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Chapter 13: Feeling the score – towards an *Interactional* and *Bio-topical Performative Analysis*

In Western Art Music, the preservation of music across centuries is accomplished mainly through notation. The score is a skeleton of musical thought which is revived into an experience affording sonic (and visual) environment by means of a performer. Bringing a notated structure to life is a central concern in musical practice and involves an act of embodied realisation and varying degrees of creative assessment and interpretation. Such performative mediation leads to microstructural adaptations or (re-)constructions in terms of parameters such as rhythmic grouping, melodic grouping, metric accents, tempo, dynamics, timing, duration and articulation, and engages various levels of conscious, intuitive or habitual involvement.

On the intentional level and in systematic terms, the primary distinction between *performative* and *hermeneutic* or *critical interpretation* has already been introduced in Chapter 2: critical interpretation "ascribes, explains, and relates, aiming to provide an account of a work's import and functioning, both local and global" (Levinson, 1993, p. 34), whereas performative interpretation is "a considered way of playing a piece of music involving highly specific determinations of all the defining features of the piece as given by the score and its associated conventions of reading" (Levinson, 1993, p. 36).

A tool that is generally called into support of either of these two interpretative modes is *musical analysis*; in this chapter, the focus is on exploring the possibility of devising an experience- and practice-proof apparatus for creative performative musical analysis as viewed from the tenets of a *Bio-Culturally informed Performers' Practice* (see 10.3). The most characteristic element of such an approach is that an analytical focus on interactive and transactional affordances occasions a shift where no longer the score, but the body, as the primary cause of the musical environment and as an amplifier of a coded sonic environment, becomes the prime intentional object of analysis.

To arrive at such an analytical framework, firstly, the state of the field will be assessed, followed by a punctual presentation of seven selected Information Units that pertain to the BCiPP attractor-domain of 'interaction'. The recontextualisation of these IUs in the field of performance and a proposal for reproducing them via a practical tool precede the chapter-close which presents an *Interactional* and *Bio-topical Performative Analysis* and rendition of Chopin's Mazurka op.67 nr.4.

13.1 A reservoir of analytical tools

Performative analysis of some kind is an intricate part of every musician's personal theory. Musicians in the early stages of study, having no advanced theoretical understanding of music, rely on visual, motor and aural memory when assimilating new pieces but also establish primitive and practical proto-

conceptual landmarks in larger-scale compositions; these structural elements relate to a personal assessment of the affective development of the composition, the main structural sections, the visual presentation of the score, or more punctual technical elements such as particular hand positions or tessiture-related aspects (highest note, lowest note). Next to individual strategies, the communication between teacher and student soon starts to involve elements of proto-analysis when a particular piece is discussed in terms of its expressive potential. Often, these communications imply a personal set of habitually encountered affective states (e.g. dreamy, happy, sad), events (e.g. wedding, royal crowning, funeral) or imaginative metaphors which refer to environmental factors (e.g. fountains, rivers, woods).

From a functional perspective, these primitive types of performative musical analysis are not only instrumental in learning and memorizing new pieces, or in developing *style*-awareness via comparative analysis, they also provide guidance during the act of performance; they allow for the prevention of choking and facilitate an attention-management that focuses on what is going on in the music (external focus) rather that on internal thoughts (self-monitoring – internal focus) (Beilock & Carr, 2001; Green & Gallwey, 1987). However, and next to these practical roles, the ultimate ambition of analysis would be its contribution to performative imagination and creativity: analysis should provide an opportunity to approach the score from an unexpected angle and to challenge habitual inferences and intuitions, and lead them into novel configurations. This functionality is akin to the role of experimentation in physics: via the instruments of science natural phenomena transform into scientific phenomena which can then be further studied and related.

This latter functionality opens possibilities for a link with the field of music theory, aesthetics and critical analysis which is a vast and differentiated terrain but converges around the central aim of discovering (or imposing) and classifying structure and intrinsic relations in a musical work. Within that general field of enquiry, each form of analysis develops specialised tools that target specific musical parameters (pitch, melody, rhythm, harmony) or large scale developments within a composition (form, narrative, motives, themes) (Cook, 1987, p. 9).

The relation between analysis and performance is a long-standing issue of debate and the positions range from perspectives that advocate *analytically informed performances* over *performatively informed analyses* to perspectives that shun analysis in the context of performance altogether (Hatten, 2010). The first variant is a rather prescriptive approach that entails a conception of the work as ideal object that must be precisely manifested in all its structure by a subservient performer who merely realizes its designs in sound. Music theorist Wallace Berry advocates this one-sided perspective in his 1989 textbook, *Musical Structure and Performance* (Berry, 1989). The programme of *performatively informed analyses* considers the score as a *text* or a *script* as opposed to an analytically fixed *work*. Within this context, new gestural syntheses may be discovered that engage the performer's best

instincts for phrasing as well as the analyst's hierarchical analysis of compositional units or segments. Examples of such negotiations can be found in the cooperating venture between music theorist Daphne Leong and flutist Elizabeth McNutt (Leong & McNutt, 2005) and in the performance based mappings that pianist Alessandro Cervino presents in his doctoral dissertation *Mapping the Performer's Creative Space: an exploration in and through piano playing* (Cervino, 2012). The third and most critical voice in the debate on the relation between analysis and performance is most clearly represented by musicologist Carolyn Abbate and music educator Christopher Small. Abbate has criticized hermeneutic and even performative approaches as being all too *gnostic* in their pursuit of hidden and metaphysical meanings.[391] In place of these studied and symbolic abstractions that aim at making the opaque transparent, she notes that actual performance foregrounds elements of a more *drastic* and physical nature involving a category of knowledge that flows from actions or experiences and not from verbally mediated reasoning (Abbate, 2004). Music is not something to be said, but to be played (Jankélévitch, 1961/2003, p. xvi). In the same vein Small has argued against the focus in the Western classical tradition on musical works and the relegation of performance to a subordinate status which, according to Small, has had an impoverishing effect on musical experience. He concludes quite provocatively that "performance does not exist in order to present musical works, but rather musical works exist in order to give performers something to perform" (Small, 1998, p. 8). With this statement, Small adheres to a bio-cultural approach to music where a performer is considered to be the first cause of creating an environment and where the specific situation of Western Art Music with its differential roles attributed to performer and composer are considered to be but a cultural particularisation of a dyadic and interactional relation between art-maker and the art-experiencer. Such a perspective, however, does not erase the reality of score-based performance where a coded script is an essential element of the particular situation; an element that needs to be adequately approached in function of a musical experience.

Within all these orientations a persistent challenge presents itself with regard to the relevance of systematic analytical work to performance. Attempts to close the gap between performance and analysis include Heinrich Schenker's thinking where music is considered as a class of human experience with as its most fundamental layer a sense of directed motion towards an ending-point. By analytically stripping away inessentials such as surface form and claiming access to primary elements of experience, Schenker comes close to a modus operandi akin to the process of phenomenological reduction (Cook, 1987, p. 67). Likewise related to this urge for general and experience-based principles are the psychological approaches to analysis that arise most prominently in the second half of the twentieth century (Cook, 1987, pp. 67–115). In *Emotion and Meaning in Music* (Meyer, 1956),

[391] The opposition between drastic and gnostic is borrowed from Jankélévitch (1961/2003).

composer and philosopher Leonard Meyer combines *Gestalt Theory*[392] and pragmatic, consequentialist theories to come to an understanding of emotion and meaning in music as resulting from the frustration of expectations. This leads Meyer to analyse compositions in terms of listener expectations at any given point in a piece of music, and comparing these to the actual realisation. His work goes on to influence theorists both in and outside music, as well as providing a basis for cognitive psychology research into music and our responses to it (Narmour, 1977, 1990; Huron, 2006).

Adopting a macro-perspective on analytical efforts in score-based music performance, at least four intentional objects can be discerned that have enjoyed extra-disciplinary interest and enquiry in terms of analysis.

1. The *score* as a descriptive (how should it sound?), prescriptive (what should a performer do?) and expressive (what was the composer's intention/idea?) symbol has been the main focus of analyical attention. This domain is largely covered by a sub-field of musicology: music theory.
2. The *listener's receptive experience* pertains to the domain of aesthetics, music psychology, and music criticism.
3. The *performer's gestures* both from a receptive and a generative point of view are an object of analysis mainly in the field of psychology (Davidson 1993, 1995, 2001).
4. The *sound of music* as an expressive actualisation of the score has been a more recent focus of attention and comparative analysis in music psychology and in projects such as *AHRC Research Centre for the History and Analysis of Recorded Music [CHARM]* and the *AHRC Research Centre for Musical Performance as Creative Practice* [CMPCP].

It is safe to say that, although efforts have been made to stimulate a rapprochement between systematic analytical theory and performers' concerns[393], the outcome of these initiatives has not resulted (yet) in a self-evident exchange of ideas between the fields of systematic musical analysis in musical practice. Schenkerian analysis and psychology-based analytical approaches have barely reached performance curricula (certainly not in the European context) and most musicians' analytical repertoire still consists of proto-analytical tools (deep-learning, keen observation, intuition, metaphor)

[392] *Gestalt Psychology* is a school of thought in psychology originating in the early 20th century that focused on perception and emphasized the organization of experience into wholes that were more than the sums of their parts.

[393] Institutional initiatives such as the *Orpheus Academies for Music and Theory* and its subsequent publications (Agsteribbe & Dejans, 1999; Beelaert, Dejans, & Snyers, 2007; Crispin, 2009, 2012; Moelants, 2010, 2014; Brooks, 2014) as well as a publications such as *Beethoven's Tempest Sonata (first movement): five annotated analyses for performers and scholars* (Bergé, D'Hoe, Caplin, & Beethoven, 2012) all attest to an awareness of this challenge and an appreciation of the potential that lies in an informative relation between analytical theory and practice.

complemented with essential music-theoretical understandings about form (e.g. sonata-form, lied), chord-progressions and counterpoint.

The project of devising a bio-culturally informed tool for musical analysis can be situated within the context of filling the gap between abstract analysis and performative functionality. Within the framework of BCiPP, analysis is considered as a tool for facilitating and opening possibilities with regard to the interactional potential that a composition holds as an intentionally created sonic environment. In the topical attractor-model presented in Chapter 11, five categories were proposed that 'attract' information about experience-enabling elements. In this chapter, these categories – perception, affect regulation/attunement, expression, joint attention/shared intentionality, *mimesis* and *diegesis* – will be further explored for their generative potential in function of an interaction- and experience-based device for performative analysis.

13.2 Introducing Information Units from the domain of musical interaction

The volume of extra-disciplinary information that is available to feed the domain of performative analysis is considerable. Below, seven units of information have been selected from a more extended database (see Appendix 13) on the basis of their potential informational impact. They are punctually and informationally presented in their own *jus*, namely from the perspective of their source-domains. A discussion of the IUs in function of a recontextualizaton in the context of performative analysis is provided afterwards, in section 13.3.

13.2.1 IU 1: Expressive culture and the two-stream hypothesis – cognitive science

In *Beethoven's Anvil: Music in Mind and Culture* (Benzon, 2008), cognitive scientist and jazz musician William Benzon regards music as embodying two simultaneous streams: one stream is the cyclic, repetitive and groove stream, the other the evolving, phrasing and gestural stream which is underpinned the biologically given patterns by which we express and communicate emotion (see also Clynes, 1995, pp. 279–280; Clynes, 1977).

In a series of publications (Benzon, 1993, 2008; Benzon & Hays, 2006) that aim at identifying the characteristics of expressive culture[394], Benzon maintains that these fundamental streams are differentially represented in three ranks of cultures; in this specific context of expressive cultures, Benzon adds a third stream which relates to the architectonics of music via harmony.

[394] Just as cultural evolution has given humans ever more sophisticated conceptual tools to reason with, so it has given us ever more elaborate and coherent expressive tools that engage with feeling of ourselves and the world (Benzon, 1993, pp. 273–274). Unlike *cognitive culture* that advances though inventing ever more sophisticated conceptual tools for abstraction, the works of *expressive culture* are always embedded in some medium that is manipulated and continuously developed in order to elaborate and control our inner experience (Benzon, 1993, pp. 275–276).

Rank 1 cultures dominated a period that stretches from the emergence of human language and society 100,000 years ago up to the development of writing.[395] According to Benzon, musical elaboration in Rank 1 music focuses on rhythm and the groove stream, with rhythmic complexity developed by manipulating the phasing of repetitive patterns. Melodic devices remain relatively simple; harmony plays no structural role in Rank 1 music.

Rank 2 cultures are represented by the ancient high civilizations with writing systems, walled cities and permanent agriculture; Rank 2 music includes the Near and Far East and medieval Europe. With Rank 2, the control of melody becomes differentiated from the control of rhythm. Melodic pitches are now intrinsic to the music itself and no longer dependent on pre-existing and dispositional vocal mechanisms. With the emergence of melodic elaboration, creation of musical meaning by creating expectations becomes possible. With Rank 2, two aspects of musical material are independently manipulated and developed as channels of control: rhythm and melody. Harmonic structure still has no structural significance.

The Renaissance sees the birth of Rank 3 culture, which continues through the Industrial Revolution and currently dominates the Western world. This world gives us classical music characterized by detailed notation. From melodic elaboration in Rank 2, we now move to harmonic elaboration. Harmony as the simultaneous sounding of two or more different tones exists to a certain extent at all ranks, however, the manipulation of these simultaneous occurrences is not organized into a constitutive principle. That only happens in the post-Renaissance Western world. The musical material is now subject to three independent sources of structure.

Rank 4 culture starts in the arts and sciences with the beginning of the 20th century and is, according to the authors, a work in progress and not yet amenable to an analysis in macro-historical terms.

13.2.2 IU 2: Four orientations in critical theory – literary criticism

In *The Mirror and the Lamp: Romantic Theory and the Critical Tradition* (1953), literary critic Meyer Howard Abrams (1912-2015) discerns four coordinates in the total situation of a work of art: the work, the artist, an audience, and a 'universe' to which the three previous coordinates relate (Abrams, 1953, p. 6).

[395] Rank 1 music also includes music of the indigenous cultures of North and South America and sub-Saharan Africa.

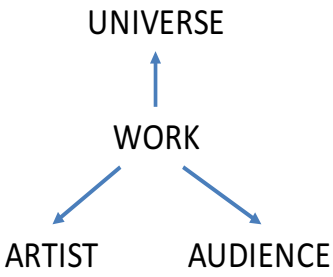

Figure 13.1. The coordinates of art criticism according to Abrams (1953, p.6).

Abrams asserts that any reasonably adequate theory takes some account of all four elements, but also exhibits a discernible orientation toward one specific aspect as a point of departure for defining, classifying, and analyzing a work of art, as well as the major criteria by which he judges its value.

From this generic framework four orientations of critical theories can be inferred (see also Pieters, 2007, pp. 46–57):

- A *mimetic* orientation relates to the idea that a literary text has a clearly recognisable relation to reality. Art consists in imitating aspects of the universe and such mimetic poetics are most prominently advocated by Plato and Aristotle.
- A *pragmatic* orientation that focuses on the relation between text and audience. Such a poetic attitude can be observed in Roman poetics of Horace where the work of art is looked upon primarily as a means to an end, an instrument for getting something done and to effect requisite responses in its readers in terms of pleasure and virtue.
- An *expressive* orientation that characterizes the Romantic period and considers poetics to be the expression and overflow of personal feelings and ideas of an artist: "a work of art is essentially the internal made external, resulting from a creative process operating under the impulse of feeling, and embodying the combined product of the poet's perceptions, thoughts, and feelings" (Abrams, 1953, p. 22).
- An *objective* orientation that focuses on the artwork as a formal structure. Here, the work of art is regarded as a "heterocosm" (Abrams, 1953, p. 27) , a world of its own, in isolation from all external points of reference and is analysed as a self-sufficient entity constituted by its parts in their internal relations, and is judged by criteria intrinsic to its own mode of being.

13.2.3 IU 3: Forms of feeling – philosophy of culture

In a series of publications, philosopher Susanne Langer (1895-1985) argues that a work of art expresses human feeling. According to Langer, an expressive form is "any perceptible or imaginable whole that exhibits relationships of parts, or points, or even qualities or aspects within the whole, so that it may be taken to represent some other whole whose elements have analogous relations" (Langer, 1957, p. 20). The role of such forms is to represents things that are not perceivable or readily imaginable. Categories such as 'earth' are not perceivable as an object and are therefore in need of expressive forms such as maps or little globes in order to allow further thinking about the category.

A musical work is such an expressive form and harbours a structure of temporal flow, pitch contours, and dynamics that is analogous to the felt patterns of the flow in human experience. When a listener's imagination is caught by the development of these musical contours, that person's experience starts to resonate with the felt qualities of the music.

In the case of art works, Langer differentiates between *presentation* and *representation* and argues that, although an expressive form such as music seems to represent an analogous entity, "a work of art does not point us to a meaning beyond its own presence. What is expressed cannot be grasped apart from the sensuous or poetic form that expresses it. In a work of art we have the direct presentation of a feeling, not a sign that points to it" (Langer, 1957, pp. 133–134).

Feeling the patterns of the musical motion is meaningful in the same way that any pattern of emotional flow is meaningful to us at a pre-reflective level. Active listening to music means then to imaginatively entering its motions experiencing via our vital, tactile-kinaesthetic bodies the ways in which the music moves, swells, rushes, drags, rises, and falls. Langer summarizes: "A work of art presents feeling […] for our contemplation, making it visible or audible or in some way perceivable through a symbol, not inferable from a symptom. Artistic form is congruent with the dynamic forms of our direct sensuous, mental, and emotional life" (Langer, 1957, p. 25).

13.2.4 IU 4: Contour and convention – analytical philosophy

Peter Kivy aims at demonstrating in *The Corded Shell: Reflections on Musical Expression* (1980) that "some emotive predicates are applicable to music, and why these are applicable intersubjectively" (Kivy, 1980, p. 11). Kivy explicitly refers to Langer's point of view with regard to the analogy between feeling and music but rejects the possibility that music would directly relate to the structure of feeling and emotion and therefore makes a critical distinction between 'to express' and 'to be expressive of': the face of a Saint-Bernard is 'expressive of sadness' – it looks sad – but that does not imply that it represents the expression of the actual feeling of the dog in question. Similarly, music can be expressive of a certain emotion, without a necessary connection with the condition of the composer. In his 'contour' theory Kivy asserts that music does not refer to the structure of emotion itself, as Langer argues, but rather to the expression of emotions in vocal utterances and in bodily gesture and posture (Kivy, 1980, p. 53).

As a second element in a theory of emotive expressiveness in music, Kivy formulates his 'convention' theory of musical expressiveness which explains the expressiveness of music as a function, simply, of the customary association of certain musical features with certain emotive ones, quite apart from any structural analogy between them (Kivy, 1980, p. 77). Kivy adds that that "all expressiveness by convention was originally expressiveness by contour" (Kivy, 1980, p. 83).

13.2.5 IU 5: Forms of vitality – psycho-analysis, child development

In studies on the developmental aspects of human experience, psychiatrist Daniel Stern focuses on the patterns that mark the process and flow of our felt experience such as the build up of tension and its release, the sense of drifting, the energetic pursuit of a goal, the anxious anticipation of some coming event, and the starting and stopping of a process. Stern calls these patterns 'vitality affects' and describes them as "those dynamic, kinetic qualities of feeling that distinguish animate from inanimate and that correspond to the momentary changes in feeling states involved in the organic processes of being alive" (Stern, 1985, p. 156). According to Stern, vitality affects are experienced as dynamic shifts or patterned changes within ourselves or others. They do not correspond to traditional categorical affects such as joy, anger, sadness but are forms of dynamic attunement to a particular environment or event. Intersubjective affect attunement, then, is "the performance of behaviours that express the quality of feeling of a shared affect state without imitating the exact behavioural expression of the inner state" (Stern, 1985, p. 142).[396]

In a subsequent publication, Stern uses the term 'vitality contours' to refer to the manner in which an act is performed and the feeling that directs it. Stern suggests a global unit of social understanding that is based on an appreciation of the temporal contouring and unfolding of experience. This temporal unfolding occurs in several domains simultaneously.

> There are the external, objectifiable movements and sounds, such as head turning, pointing, and facial and vocal expressions, that form and decompose. Synchronous with these behavioural events there are internal subjective events consisting, among other things, of the continual, instant-by-instant shifts in feeling state, resulting in an array of temporal feeling flow patterns that we will call vitality contours. (Stern, 1999, p. 67)

Any shift in the flow pattern of a stimulus elicits a corresponding perceivable shift in arousal, activation, and hedonic tone and subjectively integrated into temporally contoured feelings. These vitality contours are concerned with the "how" rather than the "what" of felt experiences, they disregard the content (emotions, thoughts or actions), but are constituted through feeling flow patterns that are best captured by dynamic kinetic terms, such as surging, fading-away, fleeting, explosive, tentative, effortful, accelerating, decelerating, climaxing, bursting, and drawn out (Stern, 1999, p. 68).

Stern asserts that vitality contours underlie the appreciation of most art forms that are time-based and formally devoid of 'content', such as most music and dance: "dance reveals to the viewer-listener multiple vitality affects and their variations, without resorting to plot or categorical affect signals from which the vitality affects can be derived. The choreographer is most often trying to express a way of feeling, not a specific content of feeling" (Stern, 1985, p. 56).

[396] See 11.2.2.2.b.

In a 2010 monograph, Stern further specifies 'forms of vitality' into five dynamic events, the *fundamental dynamic pentad*, which give rise to the experience of vitality: movement is the primary element and implies the ensuing elements of force, time, space, and intention/directionality/end-point directedness.

> There is a temporal contour or time profile of the movement as it begins, flows through, and ends. […] Movement also brings with it the perception or attribution of force(s) 'behind' or 'within' the movement. In addition, movement has to happen in space […] Finally, a movement has directionality. It seems to be going somewhere. A sense of intentionality is inevitably added. In a sense force, time, space, and directionality could be called the four daughters of movement. […] These five theoretically different events – movement, time, force, space, and intention/directionality – taken together give rise the experience of vitality. […] This natural Gestalt gives rise to the experience of vitality in one's own movements and in those of others. (Stern, 2010, pp. 4–5)

For Stern, vitality is a *Gestalt* that resists analysis in terms of each separate element; it is immediately grasped from this *fundamental dynamic pentad*.

For the developmental aspect of vitality, Stern leans heavily on a framework introduced by developmental psychologist Heinz Werner which implies that wherever development occurs it proceeds from a state of relative globality and lack of differentiation to a state of increasing differentiation, articulation, and hierarchic integration which allows for more flexible behaviour (Werner, 1940/1957, p. 55). From this point of view, it can be inferred that temporal arts such as music and dance have a specific developmental role in differentiating and extending the communicative, affective repertoire of humans.[397]

13.2.6 IU 6: Embodied semantics – linguistics & philosophy

In *Metaphors We Live By* (Lakoff & Johnson, 1980), Lakoff and Johnson considered metaphor to be a fundamental but often unnoticed mechanism of mind, one that allows using what we know about our physical and social experience to provide understanding of countless other subjects. In ensuing studies Johnson observes that virtually all of our conceptualization and description of music uses metaphors whose source domains are drawn from sensorimotor experience (Johnson, 2007, p. 243) and advocates a theory of embodied semantics with regard to musical meaning.[398]

Within such a framework, meaning is not a spontaneous construction of an autonomous mind and not limited to the framing of concepts and their combination into propositions; instead, meaning is to be situated within a flow of experience that cannot exist without a biological organism engaging with its

[397] The process is similar to the one suggested by linguist Allison Wray and Mithen in relation to evolutionary language development (Mithen, 2005, pp. 3–4).

[398] Johnson's insights are strongly informed by Merleau-Ponty's views with regard to the role of the body in constituting meaning (Johnson, 2006).

environment. Meaning emerges through increasingly complex levels of organic activity, and the 'top-down' structure that shapes and constrains what can be meaningful and how it is meaningful are originally build upon 'bottom-up' and body-environment related processes (Johnson, 2006, p. 7).
Johnson grants gestures a pivotal role in the enactment of meaning and comes – via a linkage to Stern's vitality affects (Johnson, 2006, p. 10) – to an understanding of music's function as a presentation and enactment of felt experience. Musical meaning is primarily embodied meaning and has only limited representational value. Moreover, this type of meaning based on images, affect contours and metaphors goes far beyond conceptual and propositional content. Our human capacities for discerning meaning operate pervasively in all our experience, artistic and non-artistic alike, but in art those capacities operate in an exemplary fashion by exploring how experience can be significant and meaningful (Johnson, 2007, p. 262).

13.2.7 IU 7: Topic theory – musicology

In *Classic Music* (Ratner, 1980), musicologist Leonard Ratner (1916-2011) develops the field of 'topical analysis' to find an account for the stylistic plurality that is so eminently present in the music of the eighteenth century. Whereas the various entities in Baroque compositions (dances, movements) are ideally characterized by one single affect (Mattheson, 1739) supported by dedicated figures, 18th century Classical music allows for the possibility of an individual movement to combine disparate materials, leading to a differentiation and contrast of styles – the rise of opera can be linked to the emergence of dramatic and contextual turns in one opus. These materials and their defining musical components are typically grounded in an original, functional context (dances, ceremonies, religion) and then relocated in a new composition where for instance "a keyboard instrument can play a horn call or a string quartet can evoke sacred polyphony" (Sutcliffe, 2014, p. 118). The process of importing music from elsewhere into a new compositional context is the most characteristic aspect of topical discourse.

> Musical topics are general types, capable of being represented by particular tokens. There is a common resistance among musicians to ideas of generalized meaning. According to the popular view, each musical piece, each melody and figure, is essentially unique. (Monelle, 2000, p. 15)

> Topics are characteristic figures, dances, marches, genres, textures, or even entire styles that are imported, along with their general expressive correlations, into a larger work, in which they are then contextually interpreted, often as part of the dramatic trajectory, or what I call expressive genre, of that work. (Hatten, 2010, pp. 51–52)

Topic theory develops a thesaurus of characteristic figures (Ratner, 1980, p. 9) and suggests a world with enlarged musical horizons where music can be found everywhere in a society and readily

transferred from one place to another; it also allows for overturning hierarchies that may exist between types of music and their original functional contexts.

In Fig. 13.2, musicologist Kofi Agawu's list of common topics for Classic Music is presented as an orientation to the worlds of affect, style, and technique that they set in motion (Agawu, 2009, pp. 43–44).[399]

1. Alberti bass
2. alla breve
3. alla zoppa
4. allemande
5. amoroso style
6. aria style
7. arioso
8. *stile legato*
9. bourrée
10. brilliant style
11. buffa style
12. cadenza
13. chaconne bass
14. chorale
15. commedia dell'arte
16. concerto style
17. contredanse
18. ecclesiastical style
19. *Empfindsamer* style
20. *Empfindsamkeit*
21. fanfare
22. fantasia style
23. French overture style
24. fugal style
25. fugato
26. galant style
27. gavotte
28. gigue
29. high style
30. horn call
31. hunt style
32. hunting fanfare
33. Italian style
34. *Ländler*
35. learned style
36. *Lebewohl*
37. low style
38. march
39. middle style
40. military figures
41. minuet
42. murky bass
43. musette
44. ombra style
45. passepied
46. pastorale
47. pathetic style
48. polonaise
49. popular style
50. recitative (simple, accompanied, obligé)
51. romanza
52. sarabande
53. siciliano
54. singing allegro
55. singing style
56. strict style
57. *Sturm und Drang*
58. tragic style
59. trommelbass
60. Turkish music
61. waltz

Figure 13.2. A Universe of Topic for Classic Music (after Agawu, 2009, pp. 43–44).

13.3 Recontextualisation within the context of performative analysis

The IUs presented above originate in a variety of disciplines and intra-disciplinary orientations. From a pragmatic perspective, this mixture of epistemic backgrounds should not inhibit the 'jumping together' of informational elements. As proposed in 10.3, the type of consilience that is advocated in BCiPP is not concerned with truthfully explaining phenomena, but pragmatically invigorating and freeing the personal theories and beliefs that serve as a background to artistic action.

Introducing the IUs presented above into the field of a bio-culturally informed performative and interaction-oriented analysis potentially impacts on at least four domains: 1/ the streams of musical interaction; 2/ the intentional foci of performance; 3/ music and vitality; and 4/ bio-topics as units of performative analysis.

[399] Ratner's original topics are represented in Appendix 15.

13.3.1 Three streams of musical interaction

Although the multiple-stream hypothesis [IU1] is an extreme reduction of the musical phenomenon by explaining it in terms of a gestural, a groovy, and an architectonic stream, it largely confirms essential aspects that can be inferred from the attractor model as presented in Chapter 11: 1/ the gestural stream can be related to melodic and motivic contour and, as such, conforms to the behavioural instruments that are put to work in affect regulation/attunement, expression and *mimesis*; 2/ the groove stream is an analogue of the concept of entrainment; and 3/ the stream that accounts for the architectonics in music can well be linked to proto-narrative aspects in affect regulation and the macro-structural aspects of diegesis.

The hypothesis of three streams can also be related to contemporary, state of the art analytical approaches that aim at accounting for expressive performative micro-timing. With a view to formulate adequate rules in order to computationally program these micro-structural deviations and adaptions, musical performance researchers Anders Friberg and Erica Bisesi look at local events that attract a listener's attention. These *loci*, called "accents", are either evident from the score ("immanent") or added by the performer ("performed"). They do not only include dynamic accents, but are also associated with grouping, meter, melody (peaks and leaps), harmony, and timbre (Friberg & Bisesi, 2014, p. 241). Friberg & Bisesi arrive at formulating four fundamental accents that can then be further linked to expressive rules of performance (Friberg & Bisesi, 2014, p. 243):

- A melodic accent occurs at local peaks and valleys of the melody.[400]
- A metrical accent occurs at the start of important metrical units such as the start of a measure.
- A harmonic accent occurs at chord changes.
- A phrasing (or grouping) accent occurs at the start of a phrase at any hierarchical level.

Next, the authors add a 'salience-factor' to each of the accents, based on specific contexts in which they occur to come to analyses such as the one presented in Fig. 13.3 with regard to Chopin's *Berceuse*.

[400] To identify the melodic accents, first the highest and lowest tones of the whole melody are labelled, followed by an indication of local peaks and valleys. The authors indicate here that, based on their observations, peaks are more salient in terms of micro-expressivity than valleys.

Figure 13.3. Analysis of immanent accents in Chopin's *Berceuse*, Op. 57 in D flat major, bars 1–19 (Friberg & Bisesi, 2014, p. 251).[401]

Direct links to the three-stream hypothesis and the attractor-model can be inferred from this analytical and accent-oriented mode of analysis: the melodic accents refer to the gestural stream and the ways in which the melodic contour develops; the metrical accents relate to the groove-stream and the presence of pulse; and the harmonic accents imply an architectural stream based on the succession and shifting of harmonies. The grouping accent is a new element and is intrinsically linked to the limits of perception and the need to impose order in a soundscape. It is a factor that is not discussed in the

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context of this chapter, but insights with regard to 'chunking'[402] (cognitive psychology) and direct perception via variants and invariants (ecological psychology) could certainly an additional element to be studied from an interactional perspective.[403]

One of the conclusions of the Friberg & Bisesi study is that : "the Bach piece with its regular character is performed with pronounced metrical accents and with smaller phrasing, whereas the more cantabile Chopin piece is performed without metrical accents and with rather large phrasing" (Friberg & Bisesi, 2014, p. 256). By this, the authors implicitly confirm the macro-historical impact of a three-stream hypothesis as formulated in IU1: the three streams can be traced across genres and cultures and vary in their degree of representation.

In our search for elements that could be part of a bio-culturally informed and interaction-oriented performative analysis, the three streams seem to qualify as a basic model for modelling a score in terms of interactive affordances.

13.3.2 Four focal elements of performance: monadic, dyadic, triadic, quadratic

Abrams' four poetic orientations – mimetic, pragmatic, expressive and objective – originate in literary theory, but can they also be related to the attractor-framework related to interaction and based on modes of interaction in musicking? In Chapter 11, it was indicated how the mother-infant relation develops from a dyadic relation based on affect regulation, attunement, entrainment and expression into a triadic relation where, first via the mechanism of joined attention and later by means of *mimesis* and *diegesis*, a relation is forged between mother (father), infant, a perceivable environment and eventually an extended, imaginary environment. Informed by Abrams insights in IU 2 and taking the perspective of the performer as 'caregiver'[404] in a context of communicative musicality, it is possible to reframe these categories and link them to an expressive, pragmatic, objective and mimetic orientation.

Starting with the mode of interaction related to the expression of affects, it can be argued that this category comes close to the expressive orientation identified by Abrams as a poetics that expresses the personal feelings and ideas of an artist (self-expression). The situation in score-based performance is complex due to the involvement of two creative actors, the composer and the performer. However, for the sake of the argument and to avoid the complexity of double creation, a situation can be

[402] The process of organizing information into a meaningful, coherent and integrated whole (Miller 1956).

[403] Elements of perception are included in the attractor model but as forming the link between action and interaction. Because of this mediating role they are not included in this interaction-focused chapter.

[404] The position of the musician as caregiver may seem odd, however Descartes' insights with regard to the therapeutic effect of music in *Les passions de l'âme* (1649) or more recent advances in the field of music-therapy corroborate such a position.

imagined in which the performer intends to act as an embodied medium with the intentional aim to be the neutral vehicle, an executant or translator (Stravinsky, 1947, pp. 123-124) through which the affective life of the composer shines through. Such a total identification with the feelings and ideas of the composer resonates with C.P.E. Bach's dictum: "the keyboard player himself has to sense the same passions as the ones the author felt when composing a new piece" [CPE Bach *Versuch* I,3 §13][405], but comes also close to the way in which it is perceived in popular music: the composer or text-writer is completely forgotten when a pop-singer performs a song, there is only the presence of the performer (see also Per Aage Brandt's analysis in 13.3.2).

Taking these considerations into account, it can be argued that a performative stance that focuses on self-expression is *monadic*, meaning that the principal focus of the performer/composer is directed inward and that the interactive and dyadic component with the audience is considered to be an epiphenomenon beyond her/his control and interest. A monadic stance relates to affect expression; the performer embodies the music as (s)he is expressing her/his own state of mind (scripted by a text), without an intentional and primary focus on the effect that it generates on the audience. This performative stance is strongly related to the notion of *Empfindsamkeit – "Aus der Seele muß man spielen, und nicht wie ein abgerichteter Vogel"* [C.P.E. Bach, *Versuch*, Teil I, H3 '*Vom Vortrage*', §7], the romantic categories of feeling and genius, and to the psycho-analytical influence on thinking about art: music fulfils the need of expressing deep, unique and hidden feelings of a talented, sensitive musician; the audience is granted the privilege of witnessing this revelation but that is not the leading concern of the artist.

If self-expression relates archetypically to a monadic performative stance, then the categories of affect regulation, attunement and entrainment can be connected to a *dyadic* stance, to Abrams' pragmatic orientation, to a rhetorical position and to the historical framework of a *Wirkungsästhetik*. Such a stance is not self- but effect-oriented; the goal of musicking is to create a sonic environment that elicits a particular effect in terms of affect, mood, emotion or feeling in the listener. Affect regulation builds on principles of action and reaction and on the art of attention modulation while attunement and entrainment rely on principles of transaction and the sharing of vitality contours. In the case of attunement, melodic contouring will be the main instrument; in the case of entrainment rhythmic pulse coupling will be a central concern; in attention and mood regulation, sudden accents and silences or descending and ascending lines will be the primary musical tools. The dyadic stance can also involve

[405] *Er [der Clavieriste] muß dieselbe Leidenschaften bey sich empfinden, welche der Urheber des fremden Stückes bey dessen Verfertigung hatte. Besonders aber kan der Clavieriste vorzüglich auf allerley Art sich der Gemüther seiner Zuhörer durch Fantasien aus dem Kopfe bemeistern*.
http://www.koelnklavier.de/quellen/versuch/kap1-3.html consulted November 2016.

proto-narrative elements such as introduction, repetition, variation, development, climax, resolution (Malloch & Trevarthen, 2009b, p. 2).

Building on the foregoing logic of performative stances and foci, it is also possible to imagine a *triadic* stance (audience-performer-work) and relate it to situations of joint attention and to Abrams' objective orientation. A triadic perspective focuses on the presence of an artwork and on its formal structure. Via the mechanism of joint attention and shared intentionality, the focus is on the composition's immanent structure and on finding, revealing and sharing elements of interactive interest. A performer's role in a triadic context does not need to be limited to being a guide, the performer co-experiences this composed environment and can also express primary and affective reactions in relation to that environment. In such a situation, the listener, confronted with a (new) sonic and composed environment, looks to the performer for guidance *to determine and to see* what an appropriate reaction would be. (S)he is potentially contaminated via a mechanism of empathy: a performer projecting enjoyment or seriousness while playing, will influence the reaction of the listener accordingly. In this last case, the monadic and triadic stance appear as an integrated whole.

Finally, the triadic stance can be further extended to a *quadratic* perspective in the case of mimesis and diegesis: a quadratic-mimetic stance focuses on the relation between the audience, the performer, the score and the elements of the 'universe' that are presented by mimesis. Biological components can be involved in mimesis such as flora, fauna, events, persona, affects, habitats, natural phenomena but also cultural memes such as dances, genres, well-known tunes. When the performer mimetically imagines and presents a *persona,* this will include elements of affective expression leading to a nuanced differentiation between a monadic and quadratic-mimetic imagination. In the context of a monadic stance and imagination, it is the expression of the performer that is granted a central role; in a quadratic-mimetic context the expression of feeling relates to an imagined organism. The expression is achieved via gestures (cfr. 13.2.4, Kivy's contour theory) or in terms of vitality contours (cfr. 13.2.5). A quadratic-diegetic triadic stance is concerned with the relation between the audience, the performer and a succession of events which are re-presented by a narrative. Since instrumental music generally does not represent concrete elements – it has a free-floating intentionality – the diegetic factor in music relates to the modes of operation and the temporal development that are related to story-telling (Meelberg, 2006, pp. 39–40). In conclusion of his study on narrativity in contemporary music, Meelberg relates narrative analysis to articulating the ways human subjects may be able to comprehend unique phenomena such as a musical composition or improvisation, and to understand "the observer's urge to integrate the artwork's elements into a graspable whole"; moreover, he concludes that "the narrativization of contemporary music leads to a construction that is fabricated by the listener, and

not to the exposure of the true essence of the music (whatever that may be)" (Meelberg, 2006, 219). By suggesting a quadratic-diegetic stance the performer bridges the void between the idiosyncracy of the musical work and the inbuilt urge of the listener to make and to experience stories; (s)he facilitates the grasp of unity by assuming the role of a story-teller – including the vitality-states that are attached to that role.

The role of the performer is complex in its relation to the composer, the composed work, the audience, and the sonic environment that (s)he is causing and simultaneously experiencing. The foci of performance proposed here only make sense in a context where a performer's presence is considered to be the prime point of reference in a musical interaction with an audience (see also Fig. 13.3 and Fig. 13.4). A performer can embody, simultaneously cause and experience (do and undergo) a scripted sonic environment as a persona, as a storyteller, an actor, via dyadic regulation or via action-metaphor or is a co-listener to a composed environment and acts as a guide via joint attention or as a reactive observer. From an everyday interaction perspective, it is common to combine or to switch between these foci: in telling a story, for instance, personal feelings connected to the story will shine through while attention will be paid to the listener's responses and certain elements of the story will be enacted gesturally. However, dogmatic points of view that foreground one option from this world of possibilities are not uncommon in musical discourse: "a performer is the servant of the score", "a performer is a guide", "the performer is an actor", "the performer is an orator". The foregoing approach in terms of foci of performance offers a framework in which these dogmatic positions can be countered and differentiated in a systematic way and where one can navigate and assess focal options in function of the concrete situation (score, audience, space) and the interactive affordances that it holds. All four categories equate to potentially plausible performative approaches. The foci of performance are thus not a tool for establishing a 'best' approach but, on the contrary, a means of underlining the multiplicity of foci that a performer's performative role can take.

We can summarize that the four *foci of performance* allow a performer to reflect on how to combine or to navigate performative stances by focusing on: 1/ self-expression; 2/ the effect of the performance on the audience; 3/ the immanent elements of the composition; and 4/ the suggestion by diegesis and/or mimesis of environments that are not actually present in the performance space. Since these foci seldom appear in isolation it is appropriate to refer to them as *four focal elements of performance* that can be freely combined and analysed in function of captivating musical interaction.

As will be shown more concretely with Chopin's *Mazurka* (see 13.5), these foci are no consequence-free intentionally imagined perspectives. A qualitative performative difference can be noticed between expressing one's own feelings/moods (monadic), inducing them (dyadic), sharing them on

the basis of elements in the direct sonic environment (triadic), or (re)presenting them (quadratic); choosing one of these options has perceivable consequences on performative parameters such as micro-timing, articulation, dynamics, and tempo.

13.3.3 Music and vitality

IUs 3 to 5 (see 13.2.3-5) relate to the idea of music as the expression/presentation of affects, emotions, moods, and feelings[406] and has potential repercussions on how to assess and analyse pieces of music. As stated before, musical analysis is a field of study that has concerned itself primarily with the musical score and with structural elements present within a composition. Such a score-oriented attitude can be traced back to the rise of empiricism in the 18th century (Weber, 1994) but also to a striving for musical autonomy in the middle of the 19th century. In *Vom musikalisch Schönen* (1854), the Viennese music critic Eduard Hanslick (1825-1904) claimed that music expresses musical ideas and that "*tönend bewegte Formen*" (Hanslick, 1854, p. 32) are the content of music and that the idea of music as describing and expressing emotions is a threat to music's autonomy.

Langer, Kivy and Stern position affect-related notions such as feeling, emotion, and mood back in the very centre of musical discourse. As a point of departure for their theories they revisit the musical insights that pre-date the formal turn in music and refer more in particular to the *Doctrine of the Affections* (German, *Affektenlehre*) which relates primarily to Baroque music and which holds that music should express idealized emotional states and have listeners feel these states. In *Der vollkommene Capellmeister* (1739) all-round musician and theorist Johann Mattheson (1681-1764) describes some 30 affects but concrete musical means to represent them are only suggested for a few. For instance, large intervals to represent joy, small intervals to represent sadness, ascending motion for pride but descending motion for humility, and disordered sequences of notes for despair (Bartel, 1997). During the baroque, composers generally sought to express only a single, idealized and universal affect *per* composition. In the course of the 18th century, however, the need to have personally experienced the affection is increasingly emphasized to the point that, at the dawn of *Empfindsamkeit* (English, sensitivity), experience rather than rational knowledge of the affection became a prime element in musical creation. During the latter half of the 18th century and instigated by musicians such as Johann Joachim Quantz (1697-1773) and Carl Philipp Emanuel Bach (1714-1788), the *Doctrine of the Affections* was eventually abandoned in favour of an *Empfindsame Stil* which implied the possibility and freedom to use whatever means fantasy and intuition may suggest

[406] See 11.3.2.2 for the essential distinctions between the terms: 'affect' is used as a cluster-term; 'emotion' refers to a relatively brief episode of dispositional changes or action tendencies; 'feelings' are the subjective representation of emotions; 'mood' is of lower intensity than emotion but longer in duration; 'temperament' refers to particular inherent/inborn affective styles.

expressing subjective feelings in music. It is within this context that C.P.E. Bach formulates in his *Versuch über die wahre Art das Clavier zu spielen* (1753) a crucial insight in how the expression of feelings via a composition relates to the performer:

> A musician cannot move others unless he himself is moved. Thus he must of necessity be able to immerse himself in all the affects he wishes to arouse in his listeners; he must communicate his feelings to them in such a way as best to move them to empathy. In languid and sorrowful passages he must appear languid and sorrowful. One must see and hear it in him. The reverse is true with passionate, cheerful, and other kinds of ideas, when he immerses himself in these affects. No sooner is a passion stilled than another is excited, and thus he passes constantly from one to another. This is especially the case in pieces that are highly expressive, be they conceived by the performer himself or by somebody else; in the latter, the performer must feel the same passion within himself that the author of the piece intended at its composition. [C.P.E. Bach, *Versuch*, Teil I, H3: '*Vom Vortrage*', §13] (Bach, C.P.E., 1753, p. 123; Fubini, 1994, p. 294)

With this remark, C.P.E. Bach provides a link between the generic understandings with regard to musical expression (as indicated by Langer, Kivy and Stern, see 13.2.3-5), embodiment [IU6] and performative analysis: if music expresses affects (emotion, feelings, moods) and these affects need to be embodied by a performer, then they should also be amenable to performative analysis.

Linguist and semiotician Per Aage Brandt (Brandt, 2009, p. 35) plots the relations onto a musical context via a semiotic schema[407] (see Fig. 13.4).

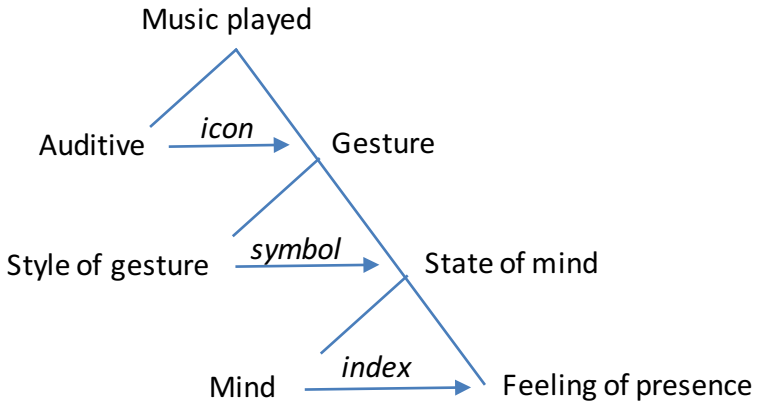

Figure 13.4. Semiotic relations in a musical context (Brandt, 2009, p. 35).

[407] Brandt uses the semiotic terms icon, symbol and index to refer to the relation between sound, gesture, state of mind and feeling of presence. It is not necessary to elaborate on the specific semantics of the terms. It suffices to be aware that: 1/ 'icons' are signs that have a resemblance to their object (photos, painting); 2/ 'indices' always point, reference, or suggest something else (smoke is an index of fire); and 3/ a symbolic sign is assigned arbitrarily or is accepted as societal convention; therefore, the relationship between the symbol and its object need to be learned.

According to Brandt, in music, the rhythmic and melodic contours that can be heard suggest a body making analogue gestures. Here, the auditive form structurally resembles and signifies the bodily gesture, even if the movement is not actually shown, but only played and heard in musical sound. The idea of bodily gesturing in sound in turn signifies a person in a corresponding state of mind and emotive movement. Since this affective meaning related to a particular state of mind occurs at the very moment of hearing the music, it will ultimately yield to those who are a sharing the musical experience a feeling of the presence of that musician. Ultimately, music communicates (embodied) states of mind (Juslin, 2013b, p. 1).

Stern's notion of 'vitality' (see 13.2.5) is one that is currently not embedded in musical discourse but comes close the notion of 'states of mind' and, in our view, holds the potential to bypass the complex and differential semantics that are attached to emotion, affect, feeling and mood. As an element that can be intersubjectively shared, vitality strongly resonates with inspired action and the essential requirement of music as 'happening' without being specific on the content of what exactly is happening. As such, vitality refers to different states of mind as well in terms of its immanent structure as well as in the ways in which states of mind lead to behaviour. Moreover, and at least according to Langer, Kivy and Stern [see IUs 3 to 5 in this chapter], these states of vitality – be it in structure, gesture or contour – constitute the essence of musical meaning as the sharing of states and developments of vitality.

If 'vitality' is introduced to the attractor-framework presented in Chapter 11, we can further observe that, although affect and emotion are only explicitly present in two of the sub-attractors of 'interaction' ('affect regulation' and 'expression'), states of vitality are a necessary and grounding element in all sub-attractors. Mimesis and the use of action metaphor in music requires either a representation of the vital qualities present in a living organism or an event, or of the vital experience that is involved in undergoing, observing and exploring environments that are of a static nature. The same necessary implication applies to the elements of entrainment, joined attention and diegesis which are all activities that all involve a particular state of (embodied) mind or of vitality.

Relating these perspectives to an interest in developing a bio-culturally informed tool for performative analysis, based on the process of interaction, we can consider states of vitality as a pivotal and central entity. As already pointed out in 13.1, the field of analysis traditionally focuses on four objects of enquiry: 1/ the score as descriptive, prescriptive and expressive symbol of a sonic environment; 2/ the sound of music as physical entity that can be studied in terms of expressive microstructure; 3/ the listener's experience; and 4/ the movements, bodies and gestures of musicians that account for the visual aspect of performance. Extending Brandt's schema (Fig. 13.4) to composed music we can see how these elements relate to each other and can be analysed in terms of the score, the auditive signal,

the musical gestures and the listener's experience (see Fig.13.5). What is missing from this list is a systematic analytical interest in states of mind or states of vitality of the performer. Such an analytical perspective would open a new, alternative and phenomenology-oriented perspective.

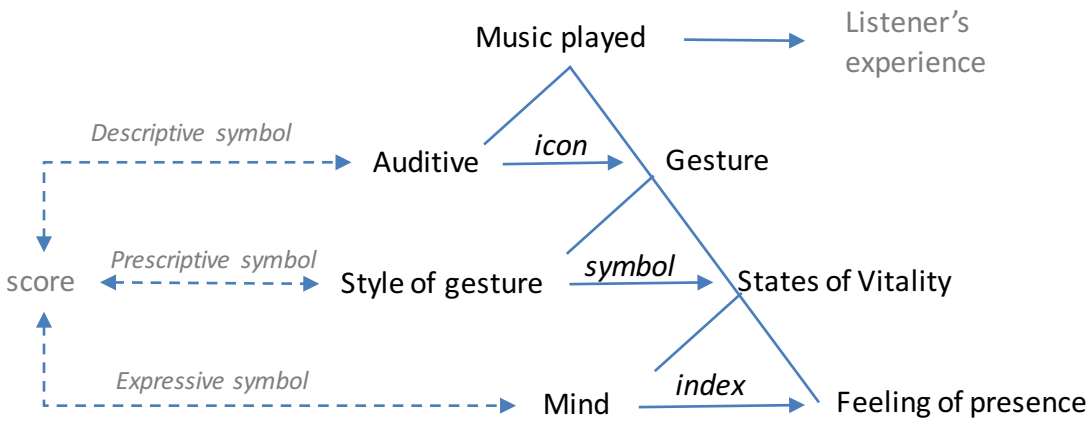

Figure 13.5. Elements of analysis: score, sound, gesture, listener's experience and states of vitality.

Educational psychologist Roland Persson has reported on performers' self-induction to altered states of awareness and how musicians very consciously manipulated recall of certain memories in order to 'get into the mood' (Persson, 2001, pp. 281–283). These induction strategies seem to be mostly developing intuitively as a result of emotion-evoking structures inherent in the music. Persson also notes that performance teachers never discuss such induction procedures during lessons, which makes it feasible to propose that mastering them is mainly a personal and intuitive matter.

Such an intuition-based state of affairs creates opportunities for further reflecting on the development of an experience-based, systematic and interaction-oriented tool for performative analysis.

13.3.4 A universe of bio-topics as units of analysis

The framework provided by topical analysis [IU 7] has two inherent limitations. Firstly, it is restricted to music of the 18th century and secondly, the topics that are being selected are intrinsically cultural: their origins are to be situated in other compositions. From the perspective of bio-culturally informed performative analysis the question arises if these cultural topics are amenable to be considered as particularisations of more fundamental and universal dispositions and if the model of analysis could serve as a template for what could be called a bio-topical analysis; an analysis that is not intended to locate cultural topics in a score, but rather *bio-topics* or units of a performer's experience and vitality while playing a piece.

A look at the characterising descriptions that are provided by Ratner (see Appendix 15) shows that each cultural topic is expressed by one or a combination of vitality states or contours: the topic of

minuet for instance is related to the vitality states 'elegant', 'noble', 'charming', 'lively'; the topic of polonaise implies the qualities 'serious' and 'deliberate'.

Performers do not necessarily need to rely C.P.E. Bach's advise with regard to the embodiment of affect to realise that while playing a piece of music, the sound and micro-structures that are produced are anticipated by, and embedded in a dynamical flow of energies and vitalities. When this element is lacking, the performance will often be dull, non-stimulating and with only little interactional affordance.

During the academic year 2016-2017, a universe of frequently encountered bio-topics was assembled while playing and discussing a variety of repertoire with piano-students of the *Stedelijk Conservatorium Brugge* [Belgium]; the compositions include early stage pieces and more elaborate compositions from the canonical repertoire. In Fig. 13.6, these bio-topics are listed and in Fig. 13.7 they are topologically linked to the *six modes of interaction* present in the attractor-model (see 11.3.2.2).

The dialogue between hands-on experience and the theoretical reference-framework concerning the modes of interaction, turned out to be a source of inspiration in generating such *bio-topics*. Reflecting on bio-topical elements of diegesis from an abstract perspective*,* for instance, led to the top-down formulation of bio-topics such as 'a sense of beginning' and 'a sense of ending', states of vitality that would probably have stayed hidden in unconscious intuition without the systematic roadmap related to the six interactional modes.

In *Notes from the Pianist's Bench*, Berman claims that "the performer's creativity lies principally in the area of musical expression in finding the right feeling […] the performer's freedom should never be denied; rather, it must be defined" (Berman, 2000, p. 139). The framework of bio-topics does exactly what Berman proposes: it focuses in an analytical way on performative feeling and systemizes it via a universe of bio-topics and the six modes of interaction to which these embodied states of vitality can be related.

1. A sense of beginning
2. A sense of ending
3. A sense of closure
4. A sense of questioning
5. A sense of story-telling
6. A sense of time (flash back – flash forward)
7. A sense of pause
8. A sense of change
9. A sense of surprise
10. A sense of contrast
11. A sense of plot
12. A sense of becoming an organism, persona, event
13. A sense of being in a particular environment, landscape or habitat
14. A sense of season (summer, winter, spring, fall)
15. A sense of time of day (morning, noon, evening)
16. A sense of space (high, low, deep, close, far away)
17. A sense of harmony
18. A sense of light – dark – shadow
19. A sense of movement
20. A sense of flow
21. A sense of sudden stop
22. A sense of speed (fast, slow, accelerating, slowing down)
23. A sense of ascending/descending
24. A sense of fluttering
25. A sense of silence/quietness
26. A sense of singing
27. A sense of breathing
28. A sense of expanding
29. A sense of dialogue
30. A sense of floating
31. A sense of being open – closed
32. A sense of being big, small
33. A sense of power – weakness
34. A sense of fullness – emptiness
35. A sense of being static – dynamic
36. A sense of observing (environment, event, persona)
37. A sense of recognizing/remembering
38. A sense of listening
39. A sense of noticing 'special moments'
40. A sense of being generous, happy, sad, lively, angry, tender
41. A sense of expectation, hope, ambition realisation, disappointment
42. A sense of elegance
43. A sense of simplicity
44. A sense of energy
45. A sense of excitement
46. A sense of feeling comfortable
47. A sense of insecurity
48. A sense of being cautious
49. A sense of vulnerability
50. A sense of freedom – constraint
51. A sense of tension
52. A sense of liberation
53. A sense of daydreaming
54. A sense of relief
55. A sense of walking, running
56. A sense of dancing
57. A sense of vitalizing
58. A sense of soothing
59. A sense of sharing
60. A sense of contouring
61. A sense of gesturing
62. A sense of suspension
63. A sense of asking for attention
64. A sense of varying
65. A sense of improvising
66. A sense of playfulness
67. A sense of virtuosity
68. A sense of solidarity (homophony, homorythmy, choral)
69. A sense of being capricious
70. A sense of meandering

Figure 13.6. The Universe of Bio-topic (a selection).

DIEGESIS

A sense of beginning
A sense of ending
A sense of closure
A sense of questioning
A sense of speaking, narrating
A sense of pause
A sense of time
A sense of change
A sense of surprise
A sense of contrast
A sense of plot

SELF-EXPRESSION

A sense of being generous, happy, sad, lively, angry, tender
A sense of expectation, hope, ambition, realisation, disappointment
A sense of elegance
A sense of simplicity
A sense of energy
A sense of excitement
A sense of feeling comfortable
A sense of insecurity
A sense of being cautious
A sense of freedom – constraint
A sense of tension
A sense of liberation
A sense of relief

JOINT ATTENTION

A sense of observing (environment, event, persona)
A sense of recognizing/remembering
A sense of listening
A sense of noticing 'special moments'

AFFECT REGULATION and ATTUNEMENT

A sense of vitalizing/waking up sb.
A sense of soothing
A sense of sharing
A sense of contouring
A sense of gesturing
A sense of suspension
A sense of asking for attention
A sense of varying
A sense of improvising
A sense of playfulness
A sense of virtuosity
A sense of solidarity (homophony, homorythmy, choral)
A sense of being capricious
A sense of meandering

ENTRAINMENT

A sense of walking, running
A sense of dancing

MIMESIS

A sense of becoming an organism, persona, event
A sense of being in a particular environment, landscape or habitat
A sense of season (summer, winter, spring, fall)
A sense of time of day (morning, noon, evening)
A sense of space (high, low, deep, close, far away)
A sense of harmony
A sense of light – dark – shadow
A sense of movement
A sense of flow
A sense of sudden stop
A sense of speed (fast, slow, accelerating, slowing down)
A sense of ascending/descending
A sense of fluttering
A sense of silence/quietness
A sense of singing
A sense of breathing
A sense of expanding
A sense of dialogue
A sense of floating
A sense of being open – closed
A sense of being big, small
A sense of power – weakness
A sense of fullness – emptiness
A sense of being static – dynamic

Figure 13.7. The Universe of Bio-topic plotted in terms of *the six modes of interaction.*

13.4 Reproduction: *Interactional* and *Bio-topical Performative Analysis*

The elements presented in Section 13.2 and discussed in Section 13.3 are summarized in terms of their impact in Fig. 13.8 and assembled within the attractor-framework of musical interaction (see Fig. 11.10) in Fig. 13.9.

IU	*Domain*	Key terms	Impact on performative analysis
1	*Cognitive science*	Three streams (gesture, grove, form), perceptual grouping	Systematic and three-part reduction of a complex phenomenon; perceptual grouping as an extra element to take into consideration.
2	*Literary criticism*	Four foci in literary analysis (author, audience, work, universe)	Systematic reduction + links with developmental processes of interaction.
3	*Philosophy of culture*	Art as the presentation of feeling	Foregrounding the relation between music and affect.
4	*Analytical philospohy*	Universal contours in perception, style-dependent conventions	Supportive of a bio-cultural approach.
5	*Psycho-analysis, developmental psychology*	Vitality-affets, -contours	Introducing the concept of vitality as an attractor in the context of musical meaning.
6	*Linguistics, philosophy*	Embodied semantics	Situating musical meaning in the context of the body (both, the performer's and listener's body).
7	*Musicology*	Cultural and style-specific musical topics	Classification and identifaction in analysis.

Figure 13.8 IUs impacting on practical understandings regarding interaction and performative analysis.

The first three columns of Fig. 13.9 contain *primary indicators of interaction* and allow, based on the characteristics of a composition, for an interactive analysis via an exploration of the immanent streams of interaction (three-stream hypothesis), the focal elements of performance (monadic, dyadic, triadic, quadrative) and the performative modes of interaction (self-expression, affect regulation & attunement, entrainment, joint attention, affective response, mimesis and diegesis). Column 4 refers to the musical means which are involved in musically mediating these primary indicators and column 5 lists ways by which a performer can control these means. The last column denotes a selection of *bio-topics* or *states of vitality* which are experienced by a performer in the act of performance and which are considered to be the basic elements of a communicative musicality.

The informal reproduction of the recontextualised information discussed above and summarized in Fig. 13.9 can be achieved by using terms such as vitality, entrainment and modes of interaction in a practical and didactic discourse, and create an awareness of the role and impact of bio-topics. Within

<table>
<tr><th colspan="3">Primary indicators of interaction</th><th rowspan="2">Musical means of interaction</th><th rowspan="2">Performative control</th><th rowspan="2">States of vitality
Bio-topics
(a selection)</th></tr>
<tr><th>Three immanent streams of interaction</th><th>Four focal elements of performance</th><th>Performative Modes of interaction</th></tr>
<tr><td rowspan="5"><u>Stream 1:</u>
Gestural
Melodic

<u>Stream 2:</u>
'Groove'
Meter
Rhythm

<u>Stream 3:</u>
Form
Architectonics</td><td rowspan="2">Monadic
<u>Performer</u></td><td>Self-expression (feelings & moods)</td><td rowspan="5">Contouring
Gesturing
Phrasing
Action-metaphor
Pulsing
Mechanics of narration
(rhetorics)
Listening</td><td rowspan="5">Timing
Dynamics
Articulation
Tempo
(Tuning)
(Vibrato)</td><td rowspan="5">A sense of beginning
A sense of ending
A sense of change
A sense of surprise
A sense of being surprised
A sense of becoming
A sense of singing
A sense of being somewhere
A sense of space
A sense of movement
A sense of phrasing
A sense of flow
A sense of arrest
A sense of silence
A sense of breathing
A sense of expanding –contracting
A sense of being static – dynamic
A sense of recognizing
A sense of listening
A sense of noticing
A sense of being generous, happy, sad, lively, angry, tender
A sense of expectation
A sense of realisation
A sense of excitement
A sense of freedom
A sense of tension
A sense of dancing
A sense of sharing
A sense of play</td></tr>
<tr><td rowspan="2">Dyadic
Performer
<u>Audience</u></td><td>(Affect) regulation</td></tr>
<tr><td>(Affect) attunement</td></tr>
<tr><td rowspan="2">Triadic
Performer
Audience
<u>Work</u></td><td>Joint Attention</td></tr>
<tr><td>Affective response</td></tr>
<tr><td rowspan="2">Quadratic
Performer
Audience
Work
<u>'Universe'</u></td><td>Mimesis (presentation)</td></tr>
<tr><td>Diegesis (representation of a temporal development)</td></tr>
</table>

Figure 13.9. Elements of musical interaction.

such an informal context, aphorisms such as 'the gestures and tones of music surf on states and waves of vitality' can be a leading motif in discussing and assessing musical performance.

However, the interactive framework also allows for a more systematic and formal analytical treatment. Here, the concept of an *Interactive* and *Bio-topical Performative Analysis* is presented as the bio-cultural penchant of 'topical analysis' as developed by Ratner in *Classic Music* (1980): it is concerned

with punctually identifying and assessing vitality-archetypes that present themselves in performing a piece of music. Since these bio-topics are not readily observable (as gestures and sounds are), this type of analysis can only be carried out by performers who are practicing or performing a particular composition.

Bio-topical performative analysis allows for various levels of complexity and systematization. At a basic level, it establishes an awareness of certain basic senses of vitality that are already informally present in most personal theories; these senses can be further extended by getting acquainted with the extended list of bio-topics in Fig. 13.6. The same multi-level approach applies to discussing the primary performance indicators of interaction (see Fig. 13.9 columns 1-3) which dialogue with the bio-topical analysis.

From a more formal systematic perspective, four phases are proposed to be included in an *Interactional* and *Bio-topical Performative Analysis*.

1. Assessing musical interaction via the three streams of musical interaction (gesture, groove, architecture).
2. Reflecting on the *foci of performance* (monadic, dyadic, triadic, quadratic) and assessing how they apply to a concrete context.
3. Further refining the *foci of performance* in terms of *modes of interaction* (expression, affect regulation & attunement, entrainment, joined attention & shared intentionality, mimesis, diegesis).
4. Reflecting on the bio-topics that could be attributed to particular instances and vitalise the sonic environment.

Taking these phases into account, the following approach to *Interactional* and *Bio-topical Performative Analysis* is proposed:

Interactional and *Bio-topical Performative Analysis* is concerned with identifying affordances for musical interaction and communicative musicality in a musical score, and with reflecting on the embodied states of vitality (bio-topics) of a performer that are involved in creating an experience affording sonic environment.

Definition 8: *Interactional* and *Bio-topical Performative Analysis*.

13.5 Case study: An *Interactional* and *Bio-topical Performative Analysis* of the Chopin *Mazurka* op.67 nr.4

As an illustration of how *Interactional* and *Bio-topical Performative Analysis* could look like in concrete circumstances, we now turn to Chopin's *Mazurka* op.67 nr.4 and adopt the analytical phases proposed in 13.4.[408]

13.5.1 Interactional analysis – primary indicators

13.5.1.1 The immanent streams of interaction: balancing the three streams

Pieces such as the Mazurka's are prominent case studies to assess the operationalisation of a three-stream approach to music. The concern in performing pieces such as the *Mazurka* is mostly directed at finding a balance between the three streams, i.e. the element of metric entrainment, the melodic gestures and the overall development of the piece. The issue becomes more complicated when realizing that, according to the original dance style at least, there should be an accentuation of the weak beats. Taking into account that regular metre allows for a basic engagement and synchronicity with the music and that tempo stability is one of the crucial environmental invariants[409], compromising these factors are elements that could potentially weaken interactive entrainment. If we add the factor *rubato,* which is closely connected to the gestural stream, then we have already two elements that could easily destabilise the performance; 'sacrificing' both the elements of easy and predictable engagement can potentially result in decreasing interactive quality.

Mastering the balance between these parameters is a daunting task that likely culminates in a stage of surrender and the exploration of alternative repertoire when a student has no 'innate' or otherwise acquired feeling for this particular genre. Of course, there is not one way of approaching a challenge, especially in instrumental didactics.[410] The framework of the immanent streams of interaction,

[408] Selecting a Chopin *Mazurka* for this case study is related to: 1/ the prominence of mazurka's in the analytical literature (Cook, 2007; Ohriner, 2014); 2/ the brevity of the piece; and 3/ its value in introducing early-stage pianists to Chopin's work.

[409] In Ecological Psychology the elements of a relatively permanent, yet ever-transforming environment, are called 'invariants' and two types are discerned: 1/ transformational invariants are those relational aspects of the information that specify the identity of a particular pattern of change. Whenever a pianist plays, (s)he produces a range of sounds (dynamically and qua pitch) that are distinguishable from sounds generated on other instruments; and 2/ structural invariants, on the other hand, are relational properties specific to the structure of the source object undergoing a particular style of change. The mechanical properties of a piano, or even the pianist's toucher, correspond to the invariant structural features of tone production on a piano. Within a musical context, tempo, can be considered both as a structural (one tempo) and transformational (*ritardando*, *ritenuto*) invariant.

[410] Another non-verbal and analogue approach to be recommended would certainly be the *Silent Piano Technique* as briefly indicated in Section 12.3.

however, can be a first reference in approaching and assessing a coded sonic environment and create awareness of the multi-layered presence of interactive components in this music.

13.5.1.2 Focal elements of performance and modes of interaction

A further element of an interactional analysis is to explore how the *Mazurka* allows for the adoption and integration of different *focal elements* and *modes of interaction*.

From a monadic point of view, the *Mazurka* could function as *a metaphor for a sense of self-possessed and personally felt freedom* and *enjoyment* expressed in the form of a miniature (the *Mazurka* is an elegant and rather short piece). Such a perspective could occasion an intimate and inward-looking rendition of the piece with a modest dynamic range, anticipatory micro-timing, subtle moments of change, and a rather uniform affective style and temperament[411]; however, the 'forte' that is indicated at the beginning of the Chopin manuscript dating from 1848 (Chopin 1953/2015, pp 152-153) is suggestive of a more passionate rendering with great emotions and large romantic gestures. Looking at concrete instances such as the opening of the piece, it can be inferred that a monadic stance will occasion an anticipated E, followed by a powerful placed bass note in the left hand and a stormy continutation in the right hand. A recording of the first 33 bars of the *Mazurka* in a monadic style in a rendition of the author can be seen at https://vimeo.com/231298237 [Password: JoostPhD]. An example of a monadic approach is a recording by Dénes Várjon (92nd Street Y, 2009)[412].

Adopting an effect-oriented, rhetorical and dyadic stance, the performer can prefer to open with a first note that grabs the attention of the listener[413] and comes as a surprise. In this scenario, the first left hand note is crucial for instigating a strong feel of entrainment and would therefore demonstrate an energetic 'bounce'; the playful contours in the right hand will be used to hold attention and add emphases in a rhetorical way and the general descent that characterizes the contours in A1 will afford a soothing attunement. Elements of change, such as for instance in B1, can potentially be upgraded to a contrasting effect. A recording of the first 33 bars of the *Mazurka* in a dyadic, entrainment-oriented style in a rendition of the author can be viewed at https://vimeo.com/231297883 [Password: JoostPhD]. An example of a dyadic approach is Rubenstein's recording (ArRubMusic, 2009)[414].

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[411] "Affective style refers to relatively stable dispositions that bias an individual toward perceiving and responding to people and objects with a particular emotional quality, emotional dimension, or mood. Temperament refers to particular affective styles that are apparent early in life, and thus may be determined by genetic factors" (R. J. Davidson, Scherer, & Goldsmith, 2003, p. xiii).

[412] https://www.youtube.com/watch?v=AcxZRI6aews.

[413] In the posthumous Fontana Edition (Chopin, 1953/2015, pp.150-151) an emphasis is added to the first note '<'.

[414] https://www.youtube.com/watch?v=AcxZRI6aews.

From a triadic perspective, the role of the performer is one of revealing and illuminating the composition as an autonomous environment that needs performative guidance. Such a stance will imply careful following the melodic contours and paying attention to 'special' moments and invariants. Such 'special moments' include elements such as the highest note [B26], the lowest note [B9], harmonic variants [B4], modulatory events [C1], and chromatic contouring [B14-15].

From a quadratic point of view, the *Mazurka* can be considered as a presentation of a succession of events (mimesis) or as a representation of those events (diegesis). In the case of a quadratic-mimetic perspective, the *Mazurka* is considered to be the presentation of a succession of events where it could be imagined that one or more scenes concern a *persona* (or another organism) who moves and behaves 'Mazurka-like' in a space. Such a viewpoint can emphasize the gestural contours that go along with the dancing and will consider the macro-structural changes as a change of scenery, involving another space and potentially other *personae*. Another possibility is to adopt a perspective in which the melodic contours refer to the structure of experience of a *persona* and that the macro-structural changes refer to changes in the state of mind; within such a context C1 could be related to a state of daydreaming for instance. the role of the performer is either to become that person (or to observe him/her) or organism and experience the vitality of movement and dancing or to take the stance of an observer who assesses and lives the state of mind of a persona empathically. In the latter case, the performance will be less vivid and evoke a more matured and distanced experience.

A recording of the *Mazurka* in a quadratic-mimetic style in a rendition of the author can be consulted at https://vimeo.com/231296869 [password: JoostPhD]. An example of a quadratic-mimetic approach is Evgeny Kissin's recording of the piece (KEUDER, 2008)[415].

Such an imaginative quadratic-mimetic and observational perspective comes close to a quadratic-diegetic viewpoint which is likely to engender an even more detached representation and narrative stance. With adjoining support of the monadic, dyadic and triadic elements, the macro-structural elements of the environment now become the primary focus of attention as well as an underlying *sense of serene story-telling*. An observational stance implies reflection, inviting a less vivid rendition than a mimetic perspective. The opening of the piece will sound as an invitation to listen very much as "once upon a time…", and the phrasing will be concerned with following the contours that are characteristic of telling a story (such as beginning and ending a phrase/story, breathing between phrases, pausing).

Arbitrating between or integrating performative stances and modes of interaction is not a matter of truth-finding but one of assessment, flexibility, of creating options and pragmatic affordances; it allows

[415] https://www.youtube.com/watch?v=qgOzDDPlFjI.

the performer to reflect on one's own experience and to go beyond first intuitions and performative habits by systematically exploring the affordances provided by the coded environment (the score) in a stimulating fashion.

One outcome of such deliberation – the most appealing one in the author's view – could be to adopt primarily a quadratic-mimetic approach where a *persona*, a dancer is presented and observed who expresses her/his joyous and elegant state of mind and the development of that vitality throughout the macro-structural entities, supported by the gestural and entraining characteristics of a Mazurka. Within such a quadratic-mimetic framework, monadic, dyadic and triadic elements can be called upon to support a more captivating interactional experience.

13.5.2 Assigning bio-topics

The assignment and consideration of bio-topics is the last phase of analysis and implies a reflection on the fundamental states of (embodied) mind that are required and precede the gestural and dynamic contours that are then further specified in terms of micro-timing, articulation, tempo and dynamics. Taking a quadratic-mimetic stance as a primary interactional focus, a suggestion for bio-topics in Chopin's *Mazurka* op.67 nr.4 is indicated in Fig. 13.10-11 and discursively commented on below.

- 'A sense of play', 'a sense of enjoyment' and 'a sense of freedom': the tempo indication *allegretto* which is usually defined as 'slightly less fast than *allegro*' (Randel, 2003) refers from a bio-topical point of view to the availability of time that makes one feel at ease and allows for elegant play. The sense of play which is implied in the tempo indication is also present in the type of contouring that Chopin chooses, the vivid use of thrills, 'the sense of variation and freedom' in A2, and the way in which entrainment develops from 'a sense of hypermeasured[416] and suspended dancing' into 'a sense of measured waltzing' in B1. As already mentioned, the sense of dance-induced entrainment is of a special kind, it combines cyclic entrainment with 'a sense of mazurkian suspension'.
- 'A sense of beginning', 'a sense of contouring', 'a sense of ending': in the right hand these bio-topics relate to the gestural behaviour of an imagined dancer (persona) and following the delicate contours of the melodic line, 'a sense of elegance' can be attributed to these gestures. The 'sense of ending' is varied in the *Mazurka*: the eight-bar phrases suggest inconclusive endings that elegantly pass over into the beginning of the next phrase; such a modus operandi fits well the 'sense of elegance' that marks the piece; even the last bar lacks 'a sense of conclusion' and keeps the joyful yet melancholic feeling in the air.
- 'A sense of change': the structural changes in the piece can be interpreted either of an experiential or environmental nature. In section B1 it is not so much a change of scenery but

[416] A 'hypermeasure' is a unit in which each regular measure is one beat of a larger meter; in this case, the meter of 3/4 can temporarily evolve into a 6/4 meter. The opposite phenomenon of 'hypomeasure' occurs when a beat with a meter evolves into a measure *an sich*; hypomeasure implies 'a sense of slowing down' and can be used in concluding a piece.

rather one of vitality, evolving from a descending line and ‘a sense of play’ into an ascending line and a ‘a sense of cautiousness’. The ‘sense of change’ in C1 is more drastic; an important invariant, the key, is modified; this intuitively evokes a change of scenery (either in natural or in mental environment). Moreover, this particular section has not upbeat and very discrete metrical support. This passus may be experienced as a focal shift, a move from a quadratic-mimetic to a quadratic-diegetic perspective that does not present but rather represents a new dream-like situation.

- The sense of change in B21 is of a more subtle nature: the ascending line evolves into a harmoniously supported descending line and evokes ‘a sense of comfort and relief’.
- ‘A sense of height’, ‘a sense of depth’: these loci imply elements of the triadic focus which is also inherent to the composition. They can be considered as ‘special moments’ and be implicitly shown by means of timing, anticipated articulation and dynamics.

Figure 13.10. Chopin *Mazurka* op. 67 nr.4, page 1[417].

[417] The score used for this example is based on an open-domain edition (Chopin, 1880) with corrections as indicated in the autograph from 1848 (Chopin, 2015, pp.152-153).

Figure 13.8. Chopin *Mazurka* op. 67 nr.4, page 2.

13.6 Assessment

What we developed in this chapter is an analytical tool and a vocabulary both rooted in a model of interactional musicality and facilitating the communication and reflection on the interactional and performative possibilities that a musical script holds in relation to states of vitality (or bio-topics). The

framework of this analysis exemplifies how bio-cultural informed performership could work: it starts from an *Image* – a reservoir of personal theories and proto-typical intuitions – allowing a process wherein extra-disciplinary information impacts on that *Image* and then pragmatically and creatively 'jumps together' to come to an informed and more systematic understanding.

Relating personal experience to an informed and systemic framework forms a dialogical win-win situation: from the conceptual framework – which in this case includes interactional streams, various focal elements of performance and modes of interaction and musical devices – environment-related bio-topics can be generated that are informative to intuition-based performance and *vice versa*; from playing the music new insights can be inferred with regard to a systematic integration of a universe of interactional and bio-topical possibilities.

Because *Interactional* and *Bio-topical Performative Analysis* is informed by a multi-layered range of information units and is embedded in a broader bio-culturally framework, it allows for further expansion and critical review of its tenets. Rather than an opinion or dogma, it is an assembled structure of recontextualized information to be shared and discussed among musicians in order to come to intra-practical and transdisciplinary dialogue and creativity.

From a functional point of view, being able to discursively communicate about and reflect on a shared intentional object (a coded or sonic environment) by means of a systematic framework, offers opportunities both for aspirant performers and professionals.

For musicians in the early stages of their formation, *Interactional* and *Bio-topical Performative Analysis* can open doors towards a differentiated, experience-based understanding of repertoire and the performative possibilities that they afford. In addition to deep learning, *Interactional* and *Bio-topical Performative Analysis* allows for the development of a repertoire of differentiated interactional instruments and vitalities. Rather than seeing instrumental didactics focus on developing in a step-wise manner a sequence of technical aspects, a bio-topical perspective can offer new didactical possibilities in making pianists, in the early stages of their engagement with the instrument, aware of primary bio-topics such as 'a sense of beginning', 'a sense of ending', 'a sense of enjoying', 'a sense of recognizing' (in early ABA-forms) and gradually and comparatively exploring the more extended universe of bio-topics.

The complexity, ambiguity and nuanced way in which bio-topics develop in notated music can be considered in a more generic sense as a laboratory for human development and experience, and could well be the location where the treasure and value of Western Art Music in education and society is to be situated.

For the professional, bio-topical analysis presents an opportunity to extend and better understand one's personal repertoire of expressive and interactional tools. Comparing it to the technical baggage that can be attributed as a signature to professional musicians, performers are able to develop their

own signature repertoire from the reservoir of bio-topics. In such a context, the pool of bio-topics is a dynamic instrument that continuously assesses new repertorial applications.