substances from existing materials; metaphorical transduction reconfigures symbolic materials into embodied and sounding forms. The comparison should not be taken literally, but it points towards a central concern of performance: the production of living musical experience from the apparently inert signs of notation. Metaphor participates in the process through which abstract structures acquire gesture, affect, temporality, and sonic presence.

Score, performer, instrument, acoustic environment, and historical practices form an assemblage whose internal relations remain in continuous adjustment. Within this assemblage, metaphor acts as a catalyst. By altering specific relations, it produces a different actualisation of the work.

Three analytical dimensions may be distinguished.

The first is *semantic transfer*. A field of implications is carried from one domain into another. Musical materials are understood through speech, movement, gravity, architecture, memory, drama, or another musical practice.

The second is *perceptual reorganisation*. The transfer changes what becomes salient. Different continuities, tensions, directions, hierarchies, and formal units emerge.

The third is *embodied transduction*. The altered perception enters the domain of action. Breathing, posture, muscular organisation, gesture, timing, touch, articulation, voicing, pedalling, and release are reorganised accordingly.

These dimensions form a recursive circuit rather than a sequence of stages. A metaphor may reshape perception; a newly perceived relation may generate a different gesture; the resulting sound may alter the metaphor itself. An image may disappear from conscious attention while persisting as bodily organisation.

The central claim of this article is that such operations belong to musical technique. They are accessible to investigation through artistic experimentation, pedagogical observation, performer testimony, rehearsal processes, and comparative performance work. The decisive question is therefore less what a metaphor means than how it operates.

Part I of this study has approached this question through three practical situations. Fleisher's images reorganised rhythmic and bodily attention. The Wagner recordings established a performative disposition that could be transferred to unrelated repertoire. Cortot's instruction to "dream" Schumann coordinated language, gesture, imagination, and instrumental action. In each case, an imaginative proposition generated perceptible consequences in performance.

The following sections examine the historical and conceptual conditions of this process. For the moment, the problem can be formulated in a more precise form: how does an imagined relation acquire perceptual and bodily force, and under what conditions does this force become musically productive?

II. METAPHOR AND MUSICAL MEANING

Carrying meaning across

The concept of metaphor already contains a theory of movement. The Greek term metaphora derives from *meta* (across, beyond) and *pherein* (to carry). The Latin equivalent, *translatio*, carries a similar meaning and later became associated with translation. In both cases, metaphor refers to a transfer: something is carried from one place, context, or domain into another.

The concept is curiously self-referential. The word ‘metaphor’ is itself a metaphor. A material process of transportation is transferred into the domain of language and thought, where it becomes a model for understanding how meanings move between domains. The concept therefore performs the operation it names. Long before metaphor became identified with poetic language, it was already grounded in a practical image of transport, movement, and relocation.

During one of the seminars that informed this article, a participant recalled a cargo bicycle company in Athens called *Metaphora*. The name appeared on bicycles transporting goods across the city. The example is almost comically literal, yet useful precisely because of its simplicity. Before metaphor became associated with poetry and figurative language, it referred to transport.

This physical meaning resonates with a fundamental problem in musical performance. A score presents pitches, durations, articulations, dynamic indications, and other symbolic signs. These signs must somehow become bodily actions and sounding musical events. The performer is constantly required to carry something across: from notation to perception, from perception to action, and from action to sound.

The notion of *transduction* becomes relevant at this point. Metaphor and transduction are related operations, but they designate different moments in a process. Metaphor transfers structures, relations, or implications between domains. Transduction designates a conversion between modes of operation. A microphone converts fluctuations in air pressure into electrical signals. Biological sensory systems convert physical stimuli into neural activity. In each case, something passes into another functional register.

The concept of *metaphorical transduction* proposed in this article designates the point at which an imaginative or conceptual configuration becomes physically operative. Metaphor provides the transfer of relations; transduction concerns their embodiment.

Aristotle: metaphor and analogy

Aristotle's account of metaphor provides a useful point of departure. In the Poetics, he defines metaphor as "the application of an alien name" (*epiphora onomatos allotriou*), that is, the transfer of a term from one thing to another. Such transfers may proceed through genus, species, proportion, or analogy.

For the present argument, analogy is particularly important. Aristotle writes that metaphor can arise "on grounds of analogy," where one thing stands in the same relation to another as a second thing stands to a third. The familiar example is that a cup stands in relation to Dionysus as a shield stands in relation to Ares. The resulting metaphor establishes a correspondence between relations rather than between the objects themselves.

This understanding remains highly relevant for musical performance. When a performer approaches Beethoven through Wagner, or Beethoven through Ravel, the operation concerns relations: a temporal organisation, a mode of projection, a gestural logic, a scale of energy, or

a particular approach to continuity and discontinuity. The analogy provides a relational model through which another musical object can be explored.

Aristotle's discussion also clarifies the relation between metaphor and *simile*. A simile presents the analogy explicitly: Achilles fights like a lion. A metaphor compresses the same relation into a more direct formulation: Achilles is a lion. In both cases, the underlying operation is analogical. The difference lies primarily in the degree of explicitness.

For the performer, the explicit "as" often remains productive. A phrase may be played as speech, as song, as orchestral sound, or as dramatic gesture. Such formulations function as practical hypotheses whose consequences can be tested through performance.

From ornament to cognition

Classical rhetoric generally treated metaphor as a figure of speech. Yet even within that tradition one finds indications of a broader function.

In *De Oratore*, Cicero argues that metaphor originated from necessity. Human beings often lacked words for what they wished to express and therefore borrowed terms from other domains. He describes metaphor as something that was "introduced because of the poverty of language" and later retained because of the pleasure and illumination it affords. The metaphor initially fills a gap, then becomes a source of insight.

A similar idea appears in Quintilian, who describes metaphor as the most frequent and beautiful of tropes. It is not an exceptional ornament added to language from the outside. It is among the principal means by which language expands its expressive capacity.

At this stage, metaphor has already begun to exceed the status of ornament. It becomes a response to the limits of literal description and a means by which new relations can become thinkable.

A brief semiotic detour helps explain why this matters for music. Augustine defines a sign as "a thing which causes us to think of something beyond the impression the thing itself makes upon the senses." A sign points beyond itself. Meaning therefore involves mediation rather than direct presence.

This idea receives a more systematic formulation in the work of Charles Sanders Peirce. Peirce's triadic relation between sign, object, and interpretant implies that meaning arises through interpretation. A sign becomes meaningful through a process that links symbolic form to possible understanding and action.

Musical notation provides a particularly clear example. Notes on a page do not contain their own performance. The score specifies relations but leaves their sounding realisation open. Interpretation mediates between symbolic marks and embodied musical action. It is within this mediating space that metaphors frequently operate.

The purpose of this brief semiotic excursion is therefore modest. It establishes a simple proposition: notation requires interpretation because signs do not contain their performed meaning in an immediately executable form.

Lakoff and Johnson: metaphor and embodiment

A more decisive shift occurs with the work of George Lakoff and Mark Johnson. The opening sentence of *Metaphors We Live By* has become famous: "Metaphor is pervasive in everyday life, not just in language but in thought and action."

This statement marks a significant departure from the rhetorical tradition. Metaphor is no longer understood primarily as a poetic figure. It becomes a fundamental mechanism through which human beings organise experience.

Lakoff and Johnson's central claim is that abstract domains are frequently understood through more concrete domains. Arguments are understood through war. Time is understood through money. Love is understood through journeys. These metaphors are not confined to verbal expression. They structure perception, reasoning, and behaviour. We speak of "defending" a position, "wasting" time, or a relationship being "at a crossroads" because underlying conceptual structures organise the way we understand those experiences.

Their account depends upon what is often called *domain mapping*. A source domain provides a structured field of relations that becomes projected onto a target domain. The transfer carries implications with it. Certain aspects become salient. Others recede.

Equally important is their concept of *embodiment*. Human beings encounter gravity, balance, resistance, force, containment, movement, and orientation before they acquire abstract concepts. Many conceptual structures therefore emerge from recurrent bodily interactions with the world.

This perspective suggests an immediate connection to musical performance. Musical notation is highly abstract. It presents symbolic relations rather than concrete actions.

Metaphorical source domains provide access to more directly experienced structures: weight, balance, direction, force, tension, release, breathing, movement, effort, and resistance.

From this perspective, a musical metaphor reorganises attention. To hear a phrase as a breath differs from hearing it as a succession of note values. To imagine a crescendo as the accumulation of energy differs from conceiving it simply as an increase in dynamic level. The metaphor introduces a configuration of relations that shapes both perception and action.

Lakoff and Johnson's theory also offers a useful perspective on so-called dead metaphors. Expressions such as musical line, harmonic tension, falling intervals, arrival, balance, weight, *forte*, *piano*, and *allegro* are often treated as neutral technical vocabulary. Yet they continue to structure hearing and performance. Their metaphorical origins may no longer be consciously noticed, while their practical effects remain operative.

For musical performance, the consequence is significant. If abstract understanding is grounded in embodied experience, then many performance metaphors can be understood as procedures for converting symbolic notation into perceptual and bodily organisation. They function as bridges between abstract musical relations and concrete patterns of action.

The preceding discussion also clarifies the notion of metaphorical transduction proposed in Part I. Metaphor provides a transfer of relations. Transduction concerns the subsequent reorganisation of perception and action through which these relations become musically operative. Musical interpretation can consequently be understood as a field in which transferred relations are continually actualised as perception, bodily organisation, musical gesture, performance, and sound.

True Content and Affect: C. P. E. Bach

If Lakoff and Johnson describe how abstract thought may be grounded in embodied experience, eighteenth-century performance theory offers an early account of how musical meaning becomes embodied action. Few authors formulate this more clearly than C. P. E. Bach.

In the Versuch über die wahre Art das Clavier zu spielen, Bach repeatedly describes performance as the communication of what he calls the music's wahre Inhalt und Affekt ("true content and affect"). Musical notation alone is insufficient. The performer must transform musical thoughts into audible expression through concrete physical means. Thus, when discussing execution, Bach moves seamlessly between expressive content and bodily action, speaking of strength, weakness, pressure, attack, agitation, trembling, and release as means through which musical meaning becomes perceptible.

His best-known formulation is equally revealing: "A musician cannot move others unless he too is moved."

The statement is often interpreted as a doctrine of emotional sincerity. Within the present argument it is perhaps more useful to read it as a description of a performative process. Musical content becomes embodied in the performer, who subsequently communicates it through sound. The listener encounters the resulting configuration not as an abstract idea but as a differentiated sonic event.

From this perspective, the rhetoric and Affektenlehre of the eighteenth century can be understood as early theories of metaphorical transduction. Their concern is not primarily the classification of emotions. Rather, they provide mechanisms through which musical signs become embodied dispositions and communicative actions. The performer mediates between symbolic notation and perceptible expression.

The sequence is strikingly close to the model proposed in this article. Musical thought possesses content and affect. The performer translates this content into differentiated bodily and instrumental actions. Those actions become sound. Sound subsequently becomes meaningful for the listener. What Bach describes as the communication of "true content and affect" can therefore be understood as an early account of the passage from symbolic structure to embodied expression.

Leopold Mozart: Imagining Affect

A complementary perspective emerges in the writings of Leopold Mozart. Whereas C. P. E. Bach emphasises the communication of affect, Leopold Mozart draws attention to the imaginative and dispositional dimension of performance.

One of the most striking aspects of the Versuch einer gründlichen Violinschule is the status of what Mozart calls termini technici. On first encounter these appear to be technical performance instructions. A closer inspection reveals that many of them are metaphorical, affective, or characterological in nature. Terms such as amoroso, cantabile, dolente, maestoso, spiritoso, con fuoco, mesto, and countless others do not specify measurable physical actions. They describe moods, characters, social attitudes, dispositions, or imagined states of being.

Consider Mozart's discussion of mesto. The term cannot be reduced to a tempo indication or a dynamic level. It points towards melancholy, sadness, and a particular affective atmosphere. The instruction functions as a prompt for imagination. It asks the performer to enter a specific expressive world and to allow that world to organise the musical realisation.

Throughout the Violinschule, technical execution and imagined affect appear as deeply intertwined. Musical expression depends upon the performer's capacity to establish an inner disposition corresponding to the character of the music. This inner disposition then guides articulation, timing, accentuation, dynamics, and gesture.

Mozart's conclusion is unambiguous: "It is to be seen, as clear sunlight, that every effort must be made to put the player in the mood which reigns in the piece itself; in order thereby to penetrate the souls of the listeners and to excite their emotions."

The formulation is remarkable because it explicitly describes a chain extending from imagined disposition to communicative effect. The performer adopts the mood of the piece. This disposition informs the execution, and the execution subsequently affects the listener. Once again, we encounter a process in which musical meaning acquires bodily and acoustic form through a mediating layer of imagination.

An important question follows. Must the performer actually experience the affect in question? Must a sorrowful passage produce genuine sorrow? Must a majestic passage evoke feelings of grandeur or solemnity in the performer?

Eighteenth-century writers often appear to answer affirmatively. C. P. E. Bach's well-known dictum that "a musician cannot move others unless he too is moved" suggests a model of performance founded upon affective participation. The performer enters the emotional world of the music and communicates it through sound. In this view, expression depends upon a genuine transformation of the performer's inner state.

Yet the matter is less straightforward in practice. The history of performance contains numerous examples of musicians who seem to have maintained a substantial degree of distance from the emotions they projected. Vladimir Horowitz is often credited with the aphorism: "The audience should sweat, not me." Whether understood literally or rhetorically, the statement points toward a different conception of performance. The performer remains sufficiently detached to control the means of expression while producing a powerful emotional response in others.

The contrast may be overstated, however. Between complete identification and complete detachment lies a broad range of possibilities. A performer may experience an affect directly, recall it through memory, evoke it through imagination, approach it through metaphor, or construct it through theatrical means. One may identify with a musical character, observe it from a distance, or move continuously between these positions during performance.

From the perspective developed in this article, what matters is less the psychological status of the affect than its organisational function. An imagined lament, prayer, procession, struggle, conversation, or declaration can reorganise attention, bodily disposition, timing, articulation, and sound production. The metaphor functions as a practical mediator between notation and performance. Whether the performer fully experiences the corresponding emotion, experiences it partially, or approaches it through a degree of theatrical distance becomes, in many cases, a secondary question.

A pragmatic conclusion therefore seems appropriate. The idea that the performer should enter the emotional world of the music has an impressive historical pedigree and remains one of the most widely used and demonstrably effective approaches to performance. At the same time, it would be difficult to maintain that affective identification constitutes the only viable path. Musical practice offers many examples of successful performances rooted in observation, stylisation, role-playing, irony, formal awareness, or other forms of mediated engagement. What these approaches share is the establishment of an affective and imaginative configuration capable of organising action. In the terminology proposed here, they represent different routes through which metaphorical transduction may occur.

The writings of C. P. E. Bach and Leopold Mozart thus point towards a conception of performance in which musical meaning emerges through embodied realisation. Their accounts precede modern theories of metaphor and embodiment by more than two centuries, yet they repeatedly describe processes that closely resemble what has been called metaphorical transduction in this study: the passage of meaning into bodily disposition, and of bodily disposition into sound.

Metaphorical hearing and musical space: Roger Scruton

The preceding discussion has concerned the performer's use of metaphor. A related question arises at the level of listening: is metaphor involved when sound is perceived as music?

Roger Scruton gives metaphor a central place in his account of musical understanding. According to Scruton, tones are heard in an intentional musical space. They rise and fall, approach and withdraw, move towards points of tension and resolution, and acquire relations of weight, force, and direction. Scruton calls such spatial descriptions "indispensable metaphors." They cannot be removed without changing the object of experience. Musical understanding depends on imaginative perception, in which metaphors of space, movement, weight, and effort organise what is heard.

The distinction between sound and tone is important here. The listener receives acoustic events, yet musical perception organises these events as tones situated within intentional relations. A pitch is heard as high or low, although no relevant physical object occupies a vertical position. A melody moves, although the acoustic event remains a sequence of vibrations. One tone prepares, resists, suspends, or resolves another. These relations belong to the way the sound is heard.

Scruton's account may therefore be described as a theory of aspect-hearing. Sounds are perceived under descriptions involving movement, agency, expression, and space. The listener imagines them as possessing these properties without forming literal beliefs about moving objects or physical forces. In this view, metaphor enters the constitution of musical experience.

This account supports a central claim of the present article. Musical hearing exceeds the registration of acoustic data. It involves an organisation of sound through intentional structures. A listener hears continuity, interruption, anticipation, gesture, direction, balance, or expression. Such structures affect what becomes available for attention and what can be recognised as musically significant.

Scruton gives particular importance to spatial movement. This emphasis is convincing within a large part of Western musical experience. Pitch is conventionally organised along a vertical axis; melody is heard as movement; tonal relations generate departure, suspension, and return. Listening may take the form of "moving with" the music, comparable in some respects to bodily participation in dance.

The model can, however, be extended beyond musical space. Performers and listeners also organise music through bodily, vocal, dramatic, affective, architectural, narrative, interpersonal, and material configurations. A phrase may be heard as an utterance. A texture may appear as friction between materials. A rhythm may be experienced as bodily propulsion. A cadence may act as a withdrawal, interruption, concession, or refusal. These modes of hearing involve relations that cannot always be reduced to the image of movement within a homogeneous space.

The claim proposed here is therefore broader: sound becomes available as music when it is heard as organised movement, expression, utterance, gesture, material process, or relation. Spatial movement provides one powerful paradigm of musical intelligibility. Other metaphorical configurations may organise musical perception in different ways.

The recent discussion at the seminar on metaphor at the Royal Danish Academy of Music offered several boundary cases. The sound of a chainsaw may initially be heard as a chainsaw cutting wood. In a concert hall, framed as part of a composition, the same sound may enter another field of attention. Duration, repetition, timbre, density, rhythm, and relation to surrounding sounds may become salient. The acoustic event remains recognisable, while its mode of appearance changes.

A related example concerned listeners with impaired hearing for whom music may initially appear as undifferentiated noise. Information about structure, repetition, instrumentation, and formal return can make the organisation of the sound perceptible. The measurable

condition of hearing may remain unchanged, while the listener's capacity to hear the acoustic field as music develops.

The comparison with wine tasting made during the seminar is useful. Acquired knowledge changes the distinctions that a person is capable of perceiving. The result concerns perception itself, since previously unavailable qualities become salient. The example of radish soup describes the same process in elementary form. An unfamiliar taste appeared unpleasant because it could not be placed within an intelligible category. Once identified as radish, the sensory field became organised and the soup could be tasted differently.

Such examples indicate that perception is conditioned by concepts, experience, attention, and cultural framing. In music, metaphor forms one part of this conditioning. It supplies relations through which otherwise separate acoustic events can be heard as a coherent process. In performance, these relations can be projected in advance and realised through playing. In listening, they organise the sounding result as movement, gesture, expression, or action.

Scruton's "indispensable metaphor" may thus be retained in a modified form. Metaphorical organisation appears indispensable to familiar forms of musical understanding, while musical space represents one historically powerful instance of this organisation. The open question concerns the range of metaphors through which sound may become musically intelligible.

Objections to metaphorical interpretation

The centrality assigned to metaphor raises several objections. Metaphorical interpretation can encourage verbal programmes, emotional overstatement, arbitrary associations, and the subordination of sound to narrative. Three critical positions are especially relevant: musical formalism, resistance to expression, and contemporary forms of sonic materialism.

1. Hanslick and specifically musical relations

Eduard Hanslick's On the Musically Beautiful offers a sustained critique of the view that the representation of feelings constitutes the content of music. His account directs attention towards music's own materials and formal procedures. The often-cited formula "sonically moved forms" locates musical content in the organisation of tones rather than in determinate narratives or emotional objects. Hanslick's position is more nuanced than a simple rejection of affect, yet his critique remains relevant whenever verbal interpretation begins to replace musical relations.

From this perspective, a metaphor may become problematic when it assigns a fixed emotional or narrative content to an instrumental passage. A phrase described as grief, prayer, conflict, or reconciliation may acquire the status of an explanatory programme. The danger lies in treating the programme as the passage's proper content and hearing the musical detail mainly as confirmation.

Hanslick's critique also concerns the direction of interpretation. If musical meaning is located primarily in imagined narratives or states of mind, pitch, rhythm, harmony, texture, and form risk becoming vehicles for content imported from elsewhere. The specificity of musical organisation is weakened.

For the present study, this objection establishes an important condition. A productive metaphor must remain responsive to the musical material. It should disclose or generate relations that become audible in timing, articulation, voicing, texture, dynamics, gesture, or large-scale organisation. A verbal image that produces no perceptible musical consequence remains external to the performance.

2. Stravinsky and the limits of expression

Igor Stravinsky formulated a related objection in more provocative terms. His declaration that music is "by its very nature, essentially powerless to express anything at all" has often

been read as a denial of musical expression. He later clarified the statement by saying that "music expresses itself." Both formulations defend the autonomy of musical organisation from verbal meanings, psychological moods, and extra-musical representation.

For Stravinsky, the problem concerns the tendency to assign music an expressive content that can be translated into words. Such translation may encourage performers to impose private emotional narratives on the work. Performance then becomes an act of psychological commentary, and the work's rhythmic, formal, and sonorous organisation recedes.

The warning is useful. Metaphorical interpretation can produce emotional inflation. A short phrase becomes a tragedy; a harmonic tension becomes existential struggle; every cadence acquires a narrative of death and rebirth. Repeated use of such language may establish a stable set of clichés rather than opening new possibilities of performance.

Stravinsky's position, however, does not remove metaphor from practice. His own writings and performance instructions rely on concepts of energy, accent, movement, weight, precision, and character. These terms also organise musical action through transferred relations. The dispute concerns the scale and authority granted to metaphor. Metaphorical language may function as a local performance tool without claiming to define the work's final meaning.

3. Sonic materialism

A third objection emerges from approaches that emphasise the materiality of sound. Here the primary terms are vibration, resonance, noise, timbre, intensity, duration, force, and sensory presence. Sound is treated as an event with material consequences rather than as a carrier of semantic content.

From this position, metaphor may appear to domesticate sonic experience. An unfamiliar timbre is quickly classified as a voice, landscape, emotion, or narrative. The classification makes the sound intelligible, yet it may also suppress qualities that resist familiar categories. The listener hears what the metaphor prepares them to hear.

This objection has particular relevance for experimental music and sound art, where practices often cultivate forms of listening directed towards spectral detail, acoustic space, vibration, noise, and technological mediation. A strong interpretative image may reduce the openness of such materials by placing them within an established human narrative.

At the same time, material descriptions are rarely neutral. Terms such as force, texture, density, grain, attack, decay, pressure, and resonance already organise sensation through concepts drawn from bodily and physical experience. Sonic materialism changes the dominant vocabulary, but it remains involved in processes of framing and selective attention. Its value for the present argument lies in recalling that metaphorical interpretation begins from sounding material and returns to it.

Operation and validity

These objections identify real limitations. Metaphors can become clichéd, prescriptive, sentimental, culturally narrow, or musically inert. They can stabilise one interpretation too early. They can direct attention away from significant features of the score or sounding event. They may impose the teacher's associations on a student whose experience is organised differently.

The central claim of this study is procedural. Performance is already organised through concepts such as line, weight, energy, direction, balance, tension, release, character, gesture, and articulation. Many of these are conventional metaphors whose effects have become difficult to notice. The relevant question concerns how a metaphor operates, which relations it activates, and what consequences it produces in playing and listening.

This shifts the problem of validity. A performance metaphor cannot usually be judged by literal truth. Beethoven's music is not physically heavy, a phrase does not breathe, and a cadence does not arrive at a geographical destination. The metaphor establishes a provisional relation whose consequences can be examined.

Several criteria may guide such examination. A productive metaphor can: make musical relations perceptible; generate an audible change in performance; coordinate several parameters of playing; establish a viable bodily disposition; remain responsive to the score and sounding result; support coherence while preserving interpretative complexity; and open possibilities for further experimentation.

These criteria combine pragmatic and aesthetic forms of evaluation. The seminar discussion formulated the pragmatic version directly: if metaphor is a tool, its value may be assessed through what it enables. The performer's image of a pink elephant may appear arbitrary, yet its relevance depends partly on the Beethoven performance it produces.

The pragmatic criterion cannot stand alone. A metaphor may solve a local technical problem while flattening other aspects of the work. It may generate a powerful effect achieved through stylistic distortion or structural simplification. Evaluation therefore remains connected to the score, historical and stylistic knowledge, the performer's artistic aims, and the perceptible musical result.

The metaphor's validity is consequently situated. It concerns the relation among an image, a musical object, a performer, and a concrete performance situation. A metaphor may be productive for one passage, performer, or stage of work and lose its force in another context. Its provisional status forms part of its method.

The case studies that follow approach this question experimentally. They examine metaphors through their capacity to modify perception, bodily disposition, and playing. Their validity will be considered through the musical possibilities they produce, the constraints they expose, and the knowledge that emerges from the experiment.

III. METAPHOR IN ACTION – Somathemes and performance experiments

From sign to body: Roland Barthes' somathemes

The preceding sections have argued that metaphor can organise musical perception and action. A further question remains: through what mechanism does an imagined relation acquire bodily force? Roland Barthes' concept of the somatheme offers a useful point of departure.

The concept appears in Barthes' essay Rasch, where he attempts to describe musical experience at a level preceding stable interpretation or symbolic meaning. There he writes:

"Such are the figures of the body (the 'somathemes'), whose texture forms musical signifying … These figures of the body, which are musical figures, I do not always manage to name. For this operation requires a metaphorical power (how would I utter my body except in images?), and this power can occasionally fail me."

Several aspects of this formulation are relevant. First, Barthes relocates musical meaning from the domain of fixed signification towards what he calls signifying: a bodily, affective, and processual production of meaning. Second, metaphor occupies a central position in this process. The body becomes accessible through images. Third, musical understanding emerges through figures that are simultaneously corporeal and semiotic.

A somatheme may be understood as a minimal unit of embodied affective intensity. In the same way that a phoneme functions within spoken language and a morpheme within linguistic meaning, the somatheme designates a recurring bodily configuration within

musical experience. Barthes describes such configurations through images of stretching, falling, swallowing, exploding, weaving, hammering, caressing, speaking, and breathing. The important point is that these figures cannot be reduced either to abstract meaning or to pure physical sensation. They occupy an intermediate zone connecting signification and corporeality.

This intermediate status makes the somatheme particularly relevant for performance. A performer may begin with an explicit image: a gesture, a character, a force, a physical sensation, or a metaphor. As performance unfolds, the image frequently recedes from conscious attention. What remains is a bodily organisation of timing, gesture, touch, energy, and listening. The metaphor has already done its work. It has established a mode of attention and action.

From the perspective developed here, metaphor can therefore function as a transducer between symbolic structures and somatic intensities. This interpretation finds support in Barthes' own formulation. The body becomes available through metaphorical images, while musical meaning acquires bodily presence through somathemes. As Paulo de Assis observes, the concept seems to call for further development as part of a renewed musical semiotics centred upon embodiment, desire, and performance.

The notion of somathemes also offers a way of understanding why performance metaphors often prove effective even when performers cease actively thinking about them. Their function is not exhausted at the level of conscious reflection. They establish bodily conditions which continue operating throughout performance.

Case Study I: Antonio Pappano and Embodied Musical Dramaturgy

In May this year, I attended a performance of Verdi's *Macbeth* conducted by Antonio Pappano at the Royal Opera in Copenhagen. The experience left a strong impression. Orchestra, singers, and audience appeared to participate in an unusual level of concentration and immediacy. The performance raised a practical question: how was such a result produced during rehearsal?

Subsequent encounters with Pappano's rehearsal demonstrations and educational videos suggested a possible answer. Again and again, one encounters a musician who communicates through bodily images, dramatic situations, vocal demonstration, and expressive gestures.

Pappano's background as pianist and répétiteur is important here. A répétiteur spends much of his professional life assisting singers in the construction of dramatic characters. Musical phrases are connected to situations, motivations, actions, and gestures. Meaning is continually translated into vocal and bodily behaviour.

Pappano appears to transfer this practice into orchestral conducting. Musical events are treated as forms of action. Orchestral gestures acquire dramatic weight. Motivic processes are animated through images, metaphors, and physical demonstration.

A particularly revealing example appears in Pappano's discussion of Wagner's *Siegfried*.

Link to video: https://www.youtube.com/watch?v=Vi4KZf3LzZo

Musical motives become associated with contemplation, poison, the dragon, Mime's nervous behaviour, obsession, hammering, longing, and desire. These descriptions do not function as analytical categories in the traditional sense. They create a dramatic and bodily field within which performers can act.

What is striking is the manner in which the metaphor is communicated. Pappano rarely confines himself to verbal explanation. He sings, gestures, changes facial expression, alters posture, and physically enacts the musical process. The metaphor enters the rehearsal through voice and body. Meaning appears as a mode of action.

From the perspective of somathemes, one might say that Pappano continually activates corporeal figures embedded within the musical material. A motive becomes hammering; another becomes hesitation; another desire; another nervous agitation. The performers do not merely understand these descriptions. They enact them.

This example raises an important question. A detailed metaphor can provide a powerful shared framework for ensemble performance. At the same time, it can potentially restrict interpretative freedom by directing attention towards one particular image.

The issue emerged repeatedly during our seminar discussions. In pedagogical contexts, one may distinguish between two situations. A teacher may temporarily invite a student to inhabit a specific image in order to explore its consequences. Alternatively, the teacher may encourage the student to develop independent images. In both cases, metaphor functions as a means of generating performance possibilities rather than as a final explanation of the work.

Pappano's practice is most convincing when understood in this way. His metaphors function as rehearsal operations. They align attention, bodily disposition, gesture, timing, and ensemble interaction. Their value derives less from interpretative correctness than from their practical efficacy.

Case Study II: Beethoven's Hammerklavier as Extreme Virtuosity

No work occupied a more central position in my investigations of metaphorical performance than Ludwig van Beethoven's Piano Sonata Op. 106, the Hammerklavier.

The first movement carries Beethoven's notorious metronome indication of minim = 138. For more than two centuries, this marking has been regarded as impracticable, erroneous, or incompatible with the movement's musical substance. Although a small number of performers and commentators have defended Beethoven's number, most performances continue to proceed at considerably slower speeds. The history of the debate reveals a remarkable consistency. Ignaz Moscheles described Beethoven's tempo as producing "so fearful a prestissimo as Beethoven could never have intended." Edwin Fischer regarded the speed as incompatible with the expressive and harmonic character of the movement. Even sympathetic defenders such as András Schiff describe the indication as "virtually unplayable", while simultaneously maintaining that approaching Beethoven's speed reveals music that is "revolutionary and explosive" and emphatically "not made of lead." Charles Rosen, likewise, rejected the image of the sonata as a musical monument and described the movement as "an explosion of energy."

What emerges from these discussions is a disagreement that extends beyond tempo. The issue concerns the identity of the work itself. Is the movement fundamentally monumental, architectural, and weighty, or is it volatile, impetuous, and driven by kinetic energy? Answers to the tempo question often follow from prior assumptions about the nature of the music.

The Experimental Analogy

My own approach emerged within an artistic research project entitled HammerklavierX Project. The project was not originally conceived as an investigation of Beethoven's metronome indication. Its primary concern was the role of analogy and metaphor in musical interpretation. The broader question was how different imaginative configurations alter a performer's relation to a relatively stable musical object.

Within the project, Beethoven's score functioned as that stable object. Metaphors, performance attitudes, bodily dispositions, stylistic transfers, dramatic situations, and interpretative constraints were treated as variables. Through repeated experimentation, the sonata was approached through continually changing conceptual lenses.

One such experiment involved approaching the first movement through works of extreme virtuosity, in particular Mily Balakirev's Islamey and Maurice Ravel's Scarbo. The purpose was neither stylistic imitation nor historical comparison. The experiment explored whether performance habits associated with extreme virtuosity might disclose possibilities latent within Beethoven's score.

The comparison revealed a striking asymmetry in pianistic expectations. In performances of Scarbo, qualities such as explosive energy, rapid transfers of momentum, extreme velocity, gestural projection, temporal flexibility, and occasional obscuring of detail are generally accepted as part of the work's expressive identity. A listener readily tolerates instability, risk, and intermittent loss of transparency because these qualities belong to the character of the piece. In many performances of the Hammerklavier, by contrast, one encounters ideals of monumentality, solidity, steady pulse, comprehensive clarity, and continuous control.

The decisive difference lies in the performative logic through which the notes are realised.

Bodily Retuning

The most significant consequences emerged at the level of bodily organisation. As the analogy with Scarbo became operational, expectations concerning effort, control, velocity, and projection began to change. Attention shifted away from the articulation of individual notes and towards larger gestural units. Extreme speeds ceased to appear as exceptional events requiring special justification and instead became integrated into the movement's expressive vocabulary. Greater flexibility in local timing became imaginable, while the acceptance of volatility and risk increased considerably.

What changed was not simply an interpretation of the work but a way of inhabiting it. Breathing, muscular readiness, anticipation, and the distribution of energy across larger spans were reorganised. Passages that had previously been experienced as technical obstacles gradually began to function as energetic trajectories. The movement acquired a different temporal profile, characterised by propulsion, acceleration, release, and intermittent eruptions of force.

The analogy operated in a manner closely related to the somathemes discussed in the previous section. It began as an explicit metaphor, yet its most important consequences emerged below the level of continuous reflection. Once established, the image no longer required active verbal rehearsal. It persisted as a bodily disposition. The performer's relation to the work had been altered.

From this perspective, the analogy functioned as a form of bodily retuning. It prepared the performer for a different mode of action. The opening movement ceased to appear primarily as a monumental architectural construction and instead emerged as a highly volatile field of energetic processes, marked by rapid transformations, sudden releases of force, and moments of almost excessive intensity.

An Unforeseen Historical Insight

The most surprising result of the experiment concerned Beethoven's metronome indication itself. The project was not conceived as an intervention in debates concerning historically informed performance, nor was it designed to determine whether minim = 138 represents Beethoven's genuine intention. The question emerged indirectly through the process of experimentation.

As the analogy with Scarbo became increasingly embodied and the corresponding performative logic stabilised, Beethoven's tempo began to appear in a different light. What had initially presented itself as an almost impossible external demand gradually became integrated into the musical and bodily organisation of the movement. The issue was no

longer how to force an established interpretation towards Beethoven's indication. Rather, the indication itself began to function as a point of orientation within a newly emerging interpretative framework.

The change was less a matter of speed than of plausibility. Within the conventional image of the Hammerklavier as monumental, architectonic, stable, and comprehensively controlled, Beethoven's metronome mark appears difficult to reconcile with the musical material. The closer one moves towards minim = 138, the more severe the tension becomes between the desired tempo and the interpretative means used to realise the movement. Clarity, solidity, weight, and the projection of every detail eventually generate what might be called a practical and imaginative ceiling.

The analogy with extreme virtuosity altered these conditions. Musical values that are readily accepted in works such as Scarbo or Islamey—volatility, intermittent bursts of energy, rapid transfers of momentum, gestural projection, fluctuating local tempos, and occasional obscuring of detail—became available within Beethoven's score. Once these elements entered the performance, minim = 138 ceased to appear as a violation of the movement's character. It emerged as a possible consequence of a different character.

The experiment therefore suggested a reformulation of the problem. Much of the historical discussion proceeds from a relatively stable conception of the movement and asks whether Beethoven's tempo can be accommodated within it. The present investigation reversed the direction of enquiry. Instead of adjusting the tempo to fit an established interpretation, it explored what kind of interpretation might render Beethoven's tempo intelligible.

This shift carries broader implications. The perceived impossibility of a tempo may not reside exclusively in the metronome number itself. It may emerge from a network of assumptions concerning musical character, bodily comportment, pianistic behaviour, and expressive priorities. Tempo and interpretation are therefore not independent variables. They participate in a single configuration. Altering one element of that configuration may transform the status of another.

The resulting insight emerged without being explicitly sought. It arose from the experimental process itself. In Rheinberger's terms, the experiment generated an epistemic object that had not been present among its initial goals. A project concerned with analogy and metaphor unexpectedly produced a new perspective on one of the most persistent questions in Beethoven performance practice.

Experimental Systems and the Production of the Unknown

This outcome can be understood through the notion of the experimental system developed by Hans-Jörg Rheinberger and subsequently adapted to artistic research by Paulo de Assis. Experimental systems operate through the interaction of stability and variation. Certain elements remain constant while others are systematically altered. Their purpose lies less in confirming prior propositions than in creating conditions from which unforeseen relations may emerge.

Within HammerklavierX Project, Beethoven's score provided the principal point of stability. Metaphors, analogies, bodily attitudes, dramatic scenarios, stylistic transfers, and interpretative constraints operated as variables. Through repeated reconfiguration of these variables, the performer's relation to the work was continually transformed.

Metaphor occupied a central position within this process. It functioned as an experimental parameter capable of reorganising perception, bodily disposition, attention, and action. The comparison with Scarbo represents only one iteration within a much larger sequence of experiments. Its significance derives from the fact that it produced consequences that could not have been specified in advance.

Rheinberger famously describes experimental systems as machines for producing the not-yet-known. The present case provides a particularly clear example. A project initially concerned with metaphor and interpretation unexpectedly generated a new perspective on one of the most persistent problems in Beethoven performance practice.

What the Case Demonstrates

The Hammerklavier experiment demonstrates that metaphors can operate simultaneously at perceptual, bodily, technical, and interpretative levels. They reorganise attention, alter gesture, redistribute energy, and reshape temporal expectations. Through these operations they can destabilise inherited traditions and expose possibilities that remain inaccessible within more established frameworks.

More importantly, the case suggests that metaphor may play a productive role in artistic knowledge production. The experiment did not simply produce a different interpretation of Beethoven's sonata. It generated a different way of approaching a longstanding historical problem. The resulting insight emerged from the relation established between Beethoven and a repertoire of extreme virtuosity through an analogical procedure.

From this perspective, metaphorical transduction participates directly in the production of artistic knowledge. Through the continual reconfiguration of relations between score, performer, body, and sound, metaphor opens new trajectories of experimentation. Some lead only to local interpretative variations. Others reveal previously unrecognised possibilities within a work and occasionally generate insights with broader historical, analytical, or performative implications. The value of such insights is determined through their consequences in musical practice and their capacity to illuminate previously inaccessible aspects of the work under investigation.

IV. METAPHORICAL IMAGINING AS PERFORMANCE TECHNIQUE

From pianistic poetry to operative technique

Pianists frequently speak about performance through stories, colours, voices, characters, landscapes, gestures, movements, and emotions. Such statements are often received as descriptions of artistic personality, pedagogical inspiration, or the private imagery surrounding a performance. The preceding case studies suggest a more technical reading. These images may report processes through which performers organise perception, anticipation, bodily readiness, and playing.

The term technique is commonly associated with observable physical capacities: coordination, velocity, independence, strength, balance, and control. These capacities depend upon prior organisations of attention and intention. Before a movement is produced, the performer has already selected certain relations as relevant. A phrase has been heard as continuous or fragmented, directed or static, vocal or percussive, stable or volatile. These perceptual organisations affect how the performer prepares and executes the movement.

Ben Spatz's theory of embodied technique provides a useful framework here. In What a Body Can Do, Spatz develops an epistemology in which technique is understood as embodied knowledge that structures practice. Practice is the concrete field in which techniques are applied, transmitted, modified, and discovered. This approach gives embodied procedures an epistemic status and places them within the domain of research.

Applied to musical performance, this means that metaphorical imagining can be studied as technique. The relevant images are learned, practised, shared, adapted, and tested. They can

become stable components of a performer's work or temporary interventions introduced to disrupt habitual patterns. Their effects concern the organisation of listening, action, and sound.

This perspective helps clarify the status of the remarks by Horowitz, Cortot, Haskil, Rosen, Neuhaus, and Schiff discussed earlier. Their stories, colours, landscapes, and vocal images need not be treated as secondary comments added after the work of interpretation. They may describe elements of the work itself: procedures through which abstract musical relations acquire perceptual and bodily form.

The difference between an evocative statement and an operative metaphor lies in what happens next. An image becomes technically relevant when it changes the manner in which a performer hears, prepares, moves, and plays. It may alter the scale of gesture, the distribution of weight, the hierarchy of voices, the anticipation of a cadence, the temporal relation between events, or the quality of an attack. When such changes become repeatable, transmissible, and open to variation, they can be investigated as embodied technique.

Spatz's formulation of embodied research is relevant for the same reason. The site's description of his work states that technique can be understood as both training and research, with practice serving as a site of historical and ongoing knowledge production. The fundamental question, adapted from Spinoza and placed at the centre of Spatz's book, is: What can a body do? For the present study, this question may be specified further: What can a performing body do when its relation to a score is altered through metaphor?

A model of metaphorical transduction

The examples discussed throughout this article permit a provisional model of metaphorical transduction. The model distinguishes several dimensions of the process while recognising their constant interaction.

1. Encounter with the musical material

The process begins with an encounter involving the score, previous performances, historical knowledge, technical habits, instrumental conditions, and established interpretative traditions. The performer never approaches a neutral object. The work is already surrounded by accumulated images, norms, and expectations.

In the case of the Hammerklavier, these included monumentality, weight, architectural coherence, steady pulse, and comprehensive clarity. Such concepts were already embedded in bodily habits. They determined which actions appeared natural, appropriate, difficult, or impossible.

2. Metaphorical proposition

A metaphorical proposition introduces a different relation: play the phrase as speech; hear the texture as an orchestral sonority; approach the movement as extreme virtuosity; continue the Wagnerian world in another repertoire; treat the motif as poison, desire, or nervous agitation.

The proposition may arise from a teacher, a performer, another artwork, a theoretical text, or an accidental perception. It can also be deliberately introduced as an experimental variable. At this stage, the metaphor remains explicit and available to reflective thought.

3. Selective projection

The source domain contains many possible qualities, while the performance activates only some of them. Hearing a phrase as speech may foreground breath, inflection, address, articulation, and the distinction between structural and expressive accent. Approaching Beethoven through Scarbo may activate velocity, volatility, flexibility, gestural continuity, and rapid energetic transfer.

This projection is necessarily selective. The source is neither reproduced as a whole nor applied through a stable code. Particular relations become relevant within a particular performance situation.

4. Perceptual reorganisation

The selected relations modify what the performer hears in the musical material. Previously separate notes may become one gesture. A transition may acquire dramatic consequence. A secondary voice may appear as a speaking character. A difficult passage may emerge as a trajectory of energy rather than as a collection of technical obstacles.

Perceptual reorganisation therefore changes the field within which technical decisions are made. It establishes new units, continuities, hierarchies, directions, and tensions.

5. Somatic activation

The altered perception enters bodily organisation. Breathing, posture, muscular tone, nervous activation, anticipated gesture, touch, and the distribution of effort are modified. At this point, the explicit image may begin to recede. Its relations persist as corporeal disposition.

Barthes's somathemes provide a useful description of this dimension. The performer's body becomes organised through figures of pressure, expansion, hesitation, weight, eruption, suspension, caress, or release. These figures operate within musical action without requiring a complete verbal account during performance.

6. Realisation through the instrument

The bodily disposition is realised through playing. Its effects appear in timing, articulation, voicing, dynamics, pedalling, sound production, attack, release, texture, and projection. The instrument participates actively in this stage. Its resistance, mechanism, resonance, and acoustic possibilities shape what the metaphor can produce.

The resulting performance is therefore generated by an assemblage involving score, image, body, instrument, acoustic environment, and historical practice. Metaphor changes relations within this assemblage.

7. Audible expression

Listeners encounter the result as a particular organisation of sound. They may perceive character, movement, gesture, dramatic force, instability, continuity, or expressive intention. They need not know the performer's initiating metaphor. The metaphor's effects may remain audible after the image itself has disappeared from view.

8. Recursive feedback

The sounding result returns to the performer through listening. It may confirm, modify, weaken, or complicate the original image. A metaphor initially concerned with physical weight may produce an unexpected temporal effect. An image of speech may disclose a structural relation. A bodily sensation may lead to a new analytical understanding.

Metaphorical transduction therefore operates as a recursive circuit. Score, image, perception, body, playing, and sound continually modify one another. The eight dimensions above present an analytical distinction within a process that remains dynamic in practice.

Metaphor as a technique of consciousness

Pianists devote extensive time to the cultivation of physical technique. They practise repeated movements, compare fingerings, regulate muscular effort, and develop increasingly precise forms of coordination. Metaphorical technique can likewise be cultivated. It concerns

the ability to reorganise musical attention and bodily readiness through an imagined relation.

Metaphorical technique includes the capacity to generate alternative images, enter unfamiliar source domains, and sustain an as if long enough for its consequences to emerge. It also involves mobility between identification and reflective distance. A performer may inhabit an imagined situation intensely, observe it as a theatrical construction, or move between these modes during the same performance.

Another component is the ability to let an image become bodily. Some metaphors remain verbal descriptions with few consequences for playing. Others alter posture, breathing, anticipation, and gesture almost immediately. The performer can learn to observe these differences and work deliberately with the mediating process.

Metaphorical technique further includes the capacity to use another person's image provisionally. A teacher's metaphor may initially appear foreign or unconvincing. Entering it as an experiment permits an evaluation based on its effects. The performer borrows the image, explores the resulting field of action, and retains, transforms, or rejects it.

This provisional use of images is important because metaphors tend to become sedimented. A once-productive image may harden into habit and eventually restrict perception. Introducing a different source domain can disrupt this sedimentation. The performer's established relation to the work becomes unstable, allowing previously obscured relations to emerge.

Differential repetition plays a central role here. The same passage can be repeated through changing images, affects, characters, physical attitudes, and stylistic transfers. Repetition traces a spiral rather than a closed circle: each return takes place under altered conditions. The work remains recognisable, while the performer encounters different potentials within it.

Spatz's concept of phenomenotechnical analysis offers a corresponding research method. In Colors Like Knives, Spatz applies Hans-Jörg Rheinberger's epistemology to a detailed analysis of embodied practice, examining eleven minutes of performance in what he calls a phenomenotechnical mode. The method seeks to articulate the technical and epistemic organisation of practice through close analysis and audiovisual documentation.

A phenomenotechnical account of metaphorical performance would attend closely to what an image produces. It would examine changes in listening, muscular organisation, gesture, timing, and sound. The account would remain near the practice while making its operative structures academically legible. The practitioner occupies a privileged position because some aspects of embodied technique are available from within the practice. That privilege remains contestable and requires documentation, comparison, and critical articulation.

Three questions, adapted from Spatz's framework, are useful when examining metaphorical technique:

Is it transmissible? Can the technique be communicated, demonstrated, adapted, or learned by another performer?

Is it new? Does it produce a relation, action, or understanding that was previously unavailable within the practice?

What can it do? Which perceptual, bodily, technical, or artistic consequences follow from its application?

These questions move the enquiry away from the private truth of an image and towards its operation within practice.

Criteria for productive metaphors

A performance metaphor cannot usually be evaluated according to literal truth. A phrase does not physically breathe, a chord possesses no geographical weight, and Beethoven's first movement is not Ravel's Scarbo. The relevant evaluation concerns the relations and actions produced by the metaphor.

A metaphor becomes productive when it generates an audible and embodied difference. It may disclose relations in the score, coordinate several parameters of playing, produce a viable bodily organisation, or enable the performer to negotiate a technical problem through a different configuration of forces. Its effects should remain accessible through listening and performance.

Responsiveness to the musical object provides another criterion. The metaphor should interact with pitches, rhythms, textures, formal relations, historical materials, instrumental affordances, and the sounding result. It may place these elements under pressure or expose unfamiliar possibilities within them. A metaphor that makes the musical material irrelevant has limited value for interpretation.

Productive metaphors also preserve a degree of complexity. They open trajectories of action while allowing the work to resist complete assimilation. A strong metaphor frequently produces partial correspondence and productive friction. Some aspects of the source domain transfer easily; others meet resistance. The resistance can disclose features of the musical material that the metaphor initially failed to account for.

Technical viability remains a practical consideration. An image may produce a compelling idea while generating excessive tension, unstable coordination, or an unsustainable mode of playing. In other cases, a metaphor may reduce effort and reveal a more efficient organisation. The body and instrument provide feedback on what the proposed relation can sustain.

Metaphors become less productive when they remain verbally elaborate but physically inert, simplify the musical material, suppress significant features of the score, or establish a fixed narrative that replaces attentive listening. Familiar metaphors may operate as unquestioned clichés. Their conventional status can conceal the extent to which they organise hearing and performance.

The value of a metaphor is therefore situated. An image may prove productive for one performer, passage, concert, or phase of work and lose its force elsewhere. Its provisional status permits continued experimentation. Artistic evaluation enters through the resulting performance, while historical, structural, technical, and pedagogical perspectives provide further forms of critique.

Pedagogical implications

Metaphorical instruction presents a specific pedagogical problem. The effectiveness of an image depends on personal history, cultural experience, sensory memory, and bodily organisation. The same metaphor can activate very different responses in different students.

The seminar discussion offered a clear example. A singing student was asked to perform a passage with anger. The general instruction produced little change. When the teacher connected the situation to the student's concrete experience as an angry mother, the voice and body changed immediately. The image became effective when it activated an experientially available configuration. Its force derived from a relation already present in the student's embodied memory.

This suggests that metaphorical teaching requires diagnostic attention. The teacher must observe whether the source domain has practical meaning for the student. An image of rowing, dancing, public speaking, falling, embracing, or orchestral playing will produce little if the relevant experience is absent or organised differently.

A teacher may therefore work in several ways. One approach offers a specific image and invites the student to inhabit it temporarily. Another begins with the student's own associations. A third presents several contrasting metaphors and compares their consequences. These procedures cultivate an ability to move among interpretative configurations.

The teacher's image should retain an experimental status. A student may initially borrow it, explore its consequences, and gradually develop an independent metaphoric vocabulary. Pedagogical success does not depend on the student reproducing the teacher's private association. It depends on the emergence of new perceptual and musical capacities.

Metaphorical competence includes the ability to generate images, test them through playing, observe bodily effects, listen critically to the result, and revise the initial proposition. It also includes sensitivity to the cultural and personal conditions under which metaphors operate. Such competence can be developed alongside aural, analytical, historical, and physical aspects of instrumental teaching.

Conclusion: articulating an embodied technique

This article began with practical situations. Leon Fleisher connected Beethoven's 6/8 rhythm to fluid movement and memory. Listening to Wagner before a concert established a performative disposition that could be carried into unrelated repertoire. Alfred Cortot asked a student to “dream” Schumann's Der Dichter spricht. Antonio Pappano activated dramatic and bodily figures in Wagner through speech, singing, gesture, and facial expression. In the HammerklavierX Project, an analogy with extreme virtuosity reorganised the bodily and interpretative conditions under which Beethoven's metronome marking could be approached.

Across these examples, metaphor operates between symbolic structure and embodied performance. It transfers a configuration of relations, reorganises perception, and participates in the formation of bodily action. Its consequences become audible in timing, gesture, articulation, voicing, texture, dynamics, and sound.

This operative dimension of metaphor belongs to performance technique. It is frequently transmitted orally, through imitation and demonstration, and leaves limited traces in scores or recordings. The sounding result may conceal much of the process that generated it. Performer testimony, rehearsal documentation, comparative experiments, phenomenological description, and audiovisual analysis can bring aspects of this technique into view.

Spatz's work is important in this context because it treats embodied technique as knowledge and asks how such knowledge may become transmissible and academically legible. His phenomenotechnical method further suggests that practice can be analysed at the level of its technical operations, using detailed documentation to articulate how embodied knowledge is produced. Audiovisual methods, including forms of annotated or “illuminated” video, may be especially useful because they allow textual reflection to interact directly with the temporality of embodied practice.

The practitioner has a particular access to these processes, since some dimensions of attention, anticipation, effort, and sensation are available from within the act of playing. This access requires critical mediation. First-person experience must be placed in relation to recordings, scores, historical materials, other performers, and perceptible musical outcomes. Such work can make the practitioner's knowledge contestable without removing its situated character.

Metaphorical transduction offers one framework for this articulation. It describes a recursive process in which signs, images, bodily dispositions, instruments, and sounds continually modify one another. The process remains open because every metaphor selects certain

relations and leaves others unexplored. A new image can disturb sedimented habits and initiate another trajectory through the work.

The article has asked what a metaphor does in musical performance. The examples indicate several functions. Metaphors focus attention, organise bodily readiness, coordinate technical parameters, activate affective configurations, transmit pedagogical knowledge, disturb inherited conventions, and generate experimental insight. Their efficacy varies, and their consequences remain available for artistic and critical evaluation.

The wider research task is to develop methods capable of describing these operations with sufficient precision. Such methods should remain close to embodied practice while producing claims that can be shared, questioned, and tested. This involves sustained documentation of how particular metaphors affect particular bodies, instruments, musical materials, and performance situations.

To study metaphorical transduction is therefore to examine the processes through which interpretation becomes action: signs acquire bodily force, imagined relations organise playing, and the score is actualised in sound.

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