FANTASY AND FUNCTIONALITY

Surveying personal italo disco related musical experience as a metaphoric-affective
conceptualization process

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In this thesis I study personal musical experience in the light of so-called embodied cognition. According to this research paradigm, meaning arises from our interaction with the physical world in a process where the human body has a mediating role. The process has been shown to be metaphorical by nature, due to which I base my introspective findings mostly on the conceptual metaphor theory (CMT) of Lakoff & Johnson. Interaction with environment invokes affects, which has consequences in terms of person's preference for metaphoric content.

The goal of my work is to investigate reasons for my penchant for certain kind of music. Addressing this involves scrutinising my own perceptions and feelings when listening to italo disco, thus, music that I like, and supporting the findings with theories and earlier research. Besides CMT and also traditional music analysis, I utilise, for example, the complementary theories of the sonic object and musical gestures in pointing out experiential entities from textural and timbral elements of an italo disco song. The entities (sonic objects) are expected to arise from an affective sensation of motion, a process where conceptual metaphor plays an important role. Therefore, at the second stage of the analysis, I demonstrate metaphors on the grounds of the sonic objects in an attempt of establishing at least a part of my personal "metaphorical repertoire". Arnie Cox's mimetic hypothesis and framework for the study of musical affect is applied particularly during the second part of the analysis.

The results of the inquiry confirm my hypothesis about the central role of conceptual metaphor in the emergence of (personal) musical experience. The set of metaphors I succeeded to point out suggest that I'm inclined to music that communicates powerful and energetic, thus clearly arousing affects–music that responds to the need of indulging in fantasy.

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Tutkin työssäni yksilöllistä musiikkikokemusta niin sanotun kehollisen kognition paradigman kautta. Tämän lähestymistavan mukaan merkitykset syntyvät vuorovaikutuksessa fyysisen maailman kanssa. Keholla on tässä prosessissa välittävä rooli. Prosessi on osoittautunut metaforiseksi, minkä vuoksi pohjaan introspektiiviset havaintoni pääasiassa Lakoffin & Johnsonin käsitteelliseen metaforateoriaan. Ympäristön kanssa vuorovaikutuksessa oleminen herättää affekteja, millä on vaikutusta siihen, minkälaisen metaforasisällön henkilö laittaa etusijalle.

Työni tavoitteena on tutkia syitä musiikkimieltymyksiini. Metodina käytän omien aistimusteni ja tunteideni tarkkailua kuunnellessani italodiskoa–musiikkia, joka vetoaa minuun. Tuen introspektion tuloksia eri teorioilla sekä aiemmalla tutkimuksella. Käsitteellisen metaforateorian ja esimerkiksi perinteisen musiikkianalyysin lisäksi käytän muun muassa niin sanotun ääniobjektin ja musiikillisten eleiden teorioita pyrkiessäni osoittamaan kokemusperäisiä kokonaisuuksia italodiskokappaleen tekstuurisista ja äänenvärillisistä osatekijöistä. Kokonaisuuksien (ääniobjektien) voidaan olettaa syntyvän affektiivisen liikkeen aistimuksen pohjalta. Tässä prosessissa käsitteellinen metafora on tärkeässä roolissa. Siksi analyysin toisessa vaiheessa osoitan ääniobjekteihin pohjautuvia käsitteellisiä metaforia tarkoituksenani esitellä osa henkilökohtaisesta "metaforarepertuaaristani". Arnie Coxin mimeettistä hypoteesia ja musiikillisen affektin viitekehystä sovelletaan varsinkin analyysin toisessa vaiheessa.

Tutkimuksen tulokset vahvistavat hypoteesini käsitteellisen metaforan keskeisestä roolista (henkilökohtaisen) musiikkikokemuksen synnyssä. Osoittamani metaforakokoelma viittaa viehtymykseeni voimakkaita ja energisiä, selvästi kiihottavia affekteja viestivää musiikkia kohtaan–musiikkia, joka mahdollistaa heittäytymisen fantasian maailmaan.

Asiasanat: italodisko, italo-disko, kehollisuus, kehollinen kognitio, käsitteellinen metafora, metafora, mielikuvaskeema, affekti, affektiivisuus, mimesis, ääniobjekti, musiikillinen ele, eleet, diskomusiikki, EDM

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LIST OF ABBREVIATIONS

CMT   Conceptual metaphor theory

EDM   Electronic dance music

Hi-NRG   High Energy

MMA   Mimetic motor action

MMI   Mimetic motor imagery

1. INTRODUCTION

The topic of this work is embodied personal musical experience and how it can be studied utilizing theories and empirical findings from the interdisciplinary field of research often referred to as embodied cognition. The main focus will be on the conceptual metaphor theory (CMT). Also, the notion of affect and its relation to human conceptualization lies at the heart of my study. In addition, some other theories and research paradigms that can be seen as related or complementary to CMT will be adopted at different stages of my research, whenever found useful in terms of supporting my hypotheses about the origin of my personal musical experience. Of these, special attention will be paid to the theories on sonic objects and musical gestures especially at the beginning of the analysis. Adopting multiple complementary theories is beneficial to my work in the sense that I don't want to rule out any aspect of musical texture and timbre as a source of experiential content. Theories and earlier research on embodied cognition vary in terms of their emphasis on different musical phenomena.

My intention is to scrutinize my own experiences, feelings and bodily sensations when listening to or imagining music, and more precisely to italo disco, a genre of electronic dance music (EDM) fairly popular especially in the 1980's. The goal of my research is to study how music "works", and for this my primary method is to utilize above mentioned theories, empirical findings and my personal experiences to point out affective factors from a musical excerpt of italo disco music. According to theorists like Cox (2017), affect and metaphor are linked in a manner that basically everything that we do (or just think) have some kind of feel, thus affect, and conceptual metaphor is a means of making sense of it, to conceptualize it. Thus, the main idea of this work is to try to indicate through examples how music evokes affects, and how we try to make sense of these feelings/experiences with metaphoric thinking and experiencing. Actually, the path from affect to conceptualization is not necessarily unidirectional, there may be bidirectionality, or some kind of interplay of affective and metaphorical processes as suggested by scholars like Cox. Therefore, it may be that conceptual metaphor is responsible not only for conceptualization, but, at least to some extent, also for the affects to arise in the first place.

Different kinds of music elicit different affects, and these reactions vary individually. For example, a certain combination of metaphors and their underlaying affects with respect to my listening of italo disco could be interpreted to represent my own personal musical experience profile specifically from the viewpoint of embodied cognition. And, as the proponents of the embodied paradigm assert, there is no other kind of cognition. Naturally, these findings and their interpretations aren't exclusively characteristic of me, they also represent more comprehensively the conceptual system of us all. However, it is still quite likely that there are as many "experience profiles" as there are people. Most likely no-one of us shares the exact same experiential combination of metaphors and affects with any other person–especially because this is subject to variation due to cultural background and personality. However, in this thesis, comparative analysis will not be made. Thus, any arguments concerning the uniqueness of my own profile have to be made with great caution.

The reason for choosing this research topic stems from my need to find an alternative way of studying personal musical experience to the so-called Big Five model of personality traits (see Pervin 2003). My initial idea was to apply the model to find out whether the penchant for italo disco music could be related especially to one or more of the traits[1]. However, I came to the conclusion that it is not possible for me to answer the research question(s) with adequate credibility and validity. Thus, I decided to discard the topic. Nevertheless, I didn't want to give up the theme of personal musical experience completely. After some time, I found the field of embodied cognition and, specifically, conceptual metaphor theory. It seemed very interesting and plausible. In addition, its roots are in linguistics, which I have studied, too. The idea of studying the effects of music applying a theoretical framework that deals with how we conceptualize our experience was highly appealing to me. Also, it is not too far-fetched to think that there might be a connection with personality and the composition of individual's metaphoric conceptualization system.

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[1] Openness to experience, conscientiousness, extraversion, agreeableness and neuroticism (Pervin 2003: 47).

1.1. Embodied cognition, conceptual metaphor and other main concepts

Embodied cognition refers to the quality of human information processing where meaning arises from physical energy through the mediating role of the human body (Leman 2008: 43). According to the experimentally verified findings made in the field of cognitive science, the mind is innately embodied. Also, thought has been found to be largely subconscious–even to the extent that most likely at least 95 % of all thought is below the surface of conscious awareness. Being subconscious doesn't mean it is irrelevant in terms of the thinking we are aware of, just the opposite. It lays the foundation of all conscious thought. (Lakoff & Johnson 1999: 3, 13.)

In this thesis I will concentrate on purportedly one of the most central qualities of the embodied mind: abstract concepts are mostly metaphorical. Traditionally, using a metaphor has meant referring to one thing/concept through another, applying the word or phrase to something else than what it normally designates. Moreover, metaphor has been thought to concern language only, it is a matter of words. However, this traditional view of metaphor has been empirically proven as false–or at least incomplete. (Lakoff & Johnson 1999: 118–119.) Not only our language, but also our ordinary conceptual system, thus our thinking and acting, rests fundamentally and inherently on metaphor (Lakoff & Johnson 1980: 3–4). This means that when we make subjective judgments about abstract things such as importance, similarity or morality, or have subjective experiences of for example desire or achievement, the way we conceptualize, reason and visualize about them comes mostly from other domains than the ones that we would easily relate to subjective mental life. Sensorimotor domains comprise most of these other domains. (Lakoff & Johnson 1999: 3, 45.)

Conceptual metaphor is the vehicle, the cognitive mechanism through which conventional mental imagery from sensorimotor/physical domains can be utilized by domains of subjective experience. This can be demonstrated with the physical activity of grasping an object (sensorimotor experience), which through conceptual metaphor translates into conceptualizing understanding an idea. For example, when we feel that we understand something, we use the mental imagery of actually using our hands to grasp something physical in the real world. Similarly, when we fail to understand something, we may image something going by us or over our heads. We may even use a hand gesture tracing a path of something going over our heads or past us to indicate

vividly that the thing in question is beyond our understanding. (Lakoff & Johnson 1999: 45.) In this work I will specifically study conceptual metaphor and its manifestation in music. Image schemas are central in terms of conceptual metaphor theory. Despite the word "image", they are not specifically pictures, but internal representations–much like motor imagery refers to imagined action, representations in motor-related brain areas. The notion of sonic object refers to all sound phenomena and events that can be perceived as wholes, as coherent entities. Musical gestures are, for example, the movements we make to the beat of music. In addition to this kind of body-related gestures, also sound-related gestures exist. They are associated with the perceived movements in sound, such as up- or downward pitches. (Cox 2017: 64; Leman & Godøy 2010: 3, 6.)

1.2. Research questions, methods and progression of the work

My first research question is:

- Which sounding features appearing in a short excerpt of italo disco are the strongest candidates for especially meaningful affective reactions in me, and what these affects would be like?

The second research question is equally important as the first one:

- What are the image schemas and resulting conceptual metaphors that induce the affective reactions related to the sounding features of the first research question, and how the emergence of affect can be explained by means of them?

The first question will be answered in chapter 3, the second in chapter 4. By sounding features I refer to all qualities of the sonic texture of the excerpt such as melodies, harmonies, rhythms and timbres. This applies also to lyrics, even though they are not my primary interest. Thus, everything that can potentially be a source of affect and/or conceptual metaphor is in the focus of my study. With the research questions, I aim at addressing the nature of my personal musical experience, to what extent conclusions can be drawn about my musical preferences and the reasons behind them. My hypothesis is that the affects and the conceptual metaphors can be established by relying on the findings from earlier research on embodied cognition, and particularly

on conceptual metaphor, affect, sonic object and musical gestures. This approach needs to be enhanced with more personal approach by phenomenologically inclined introspection when listening to or just imagining the short passage of italo disco music. I assume that even though individual "general" affects and metaphors can be pointed out from music, personal musical experience arises typically from a combination of them.

The theoretical framework of my work presented in chapter 2 will mainly build on findings made in cognitive science concerning embodied cognition with special emphasis on conceptual metaphor. Supporting theoretical and methodological background will be adopted, for example, from a related field of musical gesture studies that concentrates on pointing out experiential entities from music and the associated action. As a method for establishing the affective and metaphorical content, I will listen to, and also just imagine mental images of, a fragment of italo disco music that I have chosen beforehand based on its effect on me over the years. The song from which the fragment will be delineated is Roy's "Shooting Star (Six Times)" (1987). Furthermore, the chosen fragment seems to contain some of the central musical genre characteristics of italo disco that I pointed out in my bachelor's thesis (Mertsalo 2013). The characteristics will be introduced in chapter 1.3. My assumption is that these are most likely somehow related to the fact that italo disco appeals to me, thus, the characteristics arouse affects that I find desirable. This may happen nonconsciously, too. In addition, the effect is mediated by conceptual metaphor.

In order to be able to analytically and systematically extract the components of my "italo" experience, thus, the musical events/potential sonic objects, I will combine introspection with the ideas on the sonic objects and musical gestures. With respect to the more objective/measurable and music-theoretical characteristics of the sounding material, I will utilize music analysis. This will be done also by using appropriate computational tools, e.g., software for analysing the musical content of a sound file, for example, in the form of a spectrogram. The excerpt containing potential sonic objects doesn't have to be very long, but long enough to contain several passages and/or events that can be considered homogenous in terms of their musical material, for example, rhythm, melody, harmony, timbre, or a combination of them.

When the sonic objects have been delineated, next step is to try to point out affective conceptual metaphors they may comprise (chapter 4). In fact, it may very well be that this will be partly done already while establishing the sonic objects. I assume that sonic objects are essentially metaphorical in nature, thus, pointing out one means pointing out a metaphor. But naturally this condition needs to be supported by theories and/or empirical findings in earlier research. Finally, after establishing the experiential components, thus conceptual metaphors, I will try to point out unifying factors/characteristics among them based on my own interpretation and the earlier research about metaphor and affect. The purpose of this is to reflect the most important feelings and senses of significance I have when listening to or thinking of/imagining italo disco (or parts of it, the sonic objects). If I'm able to demonstrate a recurring pattern among the metaphors, I have established at least part a of my personal (musical) experience profile in terms of conceptual metaphor and affect.

1.3. Italo disco and its musical genre characteristics

The term "italo disco" (alternative spelling "italo-disco") refers to a musical style of electronic dance music that had its heyday in the 1980's. However, the origins of italo disco can be dated already to the late 1970's, and despite its decreasing popularity at the end of the 1980's, the style has remained topical among devoted fans, and new music has been produced to this day. Despite often considered a genre of its own, italo disco owes to the so-called euro disco in a significant manner, and can be understood as its sub-genre, too. For example, the important musical influencers of italo disco include Italian-origin producer Giorgio Moroder and French musicians Cerrone and Didier Marouani. In the USA, the producers Patrick Cowley (with singers like Sylvester and Paul Parker) and Bobby Orlando (the acts such as The Flirts and Divine) pioneered in crafting the sound labelled as post-disco and/or Hi-NRG ("High Energy") that was enthusiastically imitated in the early 1980's Italy. (Wikipedia 2020b; Verrina 2015 [2014]: 19, 21; 55–57; Wikipedia 2020c; Wikipedia 2020d; see also Sicko 2010 [1999]: 23.)

The credit for coining the term "italo disco" is usually given to the Polish-German record publisher Bernhard Mikulski, who named the various disco music productions his label ZYX imported from Italy to Germany as "Italo". This music wasn't

necessarily coherent in terms of style, it was just of the same geographical origin. In 1983, Mikulski launched the first compilation on the emerging genre, *The Best of Italo-Disco* (that eventually extended to an influential 16-volume-series), but for the first time he had used the term already a year earlier. However, in Germany, "Italo" was used on pop music compilation albums as a generic prefix referring to Italian as early as in 1978. Before the invention of the term italo disco, this style of music was usually referred to as *rock elettronico* (electronic rock) or *balli da discoteca* (disco dance) in Italy, and, for example, "spaghetti dance" in some other countries. (Verrina 2015 [2014]: 20; Wikipedia 2020b; De Iulis 2012.)

By 1983, Italo disco was produced predominantly electronically, therefore, with synthesizers, drum machines and vocoders. The music can be characterised as melodically simple, catchy and repetitive, including futuristic sound and sometimes "airy", spatial atmosphere. The rhythm is regular, aimed at dancing. The lyrics are typically English and often sung with a heavy (usually Italian) accent. However, many italo disco songs are instrumental only–especially the ones belonging to the spacesynth sub-genre. (Wikipedia 2020b; Verrina 2015 [2014]: 20.) These characterisations correspond well with my own experience on italo disco, on which I leaned in my bachelor's thesis on the musical genre characteristics of italo disco (Mertsalo 2013). These qualities of the musical texture and timbre were surveyed on the grounds of three italo disco songs I had chosen to represent the genre.

The results, thus, the musical components/events I pointed out as typical of italo disco included certain rhythms (e.g., galloping), riffs/motives, usually synthesized sounds/timbres, time signatures (usually 4/4), keys (usually minor), lush percussions (e.g., hand claps) and reverbs. The complete but most certainly not exhaustive list of them from my bachelor's thesis (Mertsalo 2013) is presented in Table 1. My assumption is that at least some of these genre characteristics emerge from experiential entities such as the sonic objects that will be pointed out in this work, and the effect they have on me is bodily mediated. In fact, Cox (2017: 179) suggests that the appeal of a particular musical genre for a listener is determined by the mimetic comprehension of the real or imaginary exertions and effort (i.e., motion) one may associate with the genre. Sonic objects arise from these kinds of perceptions. Furthermore, the estimated length of a sonic object, thus 0.5–5 seconds, seems to be fairly well in line with my findings on the components of the musical texture of italo disco.

1. Instruments: synthesizers, drum machines and vocoders
2. Bright and/or pompous sounding synthesizer riffs
3. Distinctive and/or synthetic ("plastic") synthesizer sounds
4. Minor key
5. 4/4-time signature
6. Lush percussions, e.g., hand claps and similar distinctly percussive effects
7. Various counter motifs, question-answer motifs, fast ornaments
8. Ambivalence (e.g., cheerful lyrics, but melancholic or wistful atmosphere)
9. Bad English pronunciation, especially in Italian accent
10. Funny and/or obscure lyrics, often because of generally bad English
11. Overtly romantic/corny lyrics often concerning dancing and having fun
12. Simple structure (harmony, melody, rhythm)
13. Highly repetitive structure
14. Reverb and/or delay effects
15. Futuristic sounds and/or lyrics (space, robots, computers etc.)
16. Gallop rhythm
17. More or less naivistic atmosphere: shamelessness, campy and/or kitschy feeling

Table 1. Some central genre characteristics of italo disco (Mertsalo 2013).

In the wake of frequent hit singles in 1983, Italo disco gained international success, too. It has been ever since produced also outside Italy, mainly elsewhere in Europe (e.g., in Germany, The Netherlands and Spain). However, "italo" was produced also outside Europe. As Straw (2008) brings up, many disco productions of the late 1970's and early 1980's perceived as European or Italian were actually from Canada, and particularly from Quebec. It seems that the Quebecois producers and their Italian colleagues had shared aesthetic sensibilities that manifested in florid, hedonistic exuberance, and often also through the erotization of Romance languages and their "sexy" resonances. In addition, there was active exchange of influences in the form of remakes and remixes between Italy and Canada already at the beginning of the 1980's. (Straw 2008: 119, 121.) Naturally, this kind of interchange transforms musical styles and genres also more generally.

One more example of such a transformation process–and also an important subject of study–is the role italo disco played in the development of techno and house music, and through them the whole domain of EDM as we know it still today. Techno was born in Detroit at a time when italo/euro disco had become the most popular party music among the African American high-school students. In Detroit, instead of using the term italo disco (which barely existed at the time), the music was called simply

"progressive". Simultaneously with the development of techno, house music was born in Chicago. The "father" of house, DJ Frankie Knuckles, mixed italo disco records with classic disco and "garage" (after *The Paradise Garage* club in New York City) (Butler 2006: 39–40).

1.4. Earlier research

Earlier research on my exact topic of pointing out conceptual metaphors particularly from the musical material itself (thus, the sounding texture and timbre), not from the language about music, is scarce–and even more so relating to italo disco. In general, italo disco has been studied–and also written about–very little. For this reason, I have to mostly refer to general theoretical studies and literature about the central themes of my work, including the higher-level research paradigm, embodied cognition. The conceptual metaphor theory is relevant in terms of the whole work, but in practise it will be utilised mostly in the analyses of chapter 4. The theories and research concerning musical gestures and the sonic object are mainly applied to the extraction of the sonic objects in the first analysis chapter. All these approaches will be introduced in chapter 2.

When applicable, I will cite some other earlier research, too. This includes traditional music theory and the study of the so-called subvocalization in chapter 3, and the theory of musical forces in chapter 4. The work of Arnie Cox has proved the most useful and relevant in terms of my own ideas and notions on the topic. Cox presents the results of his study of the relationship between musical experience and conceptualization in his book *Music and Embodied Cognition. Listening, Moving, Feeling, and Thinking* (2017). His objective is to address the long-standing enigma of how music "works", how it makes us feel and think the way it does. Essentially, then, he is addressing the question of musical meaning, how we make it from musical experience. (Cox 2017: 1–2.)

According to Cox, in order to musical meaning to emerge, musical experience needs to be conceptualized (Cox 2017: 2). We need concepts to make sense of the world, thus, for example, for thinking and language in general. But where do these concepts come from, and what are they about? Cox's agenda could probably be boiled down to

these two questions. One of his premises is that musical concepts are conceptualizations not only of what we hear, but also of what we feel. Thus, when we describe music, the words we use do not refer simply to sounds–they refer also to the feelings those sounds evoke. Feelings are closely linked to the notion of affect, for whose understanding in the context of music Cox maps out an eight-part framework. (Cox 2017: 2–3.) This will be introduced in chapter 2.4. Consequently, in terms of another central theme of my work, musical affect, Cox's ideas will be adopted.

2. VIEWS TO EMBODIED COGNITION AND MEANING

2.1. Embodied vs. representational meaning-making

The classical/first-generation cognitive science adopted a view of human meaning-making from Western philosophical tradition where what we call "mind" and what we call "body" are seen as two different things, both being the faculties of their own having little or no interaction with each other. According to this dualistic view, the mind is the domain of reason, thus thinking and everything that we consider as especially valued and "high". This is the domain of the rational–as opposed to "lower" irrational bodily traits such as emotion and desire that are traditionally seen as mostly animal. The capacity to rational thinking is what distinguishes us humans from beasts. However, during the last decades, findings in the fields of inquiry such as cognitive science and neuroscience have provided us with plenty of evidence against this dichotomic notion. Any fully autonomous faculty of reason that is independent of bodily capacities (e.g., perception, movement) does not exist. Instead, an evolutionary view according to which reason employs such bodily capacities and grows out of them is supported. This means also that human reason is not fundamentally different from non-human animal reason, but a form of it. (Johnson 2007: 1–2; Lakoff & Johnson 1999: 16–17.)

For most people inquisitive enough to end up pondering such a thing, acknowledging that the body is the central source of experience, feelings and perceptions is most likely not very hard. It is very intuitive–we constantly connect with the world with our senses that very clearly appear to be qualities of our bodies, of us. However, when it comes to apprehension of this experience, thinking and talking about it, the role of the body is no longer clear or evident at all. The body hides out effectively. Moreover, given our still influential Western philosophical and religious traditions, it is no wonder that still in today's world the implications of the research challenging the old mind/body dualism have not entered public consciousness. (Johnson 2007: 1–2.)

Actually, even the scientific community still debates the role of the body in meaning-making. Traditional representational view to cognition has still many proponents. And, even some researchers who are otherwise proponents of the non-dualistic views allow a dualistic ontology affect their theory whenever they have adopted some version of

the representational view. What is central in representational theories of mind and cognition in their most general sense is that cognition, thus faculties like perceiving, conceptualizing, imagining, reasoning and planning, operate through internal mental "representations", which can be for example ideas, concepts, images or propositions. The representations have the capacity for being "about" or "directed to" the external world or other representations. In technical terms, this "aboutness" relation is called intentionality. To phrase the same in layman's terms, we do our thinking with ideas that can be about past, present or future things in the world. (Johnson 2007: 112, 114.)

Admittedly, all this does seem self-evident. Nevertheless, especially the stronger versions of representationalism are highly problematic in terms of their approach to meaning and thought. Mark Johnson thinks that we should not use "representation talk", because this easily leads us fostering the illusion of some kind of inner mental space populated with for example concepts, propositions and functions. These mental quasi-entities, an inner world of ideas, are posited to get their meaning from how they are related to the external world, its objects, event and states of affairs. Maybe the most influential contemporary version of this view, a very strong one, is advocated by Jerry Fodor and his supporters. An essential part of this view is that the alleged mental representation providing the structure and content of our thinking are themselves intrinsically devoid of meaning. They are symbols that can be syntactically manipulated, like in a computer program performing formal operations. (Johnson 2007: 114–115.)

According to Johnson, a major problem with Fodor's view is where this inner language of thought (or "mentalese") gets its meaning from. Fodor's answer to this contains a central notion of "tokenization", which in a somewhat simplified form means that symbols in the language of thought get their meaning, thus are tokened, on grounds of law-like relations to events in the world. Johnson opposes this kind of functionalist theory of mind that treats mind as a computer program capable of running on any suitable "hardware". Because this hardware could be also something else than the brain, Fodor's theory therefore denies that mental states could have any intrinsic meaning that might emerge through the nature of human embodiment. (Johnson 2007: 116.)

Embodiment theory offers a naturalistic alternative to representationalist theories by requiring a radical re-evaluation of their dualistic metaphysics and epistemology. For supporters of embodied cognition, "body" and "mind" are mere convenient abstractions, quick and handy ways to identify aspects of continuous organism-environment interactions. According to this view, cognition and its qualities such as thought and language (or symbolic interaction in general), arise necessarily from organic processes. This reconceiving of mind is centrally about ceasing to treat percepts, concepts, propositions and thoughts as quasi-objects, and seeing them as patterns of experiential interaction instead. This experiential interaction, organism-environment coupling, constitutes all experience. The only way for example thoughts can be conceived of as "inner" is that my thoughts are mine, they are not yours. Actually, they are just modes of interaction and action. Also, because thoughts are processes of experience, they can be said to be in and of the world rather than just about the world. (Johnson 2007: 117.)

Interaction is generally a pivotal theme in the bodily grounding of meaning and concepts. Actually, Mark Johnson calls his view to this interactionist, some others have called their views transactional or enactionist. The term interactionist is not to be confused with the dualistic kind of interaction where two or more independent "things" are interacting. Instead, with things within the interaction Johnson refers to just abstracted dimensions of the basic, ongoing process of experience. The two other terms are not prone to this kind of misinterpretation. (Johnson 2007: 117–118.) Interaction is a central theme also in the notion of affordance introduced by Gibson in 1977. What he originally meant with it was a specific combination of properties (features) of something, typically environment, that allows something to animals. Thus, an affordance provides or furnishes them with possibility to, for example, perform an action–no matter what the end result may be. (Gibson 1977: 67–68.) The concept of affordance has become a crucial issue also for other fields of inquiry than for ecological psychology, the field of James Gibson. This applies for example to cognitive science, philosophy of mind and artificial intelligence studies.

Already one of the pioneering and most influential thinkers putting forward the salience of the body in the emergence of meaning, philosopher Maurice Merleau-Ponty, addressed the issue of how the body and its motor knowledge is the source of the

phenomenological equivalence between perceiving and giving sense to the percept. As he elegantly enunciates:

> "[…] my body is geared onto the world when my perception presents me with a spectacle as varied and as clearly articulated as possible, and when my motor intentions, as they unfold, receive the responses they expect from the world. This maximum sharpness of perception and action points clearly to a perceptual ground, a basis of my life, a general setting in which my body can co-exist with the world." (Merleau-Ponty 2002 [1962]: 292.)

According to this phenomenological account of how understanding emerges no high-level cognitive abilities are needed–only the body is required.

> "Bodily experience forces us to acknowledge an imposition of meaning which is not the work of a universal constituting consciousness, a meaning which clings to certain contents. My body is that meaningful core which behaves like a general function, and which nevertheless exists, and is susceptible to disease." (ibid: 170; Menin & Schiavio 2012: 209–210.)

Motor knowledge is one practical example of the phenomenon described by Merleau-Ponty. When playing by heart, a skilled guitarist or pianist (or player of basically any instrument) usually succeeds in finding the notes or chords he/she wants, thus the right positions for the fingers and the hands–and without much effort or even concentration. But if the music halts for example due to a mistake or a blackout, he/she might have real difficulty of knowing where to put the fingers next to be able to resume. Along with representing the potential basis of musical understanding, this sensory-motor process can also shed light on how affordance manifests itself in music. At the heart of this notion lies intentionality–the intentional relationship of musical subjects and objects that are the participants in chains of actions with a musical goal-directedness. These musical-related acts constitute the musicians' motor knowledge. However, in order to correctly characterize these acts, a musical object can be understood in terms of its evoked acts mainly through the goal rather than the executive side of motility, the actual performed movement. (Menin & Schiavio 2012: 210.)

The embodied approach to musical affordance suggested by Menin & Schiavio emphasizes the intentional, thus goal-directed, relationship between a musical object and a musical subject. According to their approach musical objects are "entities

constituted within the intentional motor-based relation that defines a musical context" (Menin & Schiavio 2012: 211). This may affect the way we understand human musicality, its source, thus ontogenesis. Furthermore, new models of musical learning may be needed. These would guide novel teaching approaches that take into account how the development of the individual's musical/motor-expressive intentions and relevant musical directed motivations form the child's emerging ability to experience music. For example, infants familiarize themselves with musical structures (e.g., repetition, variation) in conjunction with developing their motor acts through manually exploring objects and performing simple sound-oriented actions like hitting, scratching and plunging. These discoveries enable the children to construct a musical context along with basic vocabulary of musical-directed acts. (Menin & Schiavio 2012: 211.)

Even though the concept of (musical) affordance is not directly part of the theoretical framework of my thesis, I will keep its idea in the background, as a leading thought against which the actual applied theories and methodology can be evaluated. I find the notion of musical affordance highly appealing and very plausible. Thus, the idea that there is something in the music that affords one to listen to it, to want–even to need– to listen to it. This affordance can be psychological in nature, and probably mostly subconscious. Therefore, when applying the theory of conceptual metaphor, I will examine my findings also in the light of musical affordance, whether it could be seen playing a role in the metaphorical processes described in my work. The reason for why I consider this kind of approach applicable and worth pursuing is that both conceptual metaphor and musical affordance rely on sensory-motor processes, and they both are involved in meaning-making. Because of this, it is probably not too far-fetched to think there might be a connection between these two phenomena. In fact, they participate in the same neural processes, being parts of the same system in which metaphor is responsible for laying the foundation for reflecting on these ultimately evolutionary capacities: for categorizing and, thus, thinking and speaking about the sensory experiences.

The idea of affordance is discussed also in the work of Arnie Cox, whose mimetic hypothesis will be applied in this thesis. As one of the principles of his hypothesis he suggests that different kinds of music "invite", or, actually, nearly demand different kinds of mimetic engagement. The term afford (or motivate) can be used to describe

this kind of invitation, where for example different passages or styles are mostly different feels (qualia) resulting partly from mimetic participation. (Cox 2011: 11.) In a similar fashion to Cox's ideas, Krueger discusses musical affordances and how they exhibit a kind of felt allure. This means that music is often experienced as irresistible– it is recognized as meaningful, because we are drawn to it emotionally in a powerful way. Krueger suggests that music is experienced as having instrumental value, and affordances specify the things we can do with music. Affordances are experienced as potentiating already from a very early age. (Krueger 2014: 2.)

The main structural features of music specifying the affordances as perceived by the listener are related to movement, and crucially to entrainment, which for its part has affective synchrony as one of its key features. This refers to individuals entraining their movements with one another with respect to, for instance, listening to or performing music together, and to the often-emerging sharing of feeling states as a result. Entrainment responses may vary depending on the style of music and the way it invites its own, unique patterns of entrainment based on temporal signature and affective synchrony. (Krueger 2014: 2–4.) The notions of Cox and Krueger align well with the central idea of my own work: that there's something in the musical components such as musical passages, rhythms and timbres (hence, the musical genre characteristics) of italo disco that appeals to people, and particularly to me. In the following, I will discuss the more specific theoretical background structuring my thesis.

2.2. Conceptual metaphor theory

In this and the next subchapter the central tenets of conceptual metaphor theory will be introduced to the extent that is particularly relevant in terms of accomplishing the research goals of this work. The theory is large in scope and was initially applied to other domains than music (mainly linguistics). Due to this the discussion regarding its wider application will be kept to a minimum.

According to the paradigm of embodied cognition, knowledge isn't something that just emerges from passive perception. Besides indifferently perceiving our environment, we also need to act in it. From music's point of view this can mean, for example, that musical involvement is based on an embodied simulation or imitation of so-called

moving sonic forms. This idea was originally published by Hanslick already in 1854. According to it, just like architecture and dance, music as such doesn't mean something particular–if anything at all. It just consists of different forms and their relationships, but these are intrinsically devoid of meaning. We often interpret music, buildings and dances as expressing something culturally significant, but this symbolic activity is nothing more than a subjective potentiality. Instead, just like forms in general, particularly moving forms have direct effect on human physiology. This physiological response can be thought of as corporeal resonance that is the origin of signification. (Leman 2008: 43, 17.)

Mark Johnson (2007), too, refers to Hanslick when he discusses musical motion, whether it is "real", its central role in our musical experience–and how metaphors are used pervasively to describe these experiences. According to Johnson, musical motion is as real as temporal motion, which too is completely defined by metaphor. As Hanslick puts it, music exists only in our "aural imagination", thus, only as we experience it. Music is not the score and the notes in it, nor is it the air vibrations heard by us as sounds. Instead, music exists where our rich experience of sounds synthesizes into ordered, meaningful patterns extending over time. Johnson formulates: "Music "exists" at the intersection of organized sounds with our sensorimotor apparatus, our bodies, our brains, our cultural values and practices, our music-historical conventions, our prior experiences, and a host of other social and cultural factors." (Johnson 2007: 255.) This is the notion I aim to capture in my work at hand.

Because of this, it is highly likely that even so-called objective truths are neither objective nor necessarily even univocally true. Lakoff and Johnson oppose the notion that truth could be objective, the so-called myth of objectivism. According to them, truth is based on understanding, and metaphor is a principal vehicle of it. (Lakoff & Johnson 1980: 160.) As I see this, truths are just reflections of the universe filtered by our conceptual system that has ended up the way it currently is during the course of evolution by natural selection. Under some other circumstances it may be that "the truth" would look very different. But the fact that we have evolved in this same world we still inhabit allows us to find coherence in it.

The fact that our evolutionarily developed structure enables us to reflect on the world leads to a circle that emerges from the notion that we didn't make the world we live

in, rather, we found ourselves with it. The world seems to already exist before we start reflecting, and we are part of it–the world and us are not separate entities. Merleau-Ponty saw this circle as something between the inner and outer, self and world. But for him this kind of middle way was not a divide, but something that at the same time embraces the distinction and provides the continuity between self and world. (Varela et al. 1993: 3; Merleau-Ponty 2002 [1962]: x–xi.)

Generally, in science circularity is not something to hope for. But, in any phenomenologically inclined research certain amount of circularity is unavoidable, for the reason introduced above. The self examines the world which the self is a part of. This poses a challenge also to my own research at hand, which focuses on the middle way described by Merleau-Ponty, on the continuity that conceptual metaphor provides to close the gap between the inner and the outer. Because my own study depends significantly on my personal, subjective judgement and experience, one has to be careful when drawing conclusions from the results of the work–especially when it comes to generalizing them to other people.

According to Johnson and Larson (2003), the strength of the conclusion that it is possible to draw about the allegedly constitutive role of conceptual metaphor in our experience and understanding has two claims, the safer and the stronger. The safer, and still controversial one, states that how we understand and conceptualize the musical experience, and thus how we use language to discuss music, is to great extent and irreducibly structured by deep conceptual metaphors. The latter claim takes even stronger stance by stating that conceptual metaphors and how they are grounded in our bodily experience fundamentally shape our very experience of musical meaning. Therefore, this interpretation reaches beyond words and discourse. Our understanding and conceptualization of music cannot be clearly separated from how we experience it. Experience doesn't come first followed by grasping the meaning of it. They happen simultaneously. How we understand music affects importantly the way we experience it. And, our understanding is intimately embodied, that is, tied to our sensory-motor capacities and emotional constitution. "Our understanding is our way of being in and making sense of our experience". (Johnson & Larson 2003: 78.)

In this work I want to advocate the stronger claim about the significance of metaphor. Embodiment in general and conceptual metaphor in particular fundamentally shape

our thought and experience, thus our whole existence. As a result, when studying them we essentially study what it means to understand and to experience. When we have a notion of grasping something, what is it that we actually get a grasp of? In their theory Johnson and Larson equate experience and understanding. However, in layman's terms experience usually refers to our initial reaction to something, the feelings it evokes, and to the knowledge our earlier life events have taught us. Understanding, on the other hand, means the earlier mentioned getting grasp of something, intellectually (through thinking) finding coherence, thus meaning, into the notion at hand. Nevertheless, in the light of the idea of embodied cognition Johnson's and Larson's claim seems plausible. Experience and understanding can be thought of as different sides of the same coin.

The encompassing ethos of this thesis is to study musical experience by trying to answer such "traditional" questions like how music affects us and why we like (or don't like) certain kind of music. However, maybe experience can also be thought of as understanding, even in the layman's terms. When music resonates with us, be the reason whatever, it can be said to have meaning to us, it's meaningful. Maybe this way we can talk about understanding, even though we can't necessarily analyse the music or the experience intellectually, like in terms of music theory. In musicological research dealing with music-induced emotions, meaning and understanding are often seen to be based on merely conscious traits of music such as skilfully crafted structure, style or topics. Topics are conventional, culturally specific activities, events or institutions (e.g., pastoral, Turkish march, religious hymn, sigh). All these traits are learned, and thus we often cannot assess them, and the potential beauty, of music in a style or from a culture we are unfamiliar with. (Robinson & Hatten 2012: 80, 84.) Meaning and understanding are related to intellectual activity such as contemplation, e.g., recognition of the style or topic, or reverence for the craftsmanship of the composer. However, this kind of research usually studies classical music or Western art music in general.

Even though I find the stronger claim of Johnson and Larson highly interesting and plausible, it is possible that metaphors come into play not until at the time of thinking and communication. Therefore, they are needed precisely for reasoning with words, but not necessarily for the experience itself to emerge (the stronger claim by Johnson and Larson). As a matter of fact, in the linguistic conceptual metaphor research

metaphors are thought to be found precisely from language–and lots of them really have been pointed out. For example, the MetaNet Project provides a repository of over 650 conceptual metaphors (MetaNet 2020a). This approach corresponds well with Johnson's and Larson's safer claim. This method is usually applied also in the musicological metaphor research, which typically aims at finding metaphors from e.g., music critique or individual persons' accounts of musical experience. However, research where the sounding material itself (thus, the particular events of musical texture and timbre) has been the starting point of the analysis has been conducted, too.

In their pioneering work *Metaphors We Live By* (1980), Lakoff and Johnson speak for understanding the notion of metaphor more widely than as just a rhetorical device created by poetic imagination for extraordinary purposes–not for everyday language, let alone other aims. Also, metaphor has been typically regarded as belonging to the domain of language only, being just a matter of words. However, Lakoff and Johnson have found it to be pervasive in everyday life, along with language in thought and action, too. This finding made them draw the conclusion that our ordinary conceptual system is fundamentally and innately metaphorical, which means that in addition to thinking and acting, we also experience through metaphors. (Lakoff & Johnson 1980: 3.)

However, normally we are not aware of our conceptual system. In our everyday life the way we think and act goes automatically along certain paths, whose essence is not by any means clear or obvious. Because communication is based on the same conceptual system as thinking and acting, our use of language offers a chance for seeing behind this mostly nonconscious process. Thus, linguistic evidence has been the primary source corroborating the pervasiveness of metaphor in the way we conceptualize the world.

As an introductory example Lakoff & Johnson present the conceptual metaphor "ARGUMENT IS WAR"[2] to give some idea of how our everyday activity is structured by a metaphorical concept. A variety of our everyday expressions reflect this metaphor (such as "Your claims are *indefensible*."). The metaphor demonstrates that in addition

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[2] Using capital letters is a standard way of denoting a metaphor.

to just talking about arguments in terms of war, we also win or lose them. The person we are arguing with is called an opponent. We attack opponent's positions, we gain and lose ground. And so forth. (Lakoff & Johnson 1980: 3–4.)

When using the ARGUMENT IS WAR-metaphor there's no physical battle, just a verbal one. But the concept of war structures many of the things that are done in arguing. And, this metaphorical concept also structures how we understand the action of arguing, what we are doing when arguing. If some other culture viewed an argument differently, say, as a dance, we probably wouldn't view such an activity as arguing at all. Therefore, "the essence of metaphor is understanding and experiencing one kind of thing in terms of another". (Lakoff & Johnson 1980: 4–5.)

Conceptual metaphors/metaphorical concepts can be divided into two main groups: primary and complex metaphors. Primary metaphors have the basic structure of a = b in which through cross-domain mapping the two domains, sensorimotor (b, the source domain) and subjective experience (a, the target domain), are combined into single conflated experiential and conceptual entity. For example, the very common primary metaphor, MORE IS UP, has as its source/sensorimotor domain vertical orientation (UP) comprising the primary experience of observing how the levels of piles and fluids rise and fall as more is added and subtracted. The target domain reflects our subjective judgment of this quantity (MORE). The sentence "Prices are *high*" serves well as an example of the ubiquitousness of this primary metaphor. (Lakoff & Johnson 1999: 51, 58.)

Primary metaphors are acquired automatically and unconsciously from our early childhood just by functioning very ordinarily in our everyday world–there is no choice for us. This functioning is related to so-called basic events, things that happen to us over and over again, unfolding in different contexts. Basic events have some special salience and meaning to us, not all recurring events can be counted in this category. For example, we know that lifting a heavy object is more difficult than lifting a light one. This applies to basically all situations–therefore, there is special salience. On the other hand, seeing a particular colour can mean different things in different situations, many kinds of objects can be for example yellow, and typically the colour doesn't affect the way we relate to them. Thus, basic events are simple, real-time experiences that have a particular relation to our goal-oriented interactions with the world. (Grady

1997: 20–21; Lakoff & Johnson 1999: 47.) It's probably not difficult to see the similarity between the notions of primary metaphor and affordance. They both have ecological significance by having to do with real-time sensorimotor action and reaction with respect to dealing with the events of everyday life, and thus they both seem to have biological, evolutionary origin.

Primary metaphors are typically closely linked to the concrete, physical world and to our interaction with it. The immediacy of primary metaphors transpires from these representative examples such as: "AFFECTION IS WARMTH", "IMPORTANT IS BIG", HAPPY IS UP", "TIME IS MOTION" and "STATES ARE LOCATIONS" (Lakoff & Johnson 1999: 50–52). I will return to some of these and others more specifically later when I discuss them with respect to musical experience.

The analogy of the relationship between atoms and molecules applies to metaphors, too. Just like atoms build up to form molecules, so do complex metaphors comprise primary metaphors. Complex metaphors don't have experiential groundings of their own, but they are still grounded via their constitutive primary metaphors. For example, A PURPOSEFUL LIFE IS A JOURNEY is a complex metaphor that gets its grounding from its constituents: primary metaphors PURPOSES ARE DESTINATIONS and ACTIONS ARE MOTIONS. The logic behind these constituents is based on the very common cultural belief that people ought to have purposes in life, and they should also act in order to achieve them. So, the metaphorical version of this cultural belief states that people are supposed to have destinations in life, and to reach those movement is needed. Finally, these are merged with a simple fact of what a journey is: a long trip to a series of destinations. (Lakoff & Johnson 1999: 60–63.)

In addition to primary metaphors, complex, everyday metaphors are built out of forms of commonplace knowledge such as cultural models and folk theories. Basically, any widely accepted knowledge or beliefs in a given culture can be used as a building material of complex metaphorical conceptualizations. These molecular metaphors are often stable and conventionalized, entrenched in the discursive fabric of a culture for long periods of time. A significant part of our conceptual system is formed out of them, including thinking. Complex metaphors are active even when we sleep–they have been found out to structure our dreams. (Lakoff & Johnson 1999: 60.)

In this work primary metaphors will play more central role than complex ones. This is due to the fact that they are directly grounded to the physical world. My aim is to try to point out characteristics of musical passages that could be associated with known conceptual metaphors. I assume that it is easier and more plausible to couple short passages of music, whether directly heard or just imagined, to experientially grounded primary metaphors than to "derivative" complex metaphors whose grounding isn't as clearly demonstrable. I further assume that due to their grounding, primary metaphors may have a more direct connection with affordances, and studying them together may give better insight into why certain kind of music, in my work italo disco, has a profound effect on me. Also, primary metaphors belong to the cognitive unconscious. We can't choose whether to have them or not, they are acquired automatically and unconsciously via neural learning. (Lakoff & Johnson 1999: 56.) Because of this they most likely affect our psychological constitution and our whole experiential reality.

However, due to their unconscious character, it isn't necessarily easy or even possible to point out primary metaphors, especially because a normal human being acquires an enormous range of them just by being in the world, constantly moving and perceiving. But it is still possible to evince some of them–as earlier research has accomplished to do. Unlike in significant part of metaphor research, in my work the method for finding metaphors doesn't rely on language that is used for describing experiences. Instead, I will use methods like music analysis to study the whole texture of a musical passage to find musical sources of metaphors, their "musical equivalents". The metaphors and their descriptions against which the results of musical analysis will be evaluated have been already established in earlier, mostly linguistic research. However, they have been adopted in musicological research, too.

Interestingly, and maybe also beneficially in terms of my research method, some conceptual metaphors aren't manifested in the words of a language. These non-linguistic metaphors may be manifested in grammar, gesture, art or ritual. However, they may have a secondary expression through language and other symbolic means. When analysing primary metaphor, it is important to bear in mind that it is not the result of a conscious, interpretative multistage process. Instead, it is constructed through immediate conceptual mappings via neural connections, thus, via cross-domain conceptual mapping. (Lakoff & Johnson 1999: 57–58.)

2.3. Sonic objects, musical gestures and movement on different timescales

The notion of sound/sonic object (in this work the form "sonic object" will be used) was coined by French musicologist Pierre Schaeffer. It refers to all sound phenomena and events that can be perceived as wholes, as coherent entities. They have to be heard by means of a listening technique called reduced listening, which means concentrating on the sound itself, paying no attention to its origin or meaning. According to Schaeffer, these objects are usually quite short, their duration is usually 0.5–5 seconds. He reminds of the crucial difference between sound as a physical signal and as a perceptual, qualitative experience. It is this experience that allows a listener to hear a "sonic object", which emerges as correlations between the variations of a physical signal and the perceived sound. Psychoacoustics studies these correlations. (Chion 2009: 15, 32; look also Godøy 2011: 239.)

As a result, the sonic object is not the sound body, thus the material source of the sound, nor is it a recorded fragment of a physical recording medium (such as magnetic tape). It is not a notated symbol on a score, and it is not a state of mind. (Chion 2009: 32–33.) These notions on the nature of the sonic object, and especially with respect to intentionality and acoustic action, give rise to think that Schaeffer pursued similar ideas about the essence of our musical experience that were later developed in the fields such as ecological psychology and embodied cognition. Consequently, it is understandable that, for example, musical gesture studies have adopted the notion of sonic object from Schaeffer.

In the field of music research, musical gestures constitute an interesting and fairly popular subject of study that has a link to conceptual metaphor. We all have experience of making gestures to music, for example waving our hands or swaying our body to the beat of the music while listening to or just imagining it. Given how ubiquitous these music-related gestures are and how much enthusiasm and joy people express through them, there clearly exists a fundamental connection between music and movement. In fact, many researchers have come to believe that musical experience is inseparable from sensations of motion. This notion is supported with the tenets of embodied cognition, the paradigm embraced also by the line of research of musical gestures. (Leman & Godøy 2010: 3–4.)

The word gesture has diverse connotations, but it still usually suggests aspects of human motion. These include movements of body parts, for example hand or the vocal apparatus (tongue, lips). Also, the actions or deeds can be semantic, like in the case of making someone a favour, "making a gesture of goodwill". Actually, it is possible to take this diverse use of the term gesture as an evidence of how important people find the idea of showing some kind of recognizable action or movement that expresses an idea or meaning. In the context of music, gestures can be divided into movements that performers or conductors make during the musical performance, and into music listeners' movements that accompany or express the activity of listening. For example, playing a melodic figure is a performance related, productive movement. Conducting gestures are performed to coordinate musicians' actions. Also, movements made in order to impress the audience (like moving one's head during a solo performance) belong to the performative category. (Leman & Godøy 2010: 4–5.)

The gestures that accompany or express listening consist of movements like tapping along with the beat, dancing and swaying. Gestures are often learned, but sometimes they are spontaneous, articulative movements that reflect the musical idea or meaning. In gesture research the primary focus is usually on extension, thus on the physical movement of the human body. The secondary focus lies on what is imagined or anticipated. Thus, on intention. For a movement to be considered a genuine gesture, it is required to carry an expression or meaning in some way. Intention introduces subjective and context-dependent aspects, which are difficult to study. Even though extensions and their underlaying intensions can't be easily separated, if at all, many researchers choose to focus on extension, movements, which can be easily measured for example using video recordings or all kinds of physiological and kinetic sensors. This doesn't mean that intentions are less important, it is just harder to study something that is by nature vague and subject to interpretation. (Leman & Godøy 2010: 5.)

The musical gestures described above are called body-related gestures, movements that in the chain of musical communication control the production of the sound, or are reactions to listening to it. However, they have a counterpart in sound-related gestures, which can be understood as perceived movements in sounds, for example rising pitches or rhythms that can be characterized as galloping. Usually, or at least historically and typically also today, the movements of the human body have produced the movements in sound. (Leman & Godøy 2010: 6.) However, it should be noted that

after the invention of electroacoustic and electronic ways of producing sound, the connection between sound production and the characteristics of the sound itself is no longer as straightforward as it used to be. For the characteristics found in the sound, or even gestures, it is often difficult to point out the corresponding producing gestures, because the sound source can be a dedicated music synthesizer or a computer equipped with a sound generator, and the sounds may differ significantly from what we are used to hear in nature, everyday life or traditional music. Actually, it was for the analysis of this kind of music in which the source and possibly also the cause of the sound are not known, or at least not seen, that Pierre Schaeffer coined the terms acousmatic listening and sonic object.

In my pursuit of musical gestures/sonic objects of an excerpt of italo disco music, I will mainly focus on sound-related gestures. Body-related gestures will be given attention whenever their presence can be demonstrated by just scrutinizing my own actions, for example body movements, without any technical measurements utilizing, for example, sensors or video recordings. This is mainly due to the limited time and space I have for the completion of this thesis–and pointing out the conceptual metaphors will be done from the sound, too. According to Leman & Godøy, analysis of sound, and particularly the movements in it, is a good way of starting to identify sound-related musical gestures. However, even though it is very common in modern science to understand gesture as movement, reducing it to movement as such is somewhat problematic. This is because it is often necessary to have additional knowledge of the underlying expression of meaning in order to study music-related movement. (Leman & Godøy 2010: 6.)

If the effect music has on us relies on the communication of movement or motion, then surely the movement has to have a meaning. After all, movements of the body are supposed to encode sound gestures. Still, after the sound is produced, it's not easy to identify unambiguously its containing gesture. There's no doubt these are difficult questions. Movement is clearly an essential part of gesture, but movement and gesture are not identical notions. It seems that in order to better define gesture, a subjective and context-dependent component is needed to force us to apprehend gesture as movement involving the perception-action system of not only the producer or the observer of the movement, but of both of them. (Leman & Godøy 2010: 7–8.)

To address the problems that link gesture along with movement also to other notions such as action, intentionality, agency and embodiment, Leman & Godøy suggest a different definition of gesture: one that is more focused on how we interact with our environment, and specifically from the perspective of embodied cognition. This is an approach that defines gesture as a pattern that structures our environment from the perspective of actions. This approach understands gesture as a category/structural feature that is a part of our perception-action system. Also, gesture is conceived of as a phenomenon combining both the mental and the corporeal domains. (Leman & Godøy 2010: 8.)

Based on the abovementioned descriptions of gesture, it is undoubtedly fairly easy to notice the similarities between gesture and the notion of affordance. By this I refer specifically to their shared focus on perception-action system and intentionality. Therefore, it is well expected to learn that the theory of affordance has been adopted also in the field of musical gesture studies. By gestural affordances of musical sound, it is referred to the features of sound that music listeners of different individual backgrounds, expertise, or in a particular situation or mood, may focus on. For instance, highly embellished foreground melody or energetic drum accompaniment (which are, in fact, characteristic of italo disco) belong to these textural features. It is about how cues that induce movement are extracted by the listeners from streams of musical sound. In fact, it is a two-way process concerning also how listeners employ images of sound-related movement when they are making sense of what they hear. Thus, images of movement are induced by sound, and vice versa, images that have been learned previously by observing sound-related movement are projected onto sound. Actually, this is an instance of the perception-action cycle originally introduced in the cognitive sciences. (Godøy 2010b: 103–106; Godøy 2010a: 56.)

There is an interesting link between the gestural affordances of musical sound and the musical genre characteristics of italo disco that I pointed out in my bachelor's thesis (Mertsalo 2013). According to Godøy, musical works can be understood as rich and multidimensional gestural scripts interacting with sound. Furthermore, along with emotive and aesthetic sensations in music, descriptions of musical style could be regarded as being based on the gestural affordances of musical sound. (Godøy 2010b: 122.) Thus, it is possible to think that the musical style typical of italo disco is differentiated from other styles and genres by way of these gestural scripts that guide

how we interact with musical sound. Consequently, then, the scripts can be suspected to play a role in why I have a penchant for this type of music.

Both bodily and sonic musical gestures can be observed and extracted at different timescales. More macroscopic timescales express the overall impression of the musical work, for example, how fast or slow, agitated or calm it is. More local timescales involve e.g., rhythmic, timbral or textural features of singular gestures or sound events. However, both global and local sounds and movements can be assumed to work in parallel in actual musical experience. This means that the local is heard in the context of the global, and the global is experienced as a result of concatenated local sound events. (Godøy 2010a: 57.)

In the course of their research, Godøy et al. have pointed out three main timescales. The most local of them, the micro timescale, refers to the 0–0.5 seconds duration range where it can be perceived continuous motion features such as speed, acceleration, direction, jerk and smoothness. Also, more stationary features like postures and effector position and effector shape belong to this category. Effectors are body parts (e.g., finger, hand and arm) which can generate action trajectories. The "chunks" of holistically perceived sound and action work at the level of meso timescale, the 0.5–5 seconds duration range, in which more or less distinct action units or action gestalts are perceived. This is the most salient level of Schaeffer's sonic object, and therefore also the focus of my analysis, even though events shorter than 0.5 seconds can't be ignored because of the many minute fluctuations of sound taking place at this level. The third and the most global duration range is macro timescale. It comprises whole sections, even whole works, and is a concatenation of several meso-level action chunks. (Godøy et al. 2012: 353; Godøy et al. 2010: 691.)

Generally, timescales and their relation to the perceivable features of sound, as well as to the corresponding body movements, can be examined at two different but interdependent levels in terms of so-called event density. The term refers to what kinds of qualities we are able to perceive from the continuous flow of sound, thus from the fluctuating air pressure. For example, for us to hear sounds in the first place, and specifically to perceive pitch and some timbral features, thus the stationary spectral features, the timescale has to range between 20 and 20 000 events per second (i.e., Hz). This is the level of micro timescale, or the sub-chunk level. Even this high event

densities/frequencies may correlate with body movements. For instance, this happens when we sing, hum or whistle a tone. Also, altering the shape of the vocal tract for making different vowels (i.e., quasi-stationary timbres) involves body movement and high frequencies. For the various textural and rhythmic features of sound comprising the perceived qualities of the micro timescale such as pitch, timbre and their division over time–the meso level/timescale of the sonic object–event density is less than 20 events per second. (Godøy 2010a: 57; Godøy et al. 2010: 692.)

It could be assessed that the difference between the two levels is related to whether we are able to perceive the qualities of the sound consciously or not. The higher the event density, thus the higher the frequency, the harder it is for us to tell the difference between the events. In these cases, therefore, when we perceive a pitch or a timbre, the experience emerges automatically, nonconsciously. But when the events take place at a slower pace, at approximately the maximum of 20 events per second, it is possible for us to grasp them (more) consciously. This is related to the phenomenon of chunking–our ability to differentiate wholes, thus gestalts, from the stream of sound as we proceed from the most micro timescale toward more macroscopic entities (Godøy et al. 2010). These include patterns such as musical motifs and different rhythms, and finally the parts, verses, choruses, movements, and the whole musical works. In chapter 3, dividing the musical example with respect to timescales and event densities facilitates my endeavour of pointing out different sonic objects by making the task more manageable. And, most importantly, it allows me to demonstrate how perception of (musical) motion can emerge at all textural and timbral levels–thus, timescales.

2.4. Musical affect and its mimetic conceptualization

An important reason for me to include the theme of affect in this work is that, according to recent research, music appears to communicate affects, not the so-called basic emotions (Cespedes-Guevara & Eerola 2018). Arnie Cox (2017) shares this notion according to which affect is central to our tendency of attributing emotional meaning to music. For his view on the origins of musical meaning, Arnie Cox applies the conceptual metaphor theory of George Lakoff and Mark Johnson (1980; 1999), but also

draws upon ideas from several different fields such as psychology, neuroscience and philosophy. (Cox 2017: 2, 6.)

The linchpin theme in Cox's work regarding embodied musical experience is mimetic comprehension, and particularly one of its manifestations, mimetic musical imitation/simulation (Cox 2011; 2017). The term refers to our many kinds of overt and covert vicarious performance of musical sounds and the physical exertions that produce them. Therefore, Cox's view is reminiscent of that of musical gesture studies discussed in the previous subchapter. The imitation may occur through overt action that Cox calls mimetic motor action (MMA), but also covertly only in imagination, as mimetic motor imagery (MMI)–referring to the relevant muscle-related (that is, motor) brain processes not manifesting in overt action. These premises constitute the core of his mimetic hypothesis, which further states that this kind of mimetic "invitation" to participate always involves affects. (Cox 2017: 11–14, 176; Cox 2011: 15.)

Like in the case of CMT, the foundations of Cox's ideas are laid with the theory of evolution, and more specifically with the evolution of human cognition. One of the central mechanisms of evolution is adaptation, and in Cox's view, it is involved also in musical experience. He advocates the notion that our musical experience is in fact an aestheticization of ancient and practical perceptual-affective-cognitive processes, thus, an adaptation. According to one view, the central nervous system evolved to coordinate increasingly disparate parts and evolving systems (such as internal organs, limbs, respiration and blood circulation) of no longer single-cell, but massively multicellular organisms. (Cox 2017: 2–5.)

The key notion in terms of the ideas presented in Cox's book, and also of the evolution of cognition in general, is that the human capacity for explicit memory, planning and reasoning evolved for the species, but it also develops in individual minds where it is connected with affect and action. Even though these are distinguishable processes, the related experiences of feeling, doing and thinking have a combined function from which each of them, to a great extent, cannot be separated. Of all the qualities of cognition, in categorization this plays out in a very significant manner. This can be seen as a way of answering the implicit question "What is that?". For answering to this we use words, mostly nouns and verbs, and they all refer to a category. Often a single word refers to both a thing and doing, to object and action. Cox demonstrates this with

the musical concepts of leap, phrase and cadence. Because doing something usually also feels something, action normally entails an affective component. Consequently, musical categories blend together sound, action and affect. This is a three-part phenomenology, an experience, where for example in the case of the concept/category of leap, the sound, the action and the feeling of leaping merge. (Cox 2017: 4–5.)

To clarify the three-part phenomenology, it means that when we interpret (consciously or unconsciously) a musical event as, for example, a leap, we understand it in terms of taking actual physical leaps while, for example, walking or running–and of the feel of it. It is no wonder that the quality of the musical event in which two pitches notably far away from each other in a musical scale, succeeding in a rapid manner, has at some point in history lead the speakers of English (or some historical version of it) to put the word leap that originally concerned only physical action to use also in conjunction with the similar event in music. But this is the mechanism how metaphors generally work: by conceptualizing something from one category (e.g., musical event) in terms of a different category (e.g., physical action). The above-described phenomenon of more ancient categories concerning physical actions and objects commonly becoming the basis for conceptualizing evolutionary more recent abstract experience (for example time, quantities and music) applies at least to Indo-European languages such as English. In addition to the metaphoric use of word leap in music, other metaphoric concepts such as a leap in logic and leap of faith have appeared in the language after more ancient physical leaping and the concept of leap. (Cox 2017: 5.)

When we try to make sense of the largely invisible, intangible and ephemeral, thus abstract events and relations found in music, we try to find a way to categorize them. The basis for musical categorizations lies in both hearing and feeling. But how can an abstract phenomenon like music still be experienced as something very definitive in terms of sound and action? For addressing this, Cox has formulated an eight-part analytical framework that deals especially with affect and its relevance in conceptualization of typically complex and ineffable musical experience. Cox emphasizes that the purpose of the framework is not to identify what one should feel in response to music. However, getting involved with music means one will feel something, and for the analysis of these feelings Cox has specified eight so-called avenues, whose relevance varies. Or, all the avenues are equally relevant, a priori, but for any given context they are not equally significant. In addition, they overlap in

various ways. Also, each of them has both a mimetic and a nonmimetic aspect, but in earlier research (where they may have been named differently) the avenues (except the first) have been explored primarily from a nonmimetic perspective. Cox brings now change to this. (Cox 2017: 176, 197–198.)

An outline of the mimetic aspects of the avenues is presented in table 2. I will not introduce the nonmimetic variants, because they are not equally significant in terms of my work. However, they can be described as communicating mostly "objective" experience, something that other people would most likely agree on. Mimetic aspects, on the other hand, pertain to subjective experience, what one would vicariously do. For the sake of clarity and brevity, the names of the avenues that my analyses concentrated on (that is, the avenues no. 1, 2 and 6) are highlighted (bolded), and only these avenues are introduced in more detail.

1. Mimetic participation
• Is based on the often covert, unintentional and nonconscious forms of mimetic motor imagery. The overt forms are obvious–but their affective consequences often less so. Involves exertions (e.g., of playing an instrument), real or imagined, that always have an affective dimension. Mimetic processes also inform each of the seven other avenues, of which they are the most significant in this manner.
2. Anticipation
• Cox adds to "traditional" view on anticipation, prediction and anticipation, thus to a second-person position as listeners predicting what will happen next in external music stimulus, a mimetic compliment: a quasi-first-person perspective produced by mimetic participation. This causes our prediction to be of what we will vicariously do. Listeners' enacted or imagery-confining mimetic exertions are part of the predictive mechanism adding viscerality to the predictive mechanism (rewards and costs of successful and failed prediction).
3. Expression
4. Acoustic impact
5. Implicit and explicit analysis
6. Associations
• Cultural and personal. Music triggers an affective state that is part of the associated experience. However, music was only one source of the overall affective state of the original experience (such as one's wedding).
• Intertextuality: for example, importing the "feel" from another musical work.
7. Exploring taboos
8. The invisibility, intangibility and ephemerality of musical sounds

Table 2. The mimetic aspects of the eight avenues of musical affect (Cox 2017: 178–197).

The avenues are between the external stimulus and the listener. Due to this, the manner of their relevance in dependent on the musical stimulus and the listener, and also on the particular context. However, every time the eight avenues are at work, the five components of the acoustic-auditory fact (pitch, duration, timbre, strength and location) are involved in the stimulus. This means that, except for context, the creation of musical affect involves not eight but forty general factors (5 acoustic-auditory facts and 8 avenues). Naturally, a given affective response is a highly complex phenomenon, and thus not reducible to a listing of factors. Still, when considered individually and as a whole, they are integral. The framework of 5 x 8 may be applied at least in three ways. One is to delve into particular events within a given work. It's also possible to explore particular features found in and across a complete work. The framework can also be applied to analysing recurring types of events (such as dissonant types, topics, forms and genres). In addition, there's no reason why each of the three approaches couldn't be combined with more traditional structural analysis, which can encompass an entire work or movement. Cox mentions also the fourth application possibility: to explore the relationship between an explicit narrative and the musical sounds (music with lyrics, film music). (Cox 2017: 200–201.)

In this thesis, the framework will be applied to particular events of a piece of music. When starting to apply it, the inference has two possible directions. One can start with the acoustic-auditory fact and inferring likely responses to them. Choosing the opposite direction means starting with a particular response and inferring likely sources (motivations) of this. Response can be provided by one or more listeners. The challenge with using the acoustic-auditory fact as a starting point lies in the vast range of possible affective responses. Even cultural habits can affect the response. As for the second kind of inference, it can start from response that can be either culturally shared or more personal and idiosyncratic. This is advantageous, because any response at all can be accommodated. According to Cox, a score isn't required for the analysis at hand, but if it's available, and for those who are fluent in music notation, it naturally offers additional resources for specification. (Cox 2017: 201.)

In my opinion, both directions of inference will be represented in my analyses. In chapter 3 with the extraction of the sonic objects, the starting point appears to be the acoustic-auditory facts of musical texture and timbre. Based on my responses to them, the sonic object will be established. However, because the theoretical framework

applied in my thesis predicts that perception of motion is at least one of the responses, it is possible that also the other direction of inference is adopted–the directions get mixed. In chapter 4 where the image schemas and conceptual metaphors will be defined on the grounds of the sonic objects, the direction is most likely from response(s) (hence, the feeling of motion) to its source, thus, the image schemas and metaphors.

Cox encourages to concentrate on the content that seems to fit one's needs best. For me, this means the musical material that can be expected and felt to communicate some form of movement. However, as Cox points out, when applying his framework, it is very important to bear in mind that often it isn't clear which musical features and avenues of musical affect are the potent contributors to an affective response. Some can be significant just because they are easily overlooked. This applies generally, and also in particular musical contexts. (Cox 2017: 220.) Naturally, this poses a challenge to the both directions of inference discussed above.

Whether the chosen direction is from an acoustic-auditory fact to a response or from a response to its source, the researcher needs to be very careful in specifying the starting point(s) of the analysis. With respect to my own research this means, for example, that when choosing acoustic-auditory facts as starting point (like in chapter 3), how can I be sure of which particular features of the music are significant in terms of my affective responses? Most likely I will choose the ones that seem to appeal to me the most, but this doesn't guarantee that they really are the only ones–or at least the most potent–to affect me. As a matter of fact, they might not be potent at all, or very marginally so. To address this clear methodological problem, in the following analysis chapters, I will look for support for my experiential choices and inference from earlier research.

3. ESTABLISHING THE SONIC OBJECTS

In this first analysis chapter, based on my personal interpretation and applicable theories and earlier research, potential sonic objects will be delineated from an italo disco song that has been chosen to represent the genre mostly because since the days of its release in the late 1980's when I heard the song for the first time, I have found parts of it particularly catchy and fascinating. This has manifested itself via the fact that even though I haven't listened to the song very much during the years, not even every year, still at times the probably most essential motif of the song has started to play in my mind, thus, it has got activated in my mental imagery. This makes it especially interesting in terms of my research, because mental images are closely related to the embodied nature of cognition and to conceptual metaphor (Lakoff & Johnson 1999: 67–69; see also Godøy 2010a).

These mental images that in the context of music have been found to be closely linked to images of music-related actions can also be called sonic images. Furthermore, it is possible to treat them as sonic objects–making them images of sonic objects. Taking into account what has been previously addressed in this work, it seems, actually, that it is precisely these kinds of images of sonic objects that are at the center of my research interest. In addition, we often use various verbal metaphors when discussing our sonic images with other people. (Godøy 2010a: 54.)

3.1. "Shooting star (six times)" as a source of perceived motion

The song that looks like an effective trigger of my musical imagery, and which therefore can be purported to give rise to images of sonic objects in my mind, is Roy's "Shooting Star (Six Times)" (1987, Discogs 2019b). The song can be considered italo disco for various reasons. It is included in many italo disco compilations, and many internet sites refer to the song and to the artist as such (see e.g., Discogs 2020; Discogs 2019a; Discogs 2019b; Verrina 2015 [2014]: 366). Also, the rest of Roy's (real name Ubaldo Roy Zambelli) few recordings are similarly labelled. Furthermore, Memory Records, the record label behind "Shooting Star (Six Times)", and its founders Alessandro Zanni and Stefano Cundari, are known for many successful italo disco acts besides Roy, such as Koto, Hipnosis, Cyber People and Ken Laszlo. (Discogs 2019b;

Discogs 2019a; Discogs 2019c.) Additionally, and not the least importantly, Roy's song seems to contain many of the musical genre characteristics of italo disco from my bachelor's thesis (Mertsalo 2013). Thus, it really does sound like "italo".

I will try to find sonic objects only from the parts of the song that appeal to me the most. There is one particularly appealing section, but it recurs with some variation. This part of the song is the chorus, which at times occurs with vocals, and sometimes as instrumental only. I don't consider necessary to analyse the whole song, for example, its musical form, but it can be noted that verse-chorus is the structure that most likely describes "Shooting Star (Six Times)" best. Therefore, we are talking about a typical pop song. However, "Shooting Star (Six Times)" is also typical electronic dance music in the sense that the mix is fairly long (over 6 minutes), and in addition to verses and choruses, the song contains an intro and more than one "interludes" that vary the earlier introduced material, mostly instrumentally.

Because of my mental imagery, it is clear on which part of the song it is appropriate to concentrate in order to find sources of musical gestures and conceptual metaphors that are relevant to my work. Additionally, the part is quite easy to distinguish from the rest of the song. It seems to have clear beginning and ending. And, its length, approximately 8 seconds, is long enough to potentially comprise one or more sonic objects, whose estimated length is typically in the range of 0.5–5 seconds. Due to this is would probably be adequate enough to, without any further analysis, accept it to contain at least a single sonic object, and move on to pointing out the sources of conceptual metaphors from it. However, because sonic objects, musical gestures and conceptual metaphors seem to be linked, I find it interesting and beneficial to pay attention to the more detailed qualities of the musical passage in question: to evaluate whether it as a whole, or one or more subparts of it, could really be regarded as sonic objects, as experiential entities in their own right. I expect this work to be rewarded at the later stages of my study.

In addition to listening to the italo disco excerpt, a spectrogram will be used to enable more detailed and precise exploration into the musical texture. Studying the spectral qualities of the passage visually may help to notice something that the ear easily overlooks. At least the aural scrutiny can be confirmed with the help of the spectrogram. However, as Denis Smalley sees the role of spectrogram/sonogram in his

influential analytical method/descriptive tool for describing and analysing of the spectral fluctuations of electroacoustic music, spectromorphology, this kind of computerized graphic spectral analysis is merely a useful aid, not a solution. Furthermore, spectrograms have to be always interpreted, they are not representations of the music as how human ear perceives it. Thus, there is always subjectivity involved in terms of what is considered perceptually essential, for example, how much detail is adequate–not too much and not too little. (Smalley 1997: 107, 108.) Italo disco resembles electroacoustic music in the sense that it is produced electronically.

The sounding material of "Shooting Star (Six Times)" used in the analysis is from an mp3 file (bitrate 320 Kbps) which I have downloaded from the internet already a couple of years ago. The same version (albeit not with the same sound quality) of the song can be listened e.g., from YouTube (YouTube 2019). The excerpt I am focusing on is located at the time interval of approximately 1:37–1:45 (min:sec). It includes the central phrase of the chorus without its instrumentally identical repetitions. Because of the high bitrate, the sound quality of the mp3-file should be more or less the best possible for a compressed, thus, lossy, audio file format such as mp3. I assume all the psychoacoustically adequate and relevant sound data is still present for both the aural and the visual (spectral) analyses. Consequently, I trust there is no need to acquire the uncompressed file.

My approach to the extraction of sonic objects combines experiential, perception-driven (top-down) and data-driven (bottom-up) methods. The use of spectrogram represents the latter. In their article about classifying music-related actions and building a database containing this information, Godøy et al. (2012: 352) see this kind of approach of combining qualitative and quantitative methods necessary for their task. It may not be equally necessary for my research, but, as I see it, trying to find correlations between high-level sensations of motion and sound and low-level signal-based data can still prove beneficial–at least for demonstrative purposes.

I consider it necessary, or even mandatory, to start the quest for sonic objects from my own experiential impressions before trying to further validate and specify them by applying theories and earlier research. It is important to emphasise Schaeffer's notion on the character of a sonic object: the physical sound signal can't be used as a starting point of the study of sonic objects. The object doesn't exist at this point. Only after we

hear the sound can we possibly hear a "sonic object". It is solely "of our hearing". According to Schaeffer (see Chion 2009), when sonic object emerges there is always specific foundational intention involved, the object doesn't exist in itself.

In the following aural analysis, the target excerpt will be listened to through a pair of Sennheiser HD 280 pro headphones while playing back alternately either on Sonic Visualiser (Cannam et al. 2010) or Logic Pro X software running on a MacBook Pro laptop. Quality closed headphones were chosen over (quality) studio monitors, because listening takes place in a town apartment where there can be some background noise, and headphones generally allow more "clinical" and close listening. For example, even the minute fluctuations of sound can be perceived more easily. However, due to the psychoacoustic nature of sonic objects, listening conditions affect their characteristics. If I listened to the target excerpt through different headphones or through loudspeakers, the sonic objects I would be able to distinguish could be slightly different compared to the chosen setup. It is likely that even the number of perceived objects wouldn't be exactly the same.

Before starting the actual analysis, it is useful to have some kind of visual representation of the target excerpt to which to refer to during it. For example, the found sonic wholes/potential sonic objects can be pointed out in the diagram. In order to accomplish this, I recreated the most discernible melodic, harmonic and rhythmic elements of the excerpt using Logic Pro X music production software and a keyboard. I looped the excerpt on Logic, and simultaneously, by ear, tried to play the most audible and reproducible components of the sounding texture. Thus, there was trial and error involved. And, presumably some error remained. In order to perceive the more quiet or ambiguous elements of the texture clearer, I used one of Logic's graphic equalizers to heighten or quiet the needed frequency ranges. Because this method alters how the excerpt sounds, it alters the sonic objects, too. Thus, I will not use it in my actual aural analysis. However, I considered it fairly safe to use the method for the recreation, because I was able perceive the sounds even without the equalization.

My goal was not to replicate everything in the excerpt–it would probably have been generally impossible. Too many factors, such as used equipment (e.g., synthesizers, drum machines, effects, recording technology) affect the end product and particularly its timbral qualities, and I don't have the knowledge of the equipment and the rest of

the production process originally applied to the making of "Shooting Star (Six Times)". However, it is practically certain that the instrumental parts of the song have been made mainly with synthesizers, drum machines and sequencers. They sound like that, and this has been the primary production method of electronic (popular) music and EDM already from the 1970's when the first affordable commercial synthesizers came to market. However, for drums, sometimes a real drummer is/was used, too. Furthermore, qualities like timbre are very difficult or impossible to illustrate. In addition, even if this was possible, depicting everything could be potentially harmful. The diagram could end up too difficult and confusing to read.

On the other hand, "reverse engineering" of the target excerpt could be used as a research method that allows better understanding of the composition of the musical texture. Applying it could lead to very interesting insights, also with respect to personal musical experience. But, for the above-mentioned reasons, this would be too difficult and time-consuming, even impossible. Therefore, recreating a simplified representation of the target excerpt will suffice, thus, the score generated by Logic based on the tracks I have made (Picture 1). It provides enough information for demonstrating the central structure of the target excerpt. Nevertheless, it doesn't contain even all the melodic, harmonic and rhythmic material, it is too difficult to discern everything that takes place in the sounding texture, at least with certainty.

For example, quite heavy use of echo-type effect(s) (called delay in professional audio) affect probably all the three components of the texture, and timbre, too. The result of the effect(s) is hard to recreate/transcribe precisely. In addition to demonstrative goals and feasibility, the decision on what was included in the recreation was made based on how well these notated textural components could provide potentially useful, visually analysable material–for example, in terms of the affective effects of the melodic or harmonic progressions.

Interestingly, the tempo of the target excerpt seemed to drift a bit. This may be an impression caused by the echo, or a result of the use of an imprecise sequencer or drum machine, or more than one of them. It is well known that some drum machines of the 1970's and 1980's were not as precise as their successors. This could lead also to desired effects, such as interesting grooves when, for example, if kick/bass drum, snare or hi-hat didn't "hit the grid" precisely, meaning that the drum sound didn't start

exactly when it was supposed to, e.g., at the start of the measure or on the second beat. There was a slight delay. However, the timing imprecisions seemed so subtle that their side effects could have gone unnoticed. In any case, these phenomena hindered the recreation of the target excerpt. Therefore, in order to make the score and its interpretation clearer, I decided to use Logic's quantization algorithm on some parts of the recreation. Quantization means eliminating the rhythmic imprecisions by setting the notes on beats or their fractions.

Naturally, something important in terms of musical experience can be lost with this kind of clarification, if at least the visual part of the analysis is made based on a simplified representation of the original sounding material. However, the score will be used mainly for illustrative purposes, the actual analysis will be made based on what I hear and feel. Nevertheless, even though algorithmic analysis can reveal something that human (conscious) ear can't, my analysis will be mainly based on personal conscious experience. In any case, it is what is true to me. However, I will additionally consider possible nonconscious effects, because they strongly affect our conscious experience.

Already the first stage of my aural analysis, the recreation of the central components of the target excerpt involved close listening. It continues in the actual analysis that I will conduct by repeating/looping the target excerpt as many times as I consider necessary, utilising the loop functionality of Sonic Visualiser (Cannam et al. 2010). If I find certain parts of the excerpt requiring closer inspection, I may listen to/loop them individually. A part like this may turn out to contain a single sonic object, or several of them. However, I will draw the line somewhere, even though it seemed possible to come up with even more sonic objects. It's not necessary for my work to establish all of them to make a point. Most likely it would be impossible, too. During the listening process, I will not only point out the potential sonic objects and where they start and end, I also intend to describe the reasons for my decisions–to the extent I am able to distinguish them. This means, for example, that I describe the feelings and sensations I relate to the parts, such as excitement, lightness, darkness, or even sense of tonality or other features that are maybe vaguer in terms of conscious perception. However, the most important experiential content that I am looking for is a sense of motion and/or action.

In fact, I will try to categorize the experiential wholes in terms of their sources of perceived motion, therefore, which component(s) of the musical texture (e.g., pitch, rhythm, timbre) the sensation can be associated with. I will also define the type, thus the subcategory of the motion (e.g., leaping or galloping). In addition to the written description, the result of this will be presented in a table. The categorization already at this stage of the analysis makes the stage of establishing the conceptual metaphors more straightforward. However, at this stage of the analysis, the categorization is merely a biproduct of establishing the potential sonic objects, and also a method that helps in accomplishing this task. So, it should be considered only preliminary. The search for the sonic objects and their potential sources of experienced motion (thus, pitch, rhythm etc.) will take place at different timescales. The potential sonic objects and their explicit characteristics demonstrated in this experiential analysis will form the source material of the second analysis chapter about the image schemas, conceptual metaphors, their affective dimensions, and how they can be suspected to have an impact on my music preference.

Picture 1. Notation/transcription of the main melodic, harmonic and rhythmic components of the target excerpt. From top to bottom: 1. sung melody and lyrics, 2. accompanying synthesizer motif, 3. quiet pad-like background chords, 4. the tonal harmonic progression (not explicitly sounding, my own rendering), 5. snare drum accompaniment, 6. kick/bass drum accompaniment, 7. "ticking" 16th note background pulse, 8. galloping rhythmic feel. The upbeat-like snare drum fill before measure no. 1 is included for its leading function, otherwise it will be left out from the analysis.

As I start to close listen to the target excerpt from "Shooting Star (Six Times)", one of the most distinct first impressions is that the music seems to move forward firmly and steadily. Also, it sounds repetitive, as if composed of only few recurring elements–which it, of course, is. The focus of my attention is drawn by the ethereal-sounding, bright and rapidly echoing synthesizer motif together with the vocal melody that is sung in a sincere and emotional voice and manner. The singing sounds somewhat amateurish, even being slightly out of tune, which, on the other hand, enhances the sense of authenticity. Also, the energetic yet simple drum accompaniment stands out. The fairly quiet and long synthesizer pads playing chords or dyads can be barely heard in the background. Actually, despite their faintness, they catch my attention easily, and suddenly the roles change: the rest of the texture turns into supporting background, building on the basic harmonies of the chords/dyads. There is something hypnotic in their plainness. The virtual lack of expression is, actually, quite expressive. Maybe this feel is caused by the contrast between them and the energetic other elements of the texture. They express the same tonality, but with opposite means. Generally, the atmosphere of the excerpt is wistful and melancholic, but hopeful, too.

3.2. On the meso timescale: melody, metre, harmony and tonality

Next, I am going to concentrate on the experiential wholes, thus, the possible sonic objects. In my experience, the most distinct wholes are the phrases or motifs, or combinations of them, that form the entire excerpt. They can be examined at the level of all the components of the texture playing back at the same time, or at the level of only one or some of them. Quite clearly the excerpt is composed of four of these kind of phrases–of which two seem to be instrumentally identical. Thus, they (measures 1 and 2) repeat also in measures 3 and 4. Also the vocals of measure 1 and its melody repeat in measure 3, and there are no vocals in measure 4. Therefore, the excerpt is highly repetitive. Despite its length (approx. 8 seconds), it could be argued that the whole excerpt forms a single sonic object. I do experience it as an entity. The way it is repeated over and over again during the piece intensifies this impression. In addition, the excerpt seems to have emphasized beginning and ending: the snare drum fills preceding and ending the excerpt appear to function like an intro and an outro.

However, I will not treat the excerpt in its entirety as a sonic object. It is probably a bit too long to qualify as one, and it is more practical for my purposes to concentrate on its constitutive parts. Therefore, the first experiential wholes and thus potential sonic objects are each of the four measures of the target excerpt (objects 1–4). I will use numbering from 1 onwards for denoting the objects. Even if the entire texture sounding in the measures can be considered a whole, in my experience the bright and echoing synthesizer motif labelled as Instrumental 1 in picture 1 (staff 2) is particularly catchy even to the point of defining the whole song. Furthermore, it is that specific element of the song that most often starts to play in my mental imagery–thus, the instrumental only. In fact, this is understandable, since in some passages of the entire song the part (with the other instrumental elements) is playing without vocals, appearing as the most central, distinguishable element of the instrumental texture. For this reason, it would be possible to consider the instrumental material of each measure a whole in its own right, too. In fact, the last measure is initially instrumental only. However, I won't do this, because these new objects wouldn't introduce any new sources of perceived motion compared to the rest of the objects, either already established or the ones to be discussed later.

When I assess reasons for experiencing the just indicated components of sounding texture as entities, the first thing that comes to mind is that like in the case of the entire excerpt, its constitutive parts seem to have a beginning and an ending. It just feels like that. And beginning and ending can easily be associated with motion–moving from one place to another. Actually, the feel that the excerpt consists of wholes comes from the timing of the lyrics, too. The flow of singing pauses at the end of each measure. This is understandable, because the lyrics and the instrumental parts follow the same tonality, the same harmonic progression. Naturally, this is a rule in tonal music– otherwise the music would sound dissonant, "making no sense". In fact, the whole excerpt feels like having a start and an end, most likely this is why I have chosen it as an excerpt. But, this, too, can be considered normative at least in Western music: the time signature, thus the metre of the music, dictates how the piece is divided into rhythmic wholes and sub-wholes in a very constant, predictable manner. It creates the flow of music that we who live in the Western world are used to. In some other parts of the world rhythms are treated differently.

Another quality of the texture that seems to have the capacity of enabling the differentiation of one component of the texture from another, and thus making it possible to experience it as an entity, is tonality. As already mentioned, tonality can manifest itself e.g., in harmonic progression, which becomes apparent from the sonic objects 1–4, thus, in practise, from all the measures of the excerpt. Each of them consists of one or two harmonies/chords (staff 4 of the picture 1), which seem to constitute perceived entities. Each of the measures form a whole in this respect, and, highlighted by the drum accompaniment, the metre strengthens this impression–in a way, locks it. In fact, along with the metre, the tonality changes most likely play an important role in the experience of the measures having a beginning and an end. However, in terms of experiencing a harmony or many of them, thus harmonic progression, as an entity, also it has to be perceived as having a start and an end. This could be thought of as being straightforward in the case of only one harmony/chord. Its boundaries are clear–at least in the sense that it consists of continuous sounds that remain the same for the duration of the chord. But, how does this apply to harmonic progression, for example, in measure no. 2?

The explanation lies in the theory of tonal degrees and their tendencies, according to which there are differences in the perceived stability of the notes/pitches of a scale, and the harmonies/chords built on them. Some of the degrees feel stable and passive, as if not requiring further action. This is especially the case with the tonic, the first (or "home") degree of tonal music, the "center of gravity" of any tonal composition. The other degrees either move away from it or are on their way back to it. They seem active. Because "Shooting Star (Six Times)" plays in the key of E minor, the opening chord of the excerpt, Em, forms the tonic harmony. The two other degrees found in the target excerpt, the third (III) and the seventh (VII), are less stable. The third degree has tonic tendency, it can be said to expand the tonic, but generally its role is to mediate between degrees, to provide a rest approximately halfway from the tonic to the dominant (normally the fifth/V), the other fundamental degree of a tonal scale in addition to the tonic. Instead, there is the VII degree, that in the case of natural minor of our example can be called the subtonic, whose typical function is to take the role of the dominant, thus, to create instability that requires the tonic for a sense of closure. (Aldwell & Schachter 2010 [2003]: 4–5, 16, 60, 227.)

Consequently, the harmonic progression of the target excerpt is quite typical and simple. Nevertheless, it's effective, and it aligns well with the metre–and, naturally, with the melody that belongs to the same progression of harmonies. Even though the harmonies and their combinations can be considered belonging to the already demonstrated sonic objects, it is possible to study them separately, without the other components of the texture. I can do this in my mind, thus, in my mental imagery. It would also be possible for me to utilize my recreation of the target excerpt and, for example, play back the harmony track only. However, I choose not to do this, because, after all, the rough sketch made by myself is by no means comparable to the original. Most importantly, it just doesn't sound the same. Thus, the sonic objects are not identical. I trust it is fairly safe to lean on the mental imagery of the original target excerpt, a mental simulation of only part of it–if it's really possible to separate its experiential content from the memory of my own recreation. However, I don't consider this a significant methodological problem.

The playback of the harmony only by my mental imagery confirms the predictions of the tonal theory: the tonic of Em (measures 1 and 3) really sounds stable, and, therefore, not necessarily requiring anything else in order to be felt as an entity. But this is not the case with the degrees III and VII of measures 2 and 4. They don't seem as much self-contained. As a result, they occur as a pair–and together form an experiential entity (discussed later in this subchapter). This means that single chords aren't necessarily experienced as entities, at least from the point of view of felt progressive motion in a song. The next object (no. 5) crosses measure lines. It consists of measures 1–3 especially with respect to tonal harmony. It starts from the tonic and ends to it. Thus, it is like a miniaturized version of a song. Because of this it is no wonder it has been used as the main ingredient of the chorus. It is self-contained, and can be easily repeated: either as such, or complemented by the III->VII progression of measure 4, which leads the chorus/phrase naturally to its repetition–back to the tonic, back home. Therefore, the whole target expert, too, forms an entity from the point of view of tonal harmony.

Based on what has been discussed so far, it seems that motion is generally an essential experiential component also with respect to what is perceived as an entity. This strengthens the notion that it shouldn't be treated as a separate experiential category, if it pertains to the essence of musical experience. Thus far, I have pointed out potential

sonic objects in terms of melody, harmony and metre at the higher structural level of the target excerpt. And, like almost always at least in Western tonal music, these three central components of musical texture support one another, they align effectively. This becomes apparent for example in the way they affect our experience of the constitution of a musical piece. In the following, I will study my experience of their role in the formation of smaller experiential units, in practise, those shorter than one measure. Also, I will address the fourth central textural component, timbre.

As was demonstrated, tonality is an important source of perceived motion. The feel arises from changes in tonal harmony, thus, changes of chords towards a "waypoint", or home, the tonic. Therefore, the source of this experience is mainly the waiting of the closure/end, thus, expectation–not the closure/end itself. It is usually possible to identify experiential entities–entities with a feel/an affect–from this horizontal flow of events even though the end is not reached, or at least not yet. However, tonality can be perceived also as a more stationary phenomenon, thus, from the point of view of vertical harmony: simultaneously sounding notes. Next, I will discuss my experiences about individual harmonies, and also short harmonic progressions of two chords. Short melodic lines will be addressed, too. In terms of timescales, we are moving closer to the micro timescale.

The target excerpt begins from E minor harmony. As is typical of a minor chord, it sounds somewhat wistful. In addition, as the tonic of the harmonic progression, it feels foundational, like a reference point. Thus, it has the feel of its own, but not totally independently of the other harmonies of the texture. A reference point requires something that can refer to it. We experience tonal harmony as a set of sounding events. Nevertheless, of all the notes or harmonies of a tonal scale, the tonic is the most independent. Due to this it would be possible to consider this kind of single chord an experiential entity. Even though the other individual chords could be seen as wholes, too, they will be paid less attention. This is because, in my experience, their effect relies more on their participation in the harmonic progression than on them as individual harmonies. Also, my goal is not to include all possible experiential wholes, just the most effective and representative of them. Hence, the next sonic object (no. 6) is the Em harmony found in measures 1 and 3. Categorizing it isn't straightforward. What is its effect based on? Sense of motion? Maybe surprisingly, yes. That is, from

the point of view of the lack of it. As a starting and/or ending point of experienced action, it is the fundamental reason for the feeling of motion to arise in the first place.

Actually, Huron (2006: 143–146) has demonstrated how only thinking of different individual scale degrees in the form of individual pitches without any musical context can evoke qualia, thus, subjective and conscious experiences of quality or property. This applied also to other degrees than tonic. So, the result gives reason to think also other scale degrees can be significant also on their own. And, individual pitches are the building blocks of chords. Therefore, the same phenomenon most likely involves chords, too. But, in my understanding, even in this kind of scenario of at least virtually individual pitches or chords, the reason for qualia to arise in most likely tonal, thus related to succession of pitches or chords.

However, would it be possible that the reason for the Em harmony to have an effect on me is something else than its function as the tonic, and, thus, as a starting or an ending point of movement? Could it belong to an experiential category of something else than motion? It is possible. However, even if we experience that music communicates some other source of affect than motion, it doesn't mean that the underlying cause for the experience to arise wouldn't still be some form of MMI (mimetic motor imagery). For example, my feeling of E minor sounding wistful and maybe a little sad and short of energy can still be due to some kind of perceived motion, or a feeling related to it, such as tension. Therefore, I could define new experiential category in addition to motion for individual harmonies as experiential wholes–even though it is hard to say what this would be. But luckily it seems I don't have to do this. Tension and rest can be experienced in a series of tonal harmonies, but even within a single harmony: I communicates rest, III communicates tension. And, there is some evidence supporting the notion that the way we experience the musical modes of major and minor, and also harmonic characteristics generally, has to do with perceived consonance or dissonance, thus, rest or tension, within a single, vertical harmony.

During the long history of efforts to explain why music seems to express emotion, the relationship between pitches has been regarded as one important cue for this. The effect has been assigned particularly to the two intervals between the first and the third scale degree. As the name of the mode implies, major scales include the major third variant of this interval, and, respectively, minor scales the minor third variant. (Curtis

& Bharucha 2010: 335.) Traditionally, major third, sixth and seventh have been associated with the "positive" emotions such as joy, confidence, serenity, love and triumph, whereas corresponding minor forms have been thought to convey "negative" emotions like sorrow, fear, hate, despair and disquiet (Cooke 1959: 50–51). Another way of approaching the effects of intervals is based on their perceived consonance and dissonance. If the harmony consists of interval(s) perceived as mostly consonant, it is normally experienced as stable and complete. The tendency of sounding unstable and incomplete is related to more or less dissonant intervals. Furthermore, dissonant intervals are thought of as having the ability of arousing emotions–consonant intervals the capability of quieting them. (Maher & Berlyne 1982: 11.)

In the target excerpt, the second inversion of the E minor tonic harmony/triad consists of two intervals, perfect fourth (B–E) and minor third (E–G). Fourth is typically considered a perfect consonance, and minor third an imperfect consonance (Sibelius Academy: Music Theory 1 2020). The rest of the harmonies of the target excerpt (G and D) are both major chords in root positions, and thus clearly consonant. Therefore, in terms of music theory, all the three harmonies should be more or less consonant. This matches well with my own experience of the expert, the whole song–and italo disco in general. Harmonies are almost always basic and straightforward. As a result, it would be expected that with respect to vertical harmony, there are no single chords standing out as particularly expressive, thus, communicating feelings of tension and overall energy that could be linked to perceived motion "inside" a chord.

However, despite this virtual–and theoretical–lack of tension, if I concentrate even more closely on the harmonies of the excerpt, especially the opening tonic harmony begins to feel more expressive than the rest two chords. As it turns out, this appears to be a quite common phenomenon with respect to chord inversions. They have been found out to be perceived as more energetic and tense, and thus less consonant compared to their root positions in a setting of single, isolated intervals and chords (so-called sensory consonance or dissonance). Of course, within the target expert the chords are not in isolation–they participate in a harmonic progression and are generally within musical context (so-called musical consonance or dissonance). (Lahdelma & Eerola 2016: 2–3.) Nevertheless, I assume it is still possible to think that single chords can have similar effect also in connection with other chords and melody. However, among others, the research of Arthurs & Timmers (2016) suggests that this influence

of context depends on the chord, whether its harmonic function is familiar, and whether its stability/listener's expectation is violated. In the case of basic major or minor chords especially in their familiar functional positions, context didn't appear to be of significant importance compared to more dissonant and ambiguous ones. As already noted, italo disco utilises mostly quite basic harmonies (albeit inversions, too), and typically in a conventional manner.

Furthermore, for example research of Lahdelma & Eerola (2016: 17) and Lahdelma (2017: 17) suggest that perceived vertical and horizontal harmony are strongly related. Single chord is the basic unit of harmony, but in practise harmony and voice leading interact constantly–neither of them usually exists without the other. As I understand this, it would be even possible to think that they manifest the same phenomenon. History suggests that horizontal intervals between successive tones of musical melody have existed much longer than piling up the tones to form vertical harmonies. In addition, there is reason to think that judgments of consonance and dissonance are affected by enculturation in both single isolated chords and chords within a musical context. (ibid. 17–18.) Thus, the phenomenon appears to be at least partly based on learning–a notion that, not so surprisingly, has often been linked to the perception of musical modes, too (see e.g., Lahdelma 2017).

The previous discussion reflects accurately my own feelings when trying to experientially assess the harmony-induced perception of affect. It's hard. Of course, this is no wonder given the uncertainty about the nature of the phenomenon that prevails even among the most distinguished researchers. The effect has been found out to be subjective, and context-dependent, too. Also, it wouldn't be even possible to become aware of the reasons for the experience to arise by just relying on one's own feelings. At least reference to previous research is required. However, based on my brief review of the related research, I consider it justifiable to think that sonic objects can be pointed out also from vertical harmonies, not just from horizontal tonal harmonic progressions–which was to initial reason for pointing out the object no. 6 (the Em chord). Therefore, I will establish a new experiential category for the perceived affect induced by vertical harmony, even though it is practically impossible for me to differentiate between the effects of vertical and horizontal harmony– especially because in this work I am not dealing with single isolated chords. But, in the end, the reason for the effect to arise isn't very important, at least at this stage of

my analyses. What is meaningful is whether also a single chord and its vertical harmony seem to invoke an affective reaction in me, no matter whether the reason lies within the chord itself, in its relation to other chords–or both.

In the light of the previous discussion, it seems justifiable to continue dividing harmonies into vertical and horizontal dimensions, even though they are quite evidently closely related. Most of all, the reason for this is practical: it makes dealing with them simpler and more straightforward at the later stages of the analysis. With respect to the related phenomena of harmony and melody, I will need to take the both harmonic dimensions into account in order to be able to categorise my experience in a more nuanced manner. Thus, it is useful to be able to separate harmony in two different components. Treating harmony as a monolithic phenomenon would probably make the already challenging endeavour even harder and more confusing. Also, some significant affective factors could be left out. Because vertical harmony is perceived very fast, at least faster than within the meso timescale, the related sonic object will be pointed out in the next subchapter that deals with events occurring closer to the micro timescale. In fact, vertical harmony is most likely experienced clearly at the micro timescale, but because of its putative interaction with horizontal harmony, it will be regarded as an inter-timescale phenomenon.

3.3. In between the timescales: harmony, tonality, pitch, metre and rhythm

The reason for initially establishing the object no. 6 (the Em chord) concerned horizontal harmony, therefore, perceived tension between different scale degrees/harmonies. Next, I will discuss how I experience the vertical dimension–the perceived tension within the chord. As noted earlier, the chord sounds wistful, maybe even a little sad. Also, there is something familiar and simple in it. And, it feels calm– quite pleasant, actually. Maybe even the word safe could be used to describe my experience. It doesn't surprise, it's predictable. Predictability goes with the other chords of the excerpt, too, even though they are major forms. Therefore, it is no wonder that the feelings they invoke in me include joy, confidence, hope and brightness–all qualities typically associated with major harmonies. On the whole, the major chords have the sense of energy and activity. Due to their unique experiential content, I will choose the first one of them, the G major chord, as the sonic object no. 7. I could have

chosen the D major as well, but one example will suffice to represent the effect of major harmony.

The transition from the tonic of E minor to the mediant harmony of G major is experientially particularly significant. It clearly evokes a sensation of movement; something can be experienced to change very perceptibly and quickly. It makes me feel as if the habitual, thus normal, state of somewhat indecisive melancholy and longing suddenly changes into something more confident, hopeful and energetic. Actually, the vocals emphasize this feeling. The phrase "Shooting star six times" clearly refers to dreaming and hoping, making a wish–and even multiple times to underline the seriousness of the matter. This transforms to determination, the revelation of what is being wished or asked for, or probably more accurately, desired: "I wanna hold you tight". Most likely the object of the desire is one particular other person, in my heterosexual imagery a person of opposite sex. In any case, the protagonist of the song becomes empowered, or, at least convinced of what he/she wants–and courageous enough to let this out. Thus, the spirits are up, the timid hope turns into a fantasy of the dream to come true.

According to my experience of the target excerpt, the lyrics of the vocals are not necessary for the above-described feelings or associations to arise. The music alone, including the sung melody and tone of the singer's voice, suffices to communicate an atmosphere compatible with the lyrics–given that it is really possible for me to imagine the vocals without even subconsciously associating with its text. Naturally, the sung words specify the experiential context, but I don't consider this essential. The power of the music can be linked to two types of events that both convey the feeling of sudden and notable change that could be described as a leap: the tonal shift from E minor to G major between measures 1 and 2, and the simultaneous vocal pitch shift from E to G. Also, the synthesizer riff (picture 1, staff 2) follows this progression by changing from the B-based[3] motive of measure 1 to the D-based motive at the start of measure 2. In addition, there are experientially significant leaps within a harmony, for example, from B to E at the beginning of the excerpt ("Shoo–ting star"), and from G to A in measure 2 ("I wan–na"). And, again, this is reflected in the synthesizer riff. Downward

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[3] That is, H-based in e.g., Finland.

progressions can be effective as well. In my experience, the synthesizer riff leaping back "down" from F# to A at the end of measures 2 and 4 is particularly outstanding. And, even if not meeting the criteria of a leap, the melodic descent from A all the way to D ("-na–hold–you–tight") at the end of measure 2 is effective, too.

The above descriptions show how the sensation of leap can emerge from the change in tonality and/or in pitch. As an example of a particularly strong leap in pitch, I establish the sonic object no. 8 for the start of the whole excerpt. Thus, the chorus section of the song begins with the same pitch leap (from B to E, "Shoo–ting star") of both the sung melody and the accompanying synthesizer riff. This doubled event repeats in measure 3. Leaps in tonality and pitch occur often simultaneously, too, like in the transition between measures 1 and 2. For this I establish the sonic object no. 9, whose category of movement is leap. The shift from E minor to G major feels like a change of state, from timid uncertainty and lack of energy to energetic, positive confidence. In terms of pitch shift, the change from E to G in the vocal melody and from B to D in the synthesizer riff is an ascent, the pitch rises. It feels as if something is going up. The pitch shift alone would probably be enough for the sensation of rise to emerge, but in the tonal context of the target excerpt tonality is most certainly at play in the case of pitch, too. The change of pitch (melody) and chord (harmony) both reflect the upward movement in the E minor scale exemplifying the interplay of horizontal and vertical harmony.

It should be noted that the volume of the singing voice doesn't really follow the leap between measures 1 and 2. Often in music, a change in one component of musical texture is reflected in one or more of the others. If one component goes "up" or "down", the others will, too. Non-parallel movement could be experienced as conflicting by the listener–as a dissonance. Naturally, breaking of this convention of parallelism could be used as a compositional device. However, this kind of unconventionality isn't typical of italo disco. Therefore, it would be exaggerated to suggest that this device is nevertheless used in the case of the target excerpt. Non-parallel movement doesn't really exist in it, or at least not regarding volume. Instead, it could be said that there is lack of expression. This combined with the earlier described experiential content creates a sense of ambivalence. Emotion is expressed, but at the same time is not. This complies with the finding I made in my bachelor's thesis (Mertsalo 2013, see chapter

1.3.) on the ambivalence of italo disco, which was suspected to result, for example, from the combination of cheerful lyrics and wistful atmosphere.

To continue with leaps, the synthesizer motives/riffs (picture 1, staff 2) feel generally "jumpy". Besides the pitch changes, the reason for the feeling to arise is clearly the rhythm. The motives comprise many short notes. I will discuss the impact of rhythm, tempo and event density in more detail shortly. At this point I'll establish another object regarding leap. The object no. 10 is the fast, downward shift from F# to A at the end of measures 2 and 4. It accents the descending vocal melody and the related, salient lyrical content ("hold you tight") conspicuously. Thus, leaps can be expressive regardless of their direction.

To conclude the theme of tonal harmony and pitch height, there is still one quality of the texture that could be said to represent the device of non-parallelism. With this I refer to the already mentioned role of the faint synthesizer pad chords/dyads (picture 1, staff 3). There isn't much happening with them, only two harmonies (Em and D) alternating. Still, they stand out (even if subtly due to the low sound volume), and maybe just because they are in contrast with the rest of the texture. Especially the connection of measures 1 to 2 and also the rest of measure 2 are experientially significant. I consider the reason for this to be that the same pad chord or dyad of measure 1 (Em, the tonic) is repeated at the start of the next measure–it doesn't join the "leap" of the rest of the tonal textural elements. This creates a tension reminiscent of a pedal point. The tension resolves at the end of the measure when the pad chord/dyad changes to D, this time joining the overall downward motion and associated highlighting leap. Despite the intriguing yet somewhat concealed effect, I won't establish a sonic object of its own for this sound event, whose role I consider mainly enhancing and colouring.

The thus far discussed experiential wholes are not uniform in terms of their placement on the continuum of timescales. The first sonic objects (1–5) belong more clearly to the meso timescale, thus, the approximately 0.5–5 second range of the theoretical sonic object. However, the durations of the objects no. 6–10 are clearly shorter than 0.5 seconds, that is, in terms of how long it takes to perceive the tonal content of the vertical harmonies, not for how long the chords/dyads sound. Therefore, the harmonies seem to belong to the micro timescale, but the case with the leaps isn't similarly clear.

Probably it could be said they are located somewhere in between the two timescales–due to the nature of horizontal harmony, their experiential qualities unfold slower.

Next, the effect of metre, rhythm and tempo will be addressed in closer detail, after which the rest of the subchapter will be dedicated to timbre and, thus, the higher event densities of micro timescale. At the start of the analysis, sonic objects were at least in the context of the entire target excerpt delineated in terms of higher scale structural features, such as whole measures. The criteria for the segmentation were based on perceived metre, rhythm, tonal qualities and pitch height. This division will be preserved also in the following, but more focus will be laid on the finer details of the metrical and rhythmical content within the measures. In addition to my personal feelings and perceptions, I will draw on the ideas of Mark Butler (2006) regarding the rhythm and metre of electronic dance music (EDM), and particularly the genres of techno and house. As noted in chapter 1, italo disco played a role in the emergence of these two influential genres, and, thus, largely also the domain of EDM as we know it today.

Rhythm and metre are important experiential ingredients of italo disco, but probably not to the same extent as in the case of techno and house–techno in particular. Actually, even though rhythm and metre are closely related concepts for dealing with musically organised time, it is necessary to tell the difference between the two. Butler considers metre as a subcategory of rhythm. It is related to the measurement of time. In music theory traditionally addressing classical music, metre is typically understood as an unchanging background against which the rhythm fluctuates as a foreground phenomenon. According to this notion, it is possible to differentiate the two within the texture. However, Butler notes that in EDM, and especially techno, it is difficult to separate rhythm and metre this way, because the music is comprised mainly–if not almost entirely–of percussive elements. (Butler 2006: 78, 99.)

In my experience, italo disco is typically percussive, even though there is a lot of variation. Especially many instrumental only songs are often more reminiscent of techno with highly synthetic sounding texture containing also other percussive sounds than what are normally associated with drums and related rhythmic textural components. "Shooting Star (Six Times)" has instrumental only parts that fit this description fairly well, however, the target excerpt containing vocals and generally

quite conventional melody and harmony resembles more traditional pop song, too. Like techno and house, great part of the EDM more generally, and also many other types of popular music, italo disco belongs to the so-called "four-on-the-floor" genres in terms of the rhythmic characteristics of central instrumental patterns, thus, how the rhythmic events/attacks divide over the music. The term four-on-the-floor originates from the way a rock drummer plays a pattern of four quarter-notes by depressing the foot pedal of the bass/kick drum four times per measure. In addition, the instrumental patterns of EDM are almost always presented as cycles. And, in the case of four-on-the-floor, the duration of a cycle if practically always duple. This means that the rhythms occur in groups of two or its multiples (four, eight, sixteen etc.). (Butler 2006: 78, 80–81.)

According to Butler, at least three approaches become evident when rhythmic spans are divided into actual rhythmic patterns. He terms them "even", "diatonic" and "syncopated" according to how evenly the attacks are distributed throughout the measure. In even rhythms such as four-on-the-floor this distribution is maximally even/symmetrical, and asymmetry increases from diatonic to syncopated rhythms. The evenness of the basic rhythm can be easily heard when listening to the target excerpt– and also seen from the notation of picture 1, as well as from the constantly recurring, column-like "spikes" in the frequency distribution of the excerpt (picture 2). The way that the base drum and the snare drum alternate attacking either every first and third beat of the measure (bass) or the beats two and four (snare) corresponds perfectly with Butler's description of the most common even rhythms. (Butler 2006: 80–82.) However, regarding picture 2, only every fifth spike is related to the drum hits.

In his example on the division of the attacks, Butler (p. 82) additionally shows how each attack is positioned based on a sixteenth-note common pulse typical of EDM. I find this approach particularly useful in terms of my own analysis, because the target excerpt in fact contains quite clear "ticking" dividing into one sixteenth of the measure. Typically, in EDM this pulse is created using the percussion sound of closed hi-hat or similar. However, in the case of "Shooting Star (Six Times)", it is difficult to discern the source of this sound. It may be a synthesizer or drum machine sequence/part of its own, or it is caused by an echo of one of the most audible tracks. Nevertheless, the sound is there. In fact, its existence can be verified from the spectrogram presented in picture 2. Like in the case of the basic quarter note rhythm spikes mainly caused by

the drums, it is possible to see the similar, evenly distributed columns generated by the attacks of the 16th note pulse. Thus, the percussive character of the target excerpt becomes apparent visually, too. The ticking appears to play an important role by contributing to the feel and "groove" of the song. It creates a certain kind of energetic drive, a fast and dense pulse layer in addition to the less frequent events of the other layers of the rhythmic texture, such as the two drum sounds.

As discussed, EDM usually differs from e.g., classical music with respect to the role of rhythm and metre. In EDM they can't be easily separated. Butler notes that in EDM the music consist more clearly of different layers that in combination with the persistently repeating rhythmic patterns invite the listener to concentrate on the periodicities of individual layers, not so much on the relationship of these layers with a single underlying, metric structure (Butler 2006: 99). Although the target excerpt can probably be best situated somewhere between these two approaches to rhythm and metre–it is not exactly like techno nor is it "traditional" music–the layer-approach Butler is suggesting nevertheless seems applicable to the analysis of its rhythmic characteristics. As already proposed, the target excerpt really appears as containing different layers of rhythm and metre. I pointed out the pulse layer, the sixteenth-note tick. This comports well with the work of Harald Krebs (1999), upon which Butler draws while discussing the phenomenon of layering. Krebs, too, builds on the ideas of earlier theorists with his model according to which metre can be understood as the union of multiple different layers of motion. At least three metrical layers, the pulse layer and two or more interpretative layers, are usually present. The pulse layer consists of the most quickly moving, pervasive series of pulses. The interpretative layers move slower and organise the pulses of the pulse layer into larger units, allowing "interpretation" of the raw data of the faster moving layer. (Krebs 1999: 22–23; Butler 2006: 106.)

In the case of the target excerpt, the pulse layer of the sixteenth-note tick forms a kind of background "grid" against which the slower elements/pulses can be interpreted, thus, experienced. I assume the word grid can be used in the context of my research at hand, even though Butler's interpretation advocates a richer account of the metrical division of EDM. EDM is usually as regular as a grid, which is understandable given its production method: in sequencing notes are inserted in a grid-like structure. But, as the existence of different simultaneous pulses demonstrates, there's more to it that

makes this music interesting. In any case, italo disco is usually straightforward music–in terms of meter, too. In the 4/4 meter of the target excerpt, the drums (bass and snare) constitute an interpretative layer of quarter-note motion. Other parts of the texture than the typical drum or drum/percussion-like sounds participate in the layering, too. It is possible to interpret the synthesizer pad-like sound (picture 1, staff 3) to form an even slower interpretative layer of half-note motion. In addition, the vocal melody and particularly the synthesizer motif (staff 2) can be experienced to contribute in the formation of the layers. However, their role may be more of supporting than creative of a distinct layer of their own. For example, the synthesizer motif seems to align effectively with the sixteenth-note pulse layer enhancing the pulsating feel.

Because the pulse of each of the slower interpretative layers coincides with the pulse of every faster-moving layer, the layers of the target excerpt are aligned. Thus, the bass & snare drum pulses evenly comprise four sixteenth-note pulses, and the slowest synthesizer pad layer comprises two bass/snare pulses and eight sixteenth-note pulses. Krebs calls this kind of alignment of interpretative layers "metrical consonance". If the layers didn't align, thus, the pulses didn't "sound together" (hence the term consonance), the term "metrical dissonance" could be used. (Krebs 1999: 29–30.) Apparently, the target excerpt and thus the whole song is clearly consonant also in respect of rhythm and metre.

Next, I will establish experiential wholes based on the previous discussion, which has implications in terms of both meso- and micro timescale. With respect to meso timescale, it seems that the layers and the associated pulses strengthen the overall experiential structure of the target excerpt–and therefore also the already established sonic objects no. 1–4 that correspond to the excerpt's division into measures. The layers do not only enhance this experience, combined they participate in its emergence by highlighting certain points, such as measure boundaries. Naturally, the initial decision on the metric structure of the musical piece is made when the composer decides on its time signature. Due to the equivalence with the existing sonic objects, the strengthening function of the layering doesn't give rise to introduce new sonic objects at the meso level. Nevertheless, it may be referred to at the later stages of the analysis.

However, new sonic objects can be established based on the pulsating layers closer to micro timescale, thus, around 0.5–1.5 second duration range. It would be possible to point out multiple objects, but I will cover only the two that I find the most effective. The first one of them (object no. 11) is the recurring duple of the alternating bass and snare drum hits (picture 1, staffs 5 & 6) that creates the steady quarter note "drive" for the whole song. It forms the backbone of the 4/4-time signature and is highly common in electronic dance music. It really feels like there is something foundational in it, on which the rest of the texture builds. Also, it creates a strong feel of motion, like of steady gait or run. Furthermore, the tempo of the excerpt, approximately 125 beats, thus, bass or snare drum hits/quarter notes per minute, corresponds quite well to the human heart rate/pulse while running at a moderate speed or otherwise engaging in an activity or circumstance that increases heart rate. Also, I assume it's not too far-fetched to think that the duple of one bass drum and one snare drum hit recurring at a rate of approximately 62.5 repetitions per minute could be associated with the measurement of time, therefore, with how a clock ticks dividing minute into 60 seconds. Consequently, there might be both biological and cultural reasons, or cues, for the effect of the foundational pulse. There is something familiar in it that plays a role in how the music is experienced.

As a matter of fact, the energetic tempo of 125 BPM and the related, probably usually nonconscious, associations could be thought of as an experiential entity of their own. The associations and thus the arising affects are different than in the case of significantly slower or faster tempo. However, because tempo can't exist without something that can be experienced as conveying the sensation, in this case the just established foundational pulse, I will not find a new sonic object for it. The discussed qualities are considered belonging to the object no. 11.

If the first sonic object having to do with the finer rhythmic and metric details could be linked to even motion such as gait, the second one can be related to progression, too–but now in a galloping style. If the target excerpt is listened to attentively, it is possible to perceive a rhythm that, at least to me, has a galloping feel. It seems that the sensation is a compound effect of several fairly high-pitched sounding textural components and their pulses. Most likely the central components involved are the drums (thus, bass and snare) and the 16th note pulse. Also, the synthesizer riff/motif appears to enhance the feel. I ascribe the source of the galloping pulse to the way that

the both drum hits accentuate every fourth hit of the high-pitched 16th note pulse, dividing it into experiential "chunks" of one eighth note and two 16th notes (picture 1, staff 8). Therefore, one measure includes four of these. I establish sonic object no. 12 based on this chunk. The perceived strength of the rhythm fluctuates, but it can be heard basically throughout the excerpt–even though just barely in the last measure. This gives rise to think that the vocals may affect the formation of the rhythm (there are no vocals in measure 4).

For the most authentic impression of galloping to emerge, the object no. 12 needs to repeat several times. Still, in my experience, only one occurrence suffices to communicate the gallop rhythm and give rise to associations typically related to it. At least it clearly is the smallest single unit capable of communicating what is needed for the sensation to emerge. The strongest cue for the feeling is most likely the sound and the look of a galloping horse or some other animal able to move in the similar manner. The image is strongly embedded in our culture. For example, for a long time it has been used as a musical topic to represent hunt (Robinson & Hatten 2012: 80). Consequently, the rhythm is easily associated with decisive, powerful progression. In addition, adjectives such as determined and relentless, even fierce, come to mind effortlessly. The rhythm progresses like a train–the modern-day equivalent to a horse. In addition to these characterisations, I experience the gallop as energetic and exhilarating. Maybe the experience really involves something that could be felt in association with hunting, or even "riding into battle": expectation, excitement, maybe even sense of valour, honour and pride. And, as a result, inevitably a little bit menace and unrest. Thus, gallop rhythm possesses true potential for indulging in fantasy. Maybe for this reason it is quite common in italo disco even more generally, and hence was chosen in my bachelor's thesis (Mertsalo 2013) as one of its typical musical genre characteristics.

3.4. The micro timescale: sound spectra and timbre

The thus far conducted analysis concerned various textural components that participate in the emergence of what can be called the "global sound", or polyphonic timbre, of the target excerpt, the overall timbre mixture of its musical signal (see Aucouturier 2006: 1; Alluri & Toiviainen 2010: 224). This is believed to play an important role for

example in the fast recognition of a musical genre, which for salient stylistic features has been found out to sometimes take place as promptly as in 250 milliseconds, sometimes even in 125 ms (Godøy 2010a: 57; Gjerdingen & Perrott 2008: 97–98; Mace et al. 2012: 112). For example, the massive acoustic energy in extreme low frequencies found in rap and later hip-hop can help to distinguish it very quickly from a genre such as country music (Gjerdingen & Perrott 2008: 98). This role of polyphonic timbre seems to be in agreement with my own impression about the significance of the overall sound of italo disco. There's something appealing and recognisable in it.
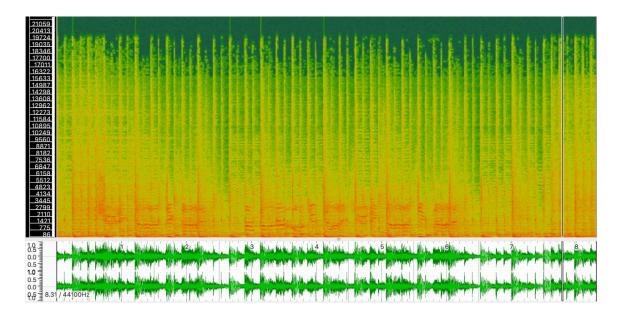
However, it isn't clear how the experience of polyphonic timbre is formed. On a first thought basis, it is easy to consider it just a composite of the different individual timbres of the musical work, for example, the timbres of different musical instruments. But we are dealing with a more complex phenomenon. It is quite evident that also other factors than just the individual tone colours contribute to the experience. I have tried to address these factors in the preceding analyses, even though not focusing on the actual tone colours of the analysed targets. This will be conducted in this chapter. It seems clear that even as a part of polyphonic texture/timbre, an individual monophonic timbre/tone colour can have an effect of its own, too. In addition, it is easier to study a distinct timbre than to try to figure out what the ingredients of the experientially most effective qualities of the global sound are. Due to this, sonic objects will not be established from the polyphonic timbre. However, because of its apparent experiential significance, it will be nevertheless discussed in this and the second analysis chapter.

To me, the target excerpt, as well as the whole song, sounds quite bright. Thus, fairly high frequencies dominate the overall texture, even though bass drum compensates this feel to some extent. Actually, even the sound of the bass drum isn't very deep–it "kicks", but not hard. In my experience, this emphasis on treble is typical of italo disco, and also of some other similar genres of the 1980's era, such as Hi-NRG ("High Energy"), that in a similar fashion relies on lush percussions and upbeat tempo (Wikipedia 2020a). Evidently, the heavy use of the percussive sounds usually lacking the lower end of the frequency spectrum affects the perceived brightness of the texture. However, it should be noted that the characterisation doesn't apply to every italo disco song. Some of them have more lower end, and their tempo can be slower, too. Nevertheless, the emphasised higher end appears to be a noticeable factor

differentiating italo disco from many other (later) EDM genres, such as techno and house, and particularly hip-hop.

The general brightness of the sound appears affective to me. It feels vibrant and positive. Because sounds that are typically called bright are rich in components from the higher end of the frequency spectrum, I assume it would be possible to juxtapose the fast oscillations related to higher pitches and brighter tone colours with fast movement is music more generally. By this I mean that high frequencies experienced within the micro timescale (approx. 0–0.5 second duration range) could be experienced (albeit not necessarily consciously) similarly energetic as fast tempo and rapid melodic or rhythmic figures are perceived in the meso timescale (approx. 0.5–5 second duration range). In the both cases fast movement is the key–be it the fast oscillation at the very low structural level of pitch and timbre perception, or the fast succession of notes at the higher level of tempo, metre or rhythm perception.

Actually, as can be observed from the spectrogram of picture 2, the spectral content spreads fairly evenly across the spectrum all the way to the highest frequencies around 20 kHz, thus, close to the upper end of the hearing range. Even though the highest sound energies (the highest loudness, hence, the loudest sound) are at the lowest end of the spectrum and in the drum "spikes" (the darker colours: orange and darker yellow respectively), the different hues of yellow and light green filling most of the spectrum speak to the rich overtone/harmonic content of the middle and upper range. In fact, I find it probable that this richness in terms of spectral content can be experientially highly significant, there is something in the global sound of the target excerpt and the whole song that could be described as big, wide or dense, even abundant. However, at least in my experience, this abundance can't necessarily be perceived consciously, I assume we are dealing with a mostly non-conscious phenomenon. A spectrogram can help with exposing this kind of implicit experiential potential.

Picture 2. Spectrogram (upper pane) and waveform of the target excerpt of "Shooting Star (Six Times)".

In the following, I will deploy an approach in which the role of monophonic timbre is seen merely as supportive with respect to perceived motion. However, according to the motor-mimetic hypothesis advocated by theorists such as Cox (2011; 2017) and Wallmark (2014), perception of movement/action can be experienced also in respect of timbre alone, without connection to other textural components. This happens through a "bodily attitude" which in the case of timbre means that for us to perceive any particular timbral quality with an emotive effect, it has to be corporeally articulated, thus, the experience of timbre needs to be (nonconsciously) associated with bodily motion–both produced and sympathetically perceived by us. (Wallmark 2014: 24.) This coupling of acts and the related sounds is well aligned with the notions of musical gesture studies that emphasise the experienced humanity as the source and cause of the sound or other musical phenomenon.

Building on the work of other theorists and the evidence from the areas such as cognitive psychology, mirror neuron research and ecological acoustics, Wallmark suggests that timbre is, actually, a verb. Its perception is "action-oriented", thus, timbre can be understood as the acoustic byproduct of motor exertion. Therefore, we perceive timbre as implicative of bodily actions. Furthermore, timbre perception is often accompanied by subvocalization, which will be discussed in the next paragraphs. Wallmark affirms the account of Herbert Spencer (1882 [1857]) on the primacy of the voice in musical experience. If timbre is perceived through motor actions, then, in

practise, it is directly linked to what we can do with our voices. To produce the voice varying amounts of physical exertion is required. And, we associate certain exertion levels with certain degrees of bodily arousal and excitement that, in the course of evolution, have become coupled with certain affective situations where exertion has been needed to produce the voice (e.g. a warning call) or other related action (e.g. fleeing). (Wallmark 2014: 25–26, 42.)

In addressing the corporeal articulation of timbre, Wallmark draws on the mimetic hypothesis of Arnie Cox, and especially on the related phenomenon of subvocalization. It can be described as covert, conscious or nonconscious vocal imitation that is fundamental to the cognitive process of perceiving and comprehending music. Therefore, it is not something optional that we may choose to do on occasion. Furthermore, it should not be confused with even quiet overt vocalization. Subvocalization occurs internally, as if the voice is rehearsed inside the mind. It is a form of motor imagery in which the voice traces out pitches, rhythmic patterns, timbres, inflections and other qualities of musical sound. However, it seems that vocal-mimetic reactions to music (subvocalizations) don't directly induce affective responses, they are first subject to appraisal. The reactions are innate and direct, therefore, reflexive, but there are many factors that mediate the appraisal, the affect. These will be addressed during the establishment of the timbre-related sonic object. (Wallmark 2014: 37–43; Cox 2011, 2017: 30, 56.)

In light of the above, the state of arousal and the associated increased vocal tension requiring more effort thus affects also the degree of experienced brightness of the voice. More tension implies brighter tone colour. Interestingly–and very importantly–there is reason to believe that this vocal mimesis, thus, the embodied process of timbral affect, applies also to other musical timbres than those in vocal origin. Naturally, different musical instruments are the most typical sources of such tone colours. This association is often nonconscious, it reflects the suggested, embodied nature of timbre. Nina Eidsheim, too, extends the notion of corporeal timbre to instrumental sound. According to her, the deep experiences of instrumental timbres (e.g., intense emotions) are corporeal manifestations, or extensions, of the sound of the singing voice. (Wallmark 2014: 46, 53; Eidsheim 2008: 251–252.)

There are many expressive monophonic timbres in the target excerpt, but I find one of them particularly effective. For the remainder of this chapter, I will concentrate only on it. The timbre is used in the synthesizer motif that I have earlier referred to as especially catchy even to the point of defining the whole song (picture 1, staff 2). As noted, the characterisations include adjectives bright and echoing. The echo is mostly a rhythmic phenomenon, it doesn't affect the timbre otherwise than maybe by "softening" it a little. This impression–that I will not discuss further at least at the first level of isolated timbres–is probably caused by the slightly lower sound volume of the echoes. However, the perception of brightness is clearly timbre related. In addition to just sounding bright, the sound "ignites" quickly. Therefore, in the terminology for describing the sound shape (i.e., envelope/the ADSR-curve[4]), its attack is fast. The sound also ends sharply, and its duration is short, which in respect of the rest of the envelope parameters means that also the decay and release times are short. The sustain level seems to be fairly high and constant. The term refers to the strength of the sound after decay and before release.

The timbre of the motif resembles the pizzicato sound of various string instruments, such as violin or cello. This is often used to depict light, rapid and effortless movement like moving on tiptoe or the sound of raindrops. I can easily relate to these descriptions. In addition, the timbre feels vibrant and positive. However, despite this favourable appraisal, there is something peculiar in it; something words can't easily describe. Probably this certain sense of mysticality is due to the synthetic origin of the sound, its capacity of sounding human and alien at the same time.

The above characterisations can be ascribed to subvocalizations. In order to vocally produce bright, light and energetic timbres, high level of muscular tension is required. This kind of energy-intense exertion typically occurs in aroused, highly affective states. When I hear the timbre of the synthesizer motif, I (motor-)mimetically recognise the vocality in it. In addition, perceived brightness is typically linked to high pitch. This is the case also with our example. High pitch is caused by high frequency oscillation, thus, fast movement. Brightness, too, can be associated with high frequency energy.

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[4] The ADSR-acronym stands for: A (attack), D (decay), S (sustain), R (release). These parameters are used for describing how a sound changes over time.

Therefore, even though this extremely fast motion occurs mostly below conscious awareness, well within the micro timescale, it would probably not be too far-fetched to think that, through a mechanism such as subvocalization, we are dealing with a form of musical gestures. Thus, gestures that can be at least imagined generating very fast, energetic movement. Most likely this phenomenon is the same as what happens when the arm muscles are contracted to the point where the whole arm starts to shake making speedy "gestures". The only difference is that in the case of timbral gestures this tremble/oscillation is significantly faster.

It should be noted that in timbre and musical gesture studies, the spectral features that can be perceived extremely fast (approximately at the sub-50-ms timescale) and, because of their high frequency (approx. 20–20 000 Hz) are experienced as continuous, are typically referred to as stationary timbres (Godøy 2016: 166). However, in my understanding, this kind of immobility is experienced mostly consciously, it doesn't mean that experiential motion didn't exist below conscious awareness; for example, in the form of subvocalizations. In fact, probably just because of this the precise term is quasi-stationary timbre. Thus, the immobility is only virtual. Furthermore, to denote this kind of distinct and constant sound quality, the term "tone colour" is sometimes used interchangeably with timbre. I, too, have used the expression in this work–mainly in order to avoid repeating the same word. But, as for example Halmrast et al. note, tone colour is not a very suitable expression for describing a phenomenon that is about more than just a stationary hue. It is better to use the term timbre to denote the fluctuations and the overall evolution of features that in reality occur over the course of a sound. (ibid.; Halmrast et al. 2010: 183.)

It is probably even more justifiable to avoid talking about tone colour when the topic is the little slower unfolding sound shape/envelope. These perceptually salient changes in the sound are found above the duration threshold of approximately 50 ms, thus, below the 20 Hz rate (Godøy 2016: 166–167). The lower frequency means that we can more consciously differentiate the sound events from the sound itself, thus, to perceive the continuous evolutions in the quasi-stationary timbre. Next, based on the notions discussed above, potential experiential entities/sonic objects will be established for the timbre of the synthesizer motif. However, what are the qualities that distinguish these entities from their surroundings and other entities? Is it possible to treat timbre as a whole in the first place? I believe it is. Like the earlier sonic objects, also the timbral

objects can be suspected to be experientially founded on musical gestures. These can be pointed out at the level of both quasi-stationary timbre and shape of the sound.

Since it's practically impossible, or at least very difficult, to extract the audio content of the synthesizer motif alone (and e.g., analyse its spectrogram) from the target excerpt, thus, its polyphonic timbre, I will do it by listening to those points of the excerpt where there is as little any other simultaneously sounding timbral content as possible. Then, I try to focus only on the timbre of the synthesizer motif. I also contemplate the sound and its timbre in my mental imagery when the excerpt is not playing, when I "hear" the sound only in my mind. The notes during which the timbre is heard are short in duration, but sonic object(s) can still be found within them. I assume that, at least at the level of subvocalizations, sounds even this short could comprise more than one sonic object. However, with respect to the timbre at hand, I find it possible to point out only one object (no. 13) that recurs with each note of the motif; one note contains one (and the same) object. In terms of subvocalizations, the way it forms an entity can be ascribed to its capacity of communicating a sense of excitement, a charged experience. I can really feel, or at least imagine, the muscles involved in the production of my voice contract while contemplating the energetic sound. To some extent, this tension can be felt in the whole body. In my experience, during one note of the motif this imaginary contraction (and the possibly following release) that most likely has also physical consequences, occurs only once. Hence, one cycle of tension and release, one entity.

Arguments on behalf of the entity-likeness of the object no. 13 can be presented in respect of sound shape/envelope, too. For one thing, as sounds always, if follows the ADSR-curve. Therefore, it has a start, a middle and an end. This alone would probably suffice to make it a whole. However, the paradigm of musical gestures provides more conceptual tools for addressing the matter. As already discussed, it is based on the notion of bidirectionality between images of sound and action. Thus, to be able to create a mental image of a sound, one needs to imagine its production, or making some movement to it. These music-related actions can be classified according to their function into sound-producing and sound-accompanying. (Godøy 2010a: 55; Godøy et al. 2012: 353.) In the case of sonic object no. 13, the sound-producing aspect appears as more relevant.

In order to specify the sound producing musical gestures/actions that can be experienced as best fitted to produce the timbre used in the synthesizer motif, I will concentrate on the shape/envelope of the sound. According to Halmrast et al. (2010), the attack segment of the envelope (thus, the start of the sound) is particularly important for the timbre. As noted, the sound is short in duration, and it ignites and fades quickly. On the grounds of these characteristics, it seems that the sound and its timbre is a product of an abrupt, impulsive action. Rapid attack generally leads to sounds perceived as "percussive" or "plucked". As already remarked, the sound containing sonic object no. 13 has this kind of character. In musical gesture studies, it is a common practise to follow the suggestions of Pierre Schaeffer and associate perceptually essential timbral features with gestural metaphors. The related taxonomy according to which the continuous stream of sound can be cut into sonic objects on the grounds of their overall durational envelopes has three typological categories: those of impulsive, sustained and iterative sounds. (Halmrast et al. 2010: 190–194; Godøy 2006: 153; Chion 2009: 129.)

Based on the previous characterizations, it is evident that the object no. 13 belongs to the category of impulsive sounds. Due to its synthetic origin, the perception of humanity as its potential cause is diminished, but not disappeared altogether. It is still possible for me to imagine the sound and its source in connection with a discontinuous transfer of energy through a human action like hitting or plucking, and the following relaxation. I can also envision myself making subtle, disjointed dance moves and/or similarly delicate finger gesticulations to the sound. However, these moves and gestures mimic the rhythmic recurrence of the sound, one short sound alone isn't enough for these actions to emerge. Nevertheless, the shape of the sound can be said to afford its fast recursion and the associated movements that reflect its entity-like character. The sound and its timbre form a sound-action chunk in a manner that the ADSR-envelope represents the impulsive gesture at the level closer to the meso timescale, and the subvocalizations represent certain kinds of micro gestures clearly at the micro timescale.

Object no. 13 seems to support some of the other sonic objects of the target excerpt. Thus, it strengthens their entity-like character and the way they are perceived. For example, the object no. 12, thus, the galloping feel experienced in conjunction with the high-pitched 16th note pulse, aligns well with object no. 13 most likely because the

synthesizer motif itself seems to participate in the formation of the galloping rhythm. As already remarked when establishing the object no. 12, the motif at least enhances this feel. Furthermore, vibrant mental imagery can be associated with the galloping rhythm, too. However, the main reason for the compatibility of the timbre of the synthesizer motif with this sonic object is its sound shape, therefore, particularly the fast attack and generally short duration that afford its usage in the contexts of some other sonic objects.

4. CONCEPTUAL METAPHORS AND THEIR AFFECTIVE SOURCES

Sonic object no.	Source of perceived motion/tension	Metre	Rhythm	Tonal-ity	Pitch	Timbre
	Description of the object / its location in the excerpt					
1–4	The division into measures / the corresponding measures 1–4	X		X		
5	"Cycle" of horizontal harmony from tonic to tonic / measures 1–3			X	X	
6	Harmonic tension (horizontal and vertical) / the Em chord in measures 1 and 3			X	X	
7	The effect of major harmony / G chords of the excerpt			X	X	
8	The upward leap in pitch (from B to E) / measures 1 and 3				X	
9	The upward leap in pitch and harmony / the transition between measures 1 and 2			X	X	
10	The downward leap in pitch (from F# to A) / measures 2 and 4				X	
11	The recurring duple of the alternating bass and snare drum hits / the whole excerpt	X	X			
12	The galloping "chunks" of one eighth note and two 16th notes / the whole excerpt	X	X			(X)
13	The timbre of the synthesizer motif / the whole excerpt					X

Table 3. The sonic objects established in chapter 3. "X" is used to denote the source/textural component in terms of which motion or related tension may be perceived. "(X)" refers to the cases where the entity-forming role of the source is mostly supportive/enhancing. The table serves as an index of the central characteristics of the sonic objects in terms of their analyses conducted in this chapter.

In this chapter, (primary) conceptual metaphors and their constitutive image schemas will be pointed out for the just established sonic objects (table 3). Because particularly primary metaphors and image schemas are thought to be directly linked to concrete, physical sensations, I assume it is possible to associate them with the senses of motion I can experience in connection with the sonic objects. After all, our perception of movement is fundamental, most likely universal, and links us to our environment in a very direct and concrete way. Even though the effect of subjectivity can't be ruled out at any point of the present analyses, there is reason to believe that the phenomena presented in the previous analysis chapters, as well as the forthcoming inclusion of the primary metaphors, are not solely subjective endeavours. As I will show with the

references to earlier research, also other people have had similar experiences when listening to textural components reminiscent of my examples.

However, despite the putative universal character of the primary metaphors and image schemas, their possible expansions aren't necessarily universal at all. With these I refer to the complex metaphors and/or blends that may emerge from primary metaphors. Factors like life experiences, personality and culture affect how the individual further conceptualises the affects induced by the more concrete perceptions such as the senses of motion. These more personal, and, thus, more speculative effects will be discussed in the course of the following analyses, continuing in chapter 5.1.

4.1. The associated image schematic structures

Image schemas are prerequisites to conceptual metaphors. As basic structures of sensory-motor-affective experience, they as if "feed" the metaphoric conceptualisation process with the contours, the recurring patterns of how we as organisms interact with the environment. The reason for me to include image schemas into my analysis is to try to keep my chain of arguments intact, thus, the "chain" proposed by Lakoff and Johnson (e.g., 1999) in which abstract concepts become possible by conceptual metaphors that extend the body-based meaning, thus, the semantics and inference patterns of sensory-motor-affective experience, into abstract thought. (Johnson 2017: 127–128; Johnson 2007: 176.)

According to Johnson, in addition to the internal structure of image schemas, movements are defined by their own distinctive, dynamic qualities, too. This means, for example, that in addition to the SOURCE-PATH-GOAL structure of someone walking along a mountain path, the movement is also defined by its character, for instance, explosive, weak, halting, graceful or jerky. It is easy to associate these qualities also with musical gestures. Actually, it seems that all bodily movement is affected by four recurring qualitative dimensions: tension (the level of tension in the musculature required by effortful action), amplitude (the extent of the movement such as contractive or expansive), linearity (motion trajectories of objects, the path of motion) and projection (the way the projective quality of motion is applied in exerting

force, for example, when standing up from a sitting position either violently or carefully). (Johnson 2007: 20–21.)

While discussing image schemas in music, Cox (2017) adopts the viewpoint compatible with musical gesture studies: that musical sounds are sounds of performers' actions. Therefore, the related image schemas, or musical schemas as Cox calls them, become, in fact, action schemas. Furthermore, according to him, even better term for them would be the more generic exertion schema, because the word "action" may connote specific actions. Also, as just discussed, to produce any effortful action, muscular tension, thus, exertion, is required. And, very importantly in terms of my work, performing an actual physical action, for example, a leap, involves feelings of desire, planning, exertion, and some degree of satisfaction. According to conceptual metaphor theory, these feelings/affects (thus, of the source domain) can in a musical context (the target domain) motivate to conceptualise a musical event metaphorically as a leap. (Cox 2017: 64–66.) In addition, the concept of exertion schema is particularly suitable for me when dealing with the less apparent musical motion/action of timbre and vertical harmony.

Arguably the most central image schemas with respect to musical experience and also more generally are the kinesthetic schemas that either deal with our bodies themselves, or their (thus, our) orientation in the world. According to Janna Saslaw (1996), the first group includes schemas such as CONTAINER, CENTER-PERIPHERY, PART-WHOLE and FRONT-BACK[5]. The second group regarding our relationship to the world entails schemas like PATH, the already mentioned SOURCE-PATH-GOAL, LINK, FORCE and NEAR-FAR. (Saslaw 1996: 218.) These are prototypical image schemas from which more action/exertion-specific schemas derive. For example, leap is a special case of general path-like movement including starting and ending point, space in between, and trajectory. Consequently, the LEAP schema is a derivative of the PATH schema. (Cox 2017: 66, 64.)

In the following, I will scrutinise the sonic objects in numerical order in terms of their image schematic and metaphoric content. Because the first objects no. 1–5 represent

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[5] Like metaphors, also image schemas are usually denoted using capital letters.

larger entities comprising the shorter wholes of the rest of the objects, the order conveniently reflects the logic behind some of the most central image schemas: CONTAINER, SOURCE-PATH-GOAL and FORCE. These are essential both generally and with respect to musical experience (see e.g., Johnson 2007: 259). The CONTAINER schema has logical constraints built into its structure that affect the conceptualisations we impose upon space. This pervasive schema in terms of understanding daily experiences draws from the qualities of a physical container (such as our body) that can hold something inside it, or, more generally, has boundaries enabling the existence of the concepts of inside and outside in the first place. (Lakoff & Johnson 1999: 380; Saslaw 1996: 218.) From this logic follows that all things perceived as entities most likely have the image schematic structure of a container. This no doubt applies to sonic objects, too. In fact, Janna Saslaw talks about similar entities, tone objects, which are tones that are conceived as objects having corporeal attributes of real-world objects. By metaphorical extension, these can be, for example, in harmony or in conflict–causing us to have the corresponding emotional associations. (Saslaw 1996: 235.) In the case of the target excerpt, the whole excerpt forms a container that further consist of many other, "smaller" containers (e.g., measures, chords, motives, rhythms, notes) that are in constant interaction.

In this interplay between containers, the SOURCE-PATH-GOAL schema has the intermediary role. This is evident, because its grounding in bodily experience is based on our moving from a starting place through a sequence of contiguous locations to an ending point. The movement has direction, too, which is toward the destination. Furthermore, in addition to going along a path from start to finish, the basic logic of the schema includes that the further along the path you have proceeded, the more time has passed. From the logic described above it is easy to notice that the SOURCE-PATH-GOAL schema applies also to general understanding of complex events. Basically all such events have initial states, consecutive intermediate stages and final states. (Saslaw 1996: 220.)

According to Johnson, many of the basic prepositional compounds of our everyday language blend two or more image schemas. For example, the English word "into" blends the CONTAINER schema and the SOURCE-PATH-GOAL schema by superimposing them: "In" activates a CONTAINER schema profiling the interior, "to" activates a SOURCE-PATH-GOAL schema with the destination/endpoint, and the

destination maps onto the interior of the CONTAINER schema. This is why we are able to understand sentences like "The man walked into the house". Thus, the trajector (the man) moves from outside into the house (the container) and terminates the motion. (Johnson 2007: 139.) Musical equivalent for this kind of image schematic blend could be, for example, cadence. As Saslaw sees it, cadence is a "close" that closes or shuts a container forming the boundary separating one passage from another. Thus, "in" the container are the events that occur before the cadence, the "outside" is formed of the events after it. Furthermore, the cadence is the ending point of a source-path-goal "journey" that starts from the tonic and passes through a varying number of intermediate locations, that is to say, chords–finally ending back with the tonic. (Saslaw 1996: 222.)

If the CONTAINER schema defines the limits of an object and SOURCE-PATH-GOAL the trajectory of the movement within or between them, the role of the FORCE schema is to structure the dynamic qualities (such as the earlier mentioned graceful, explosive and jerky) and the related affects of the motion–or more generally, exertion. Also, given that the FORCE schema has been proposed to play an important role in timbre perception (Wallmark 2014), too, it can be suspected to turn out very useful analytical concept for my work. If theories about the motor-mimetic character of timbre perception and musical experience in general hold true, the overt or covert mental imagery concerning the making of musical sounds/events necessarily includes the affective component of using some amount of force (or, exertion) needed to produce the sonic event in question.

With respect to the sonic objects no. 1–5, particularly the SOURCE-PATH-GOAL schema can be suspected to structure the direct kinesthetic experience, because the objects seem to possess path-like characteristics, which emerge as an effect of metre, tonality and pitch (the sources of experienced motion/tension for the objects in question as demonstrated in chapter 3). Each one of these textural components plays a role in how the sonic objects, thus, the musical events, can be experienced to begin (the source), to follow a "path" (the path), and finally to reach an end (the goal). This aligns well with my earlier, general remark about the role of perceived start and end in experiencing movement, and in perceiving something as an entity in the first place. Also, the objects no. 1–5 last long enough to contain easily detectable contiguous locations, such as different chords. However, because these waypoints (that is, the

other, shorter sonic objects) will be discussed later individually, as far as possible, I will here consider them only as constituents of the larger entities, the objects no. 1–5. This is, of course, in line with the idea of experiential entities interacting at different textural levels and musical timescales.

Because the object no. 5 has the clearest path-like structure proceeding from tonic (thus, object no. 6) to tonic, it comports particularly well with the SOURCE-PATH-GOAL schema. This is why I scrutinise it first. The path-likeness manifests notably in my mental imagery, and also in my movement, for example, gesturing with arms and hands. They both have the sense of departing and coming back again, but with gestures this feeling is of course more palpable. It seems that the cyclical motion that I discussed earlier with respect to the whole measures arise also in the context of sonic object no. 5. However, the reason for this is most likely that, in fact, the object no. 5 contains three of these gestural cycles–one cycle per measure. Therefore, in terms of the SOURCE-PATH-GOAL schema, the objects no. 1–4 can be seen as segments (thus, passages) of the journey represented by the object no. 5.

Actually, Saslaw (1996: 222–223) refers to circular source-path-goal structure in terms of harmonic relationships, and specifically to the path from tonic to dominant and back. As suggested in chapter 3.2., in the context of the target excerpt, the subtonic of the D major chord ending measures 2 and 4 functions as the dominant. So, it appears that a larger body of evidence than that of my own exists on the experience of circular motion with respect to tonality. When it comes to the role of the CONTAINER schema in perceiving the object no. 5, it really seems that the schema is at work containing and confining the object, therefore, objectifying it. There is a sensation of unity involved. The motion occurs inside this container, but also between the other objects at the same textural level. However, it is possible that the activation of the SOURCE-PATH-GOAL schema alone, thus, the feeling of something starting and ending is enough for this gestalt-like feeling to arise. But, most likely the perception is a result of a superimposition similar to the previous linguistic example.

As with the components of musical texture and timbre in general, also the affect-inducing effect of the FORCE schema most likely plays out at different simultaneous levels. With respect to the higher level of the object no. 5, the feeling that some amount of force/exertion is needed, or not needed any longer, comes forth probably simply as

a result of the experience of the object/event to start and end. And, between the ends of the object, thus, during the journey, the transitions between the lower-level objects also require some use of real or imaginary force. Without going into details regarding the activation of the FORCE schema at the lower level (this I will address later), at the level of the object no. 5 (as well as the objects no. 1–4, too) the "ride" from start to finish via the lower level objects such as chords and individual notes feels quite jumpy, or jerky. The cause for this sensation to arise is particularly the dynamic, rhythmically dense synthesizer motif (picture 1, staff 2). The notes ignite promptly and in rapid succession, drawing varying melodic contour. The vocal melody, too, has distinct variation in terms of pitch. Furthermore, the quiet pad-like chords playing in the background (picture 1, staff 3) as if accentuate the tonal culmination points: the felt tensions associated with the harmonic progression. By creating contrast, their plainness and calm further emphasise the sense of exertion in respect of the synthesizer motif and the vocals, or, in fact, of all the other textural components.

Because the lower-level sonic objects no. 8–9 seem to contribute integrally to the motion experience I have ascribed to the upper-level objects, I will address them here together with the objects no. 1–5. The objects no. 8–9 represent leap-like motion/action caused by the vivid pitch changes in the vocal melody and the synthesizer motif, which is why the LEAP schema is clearly the most suitable image schema to structure their experiential makeup. And, as a special case of the PATH schema, it fits easily the chain of events structured by the SOURCE-PATH-GOAL schema–therefore, contributing to how the "legs" of the journey take their experiential form.

Especially with respect to changes in pitch, one more universal image schema needs to be addressed: the VERTICALITY (UP-DOWN) schema. The gravitational field of the Earth, the place where we have evolved, has constant effect on our existence for example by allowing actions like standing up, rising and falling, and, as a result, concepts such as up and down. (Johnson 2007: 136.) Due to the pervasive nature of gravity, we have started to use it as a conceptual reference point in a plethora of contexts. Music is one of these (see e.g., Cox 2017: 106). Thus, we (at least in the Western world) conceptualise pitch in terms of verticality. Because moving up and down requires varying amount of exertion in the real, physical world, there is a strong reason to believe that we associate the usage of force with musical rises and falls, too.

4.2. Music as landscape and moving force

After discussing some central image schemas affecting musical experience, the next stage of the analysis concerns their role as the source domains of conceptual metaphors. This means that conceptual metaphors will be demonstrated based on the immediacy of image schemas with the physical world. Many other schemas that can be proposed to play a role in music perception exist, too, but I find the ones introduced sufficiently encompassing, but still not too general for my analytical needs. That is, in my opinion, they possess enough explanatory power to permit also detailed, subjective interpretations. In addition, according to Johnson (2017: 129), through processes that enable schematic blends–such as the already introduced superimposition, combination, and additional elaboration or specification–complex image schemas are built from the more basic ones. Thus, deploying many basic schemas is not necessary to allow also more elaborate inference in terms of the related conceptual metaphors.

Focusing on conceptual metaphors after images schemas means shifting the focus from the pre-conceptual "basic level" of our motor schemas and our capacity of perceiving in the form of gestalts and images, thus, the level of bodily experience, to the level of abstract ideas, that is, concepts. (Lakoff & Johnson 1999, 77; Wallmark 2014, 18.) According to theorists like Cox (2017), this conceptualisation process is mimetic by its very nature, having affective consequences that can be analysed, for example, utilising his eight-part framework introduced in chapter 2.4. In the following, I will first refer to earlier research in order to point out conceptual metaphors based on the just presented image schemas, after which I will scrutinise my own experience, feelings and mental imagery in an attempt of connecting the metaphors with their mimetic-affective potential (as suggested by e.g., Cox) with respect to my own penchant for italo disco.

At least in their basic forms, image schemas and conceptual metaphors are similar, closely related cognitive structures–even their names may be identical. This, and also the identical practise of using capital letters to denote both of them, can cause confusion, what is good to keep in mind during what follows. However, before getting into detail about the relationship between the essential image schemas and conceptual metaphors, it is good to once more reflect on the nature of musical motion, because, except for the already discussed musical gestures, and that sound "travels" through the

air in the form of waves, music doesn't really move. Nevertheless, we still refer to various of its perceived qualities with concepts that are most typically used in association with actual, physical movement. For example, we talk about slow, fast, agitated or calm music–but, of course, metaphorically. (Godøy et al. 2016: 210.)

While addressing the question "What is musical motion?", Johnson and Larson (2003) ascribe our experience of musical motion to the way we conceptualise time. Like music, time is conceptualised metaphorically as movement: it "passes" through space. Research in cognitive linguistics has revealed two basic spatial metaphoric systems for time: the MOVING TIMES and MOVING OBSERVER metaphors. Actually, these are figure-ground reversals of one another, which means that they are reversed in terms of what is perceived as moving (the figure) relative to the ground. In the first metaphor, the times are moving relative to the stationary observer/the ground. In the latter, the time constitutes the landscape (the ground) through which the observer/figure moves. (Johnson & Larson 2003: 64–68; Lakoff & Johnson 1999: 141–149.)

Our experience of music as moving is conceptualised through the MOVING MUSIC metaphor in which the MOVING TIMES metaphor along with other metaphorical mappings are combined to reflect the temporal and tonal art of music (Johnson & Larson 2003: 69). If the idea behind MOVING MUSIC is assessed in the light of all that is discussed in this work until now, we can notice many similarities, which, of course, should be the case given that the initial presumptions on which my work is based hold true. For example, there are (sonic) objects that seem to move over (or exist in) time creating varying degrees of perceived tension. The MOVING MUSIC metaphor is compatible with this notion. Thus, there's something in common with our experience of a bit of music and seeing objects move in physical space. (ibid. 70.)

But what could be the musical equivalent to this physical space? Especially for the sonic objects no. 1–5 and 8–12 that most clearly represent horizontal, thus, temporal movement at the meso timescale, the most fitting spatial setting could be the "musical landscape". It is a metaphoric construct that adopts its structure from the SOURCE-PATH-GOAL image schema that, therefore, takes the source domain of the conceptual metaphor MUSICAL LANDSCAPE–the setting for my remaining analyses. Consequently, also the "stationary" musical events/phenomena such as timbres and vertical harmonies (chords) can be suspected to obtain their experiential qualities at

this kind of "imaginary scene". Therefore, as will be demonstrated, despite their perceived immobility, also the rest of the sonic objects of my work are most likely still perceived in terms of path-like motion.

Johnson and Larson (2003) refer to three important inferences that can be drawn about physical motion and that apply to musical motion, too. These are familiar already from earlier sections of my work: 1) there has to be an object that moves, 2) it needs to move along a path, 3) the movement will have a manner. However, the musical landscape can be observed from two perspectives: from that of the observer and that of the participant. The observer perspective is the one that is typically adopted, for example, in music analysis, and my current work so far makes no exception–at least when it comes to objectifying the target excerpt by, for example, creating a score of it–and, maybe also by extracting sonic objects out of it, even though sonic objects, on the other hand, are the products of participatory mimesis of certain kind. Therefore, taking the observer perspective means taking a kind of third-person view or a distant standpoint from which the path through a musical landscape defining a particular work can be observed. (Johnson & Larson 2003: 69–70, 72–73.)

It seems difficult to assess which one of the two perspectives is really taken in music perception regardless of whether music is being practised for analytical purposes or not. As noted, in my opinion, thus far in this work I have mostly observed the target excerpt from a third-person perspective, even though I have tried to rely on my own feelings and experiences as if being truly immersed in the music. However, because we are dealing with mental operations, it is most likely possible to switch back and forth between the perspectives as one pleases. Probably this can happen nonconsciously, too. And, the fact that it is possible to speak about the both perspectives with the same expressions having to do with the imaginary musical path-like journey doesn't make things easier. Johnson and Larson (2003) point out, that the allegedly "objective" observer perspective supplies the advantage of seeing the entire musical piece at once as an abstract object, making it particularly useful for an activity such as music analysis. As a result of this experience of seeing objects move, they argue that the MOVING MUSIC metaphor emerges primarily from taking the observer perspective, whereas we adopt the MUSICAL LANDSCAPE metaphor mainly in association with our experience of moving our bodies from one place to another. (Johnson & Larson 2003: 73.)

I find the notion according to which only the observer perspective allows viewing the abstract object of musical piece from afar in its entirety somewhat problematic, or insufficient. Maybe the idea is based only on the logic of music as a moving object. As Johnson and Larson (2003: 73) point out, it has an aura of permanence, which is something that from their point of view doesn't apply to the participant perspective. However, in my opinion, adopting the first-person perspective of the participant doesn't automatically mean that the path can't be "seen" ahead. If the participant is familiar with the musical piece and thus its landscape, then he/she more or less knows the terrain profile yet to be traversed. Furthermore, I suppose that the phenomenon of musical expectancy alone could enable seeing the path ahead also for a participant.

Despite the apparent difficulty of knowing the perspective that is being taken at any given time, my intention in the following is to travel the landscape of the target excerpt as a participant–whether on this can be really decided or not. At least it will be my method of inquiry, thus, theoretical tool. Because on a musical landscape musical events are locations (Johnson & Larson 2003: 72), my ride through the target excerpt takes places via its locations, the sonic objects. In practise this means that–unlike at some earlier stages of my work–I try to avoid observing them from afar. Instead, I try to really experience them, go through them–in a similar manner a path is traversed from the point of view of the traveller him-/herself. In fact, as I see it, compared to the observer perspective, adopting this approach is generally more in line with the idea of the sonic object, and even the whole paradigm of embodied cognition. According to Johnson & Larson, taking the participant perspective introduces strong notion of intentional action. For example, we may talk about music that "seeks", "pushes ahead" or "wants to resolve". (ibid. 73.)

In addition, it seems to me that the concept of taking the first-person view[6] is particularly compatible with my earlier analyses in this work. The view as if explains my findings and claims better than the more "objective" observer perspective. Probably the reason for this lies in the concept of mimesis, in its essence of being directed to self–to how it would feel to engage in an action. And, mimetic participation

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[6] Or, the quasi-first-person view, as Cox (2017: 181) calls the second-person position of a listener participating mimetically.

is the linchpin theme in Arnie Cox's (2017) framework of the eight avenues of musical affect. Consequently, mimesis will play an important role also in what follows. Starting from the "surface" of the higher-level sonic objects and the overall feeling, I will dive deeper into the fabric of the target excerpt suggesting some central conceptual metaphors and their mimetic consequences in terms of my affective reactions to "Shooting Star (Six Times)". Therefore, I will not only point out the metaphors and affects, but also discuss their more detailed content with respect to my mental imagery, such as fantasies. I will also consider the reasons to my penchant for music composed of musical equivalents of such conceptual metaphors.

Furthermore, even though I will start the next analysis from the sonic objects no. 1–5, from now on, I will not adhere to their numerical order or timescale as strictly as in the previous analyses. This is because I don't want to unnecessarily restrict my experiential interpretation, thus, force it into the mould of individual sonic objects whenever there is reason (or feeling) to believe that a mimetic sensation can't be naturally ascribed to only one sonic object. I have already addressed the difficulty of ascribing musical experience to individual textural levels or components earlier in this work. Therefore, it is good to keep in mind that there may have been some degree of artificiality involved in the extraction of the sonic objects in chapter 3. That is to say, the experience in question may have been the result of several simultaneous musical events. Accordingly, I will next assess the metaphoric content of the sonic objects no. 1–5 mainly in terms of their general impression and the "global sound", the polyphonic timbre. However, it will be still difficult to avoid referring to the constituents of the overall feeling, the lower-level sonic objects. Therefore, for the rest of the analysis, I will take them as the starting point–in no particular order. This means that from now on I give up the strict division into higher- and lower-level objects. I will take more holistic approach penetrating the textural levels and timescales, in which the sonic objects will be analysed in terms of these three general qualities.

First, there is a sense of ambience present all the time, the texture could be described as "airy". One important reason for this is probably the way echo and reverb effects have been utilised in the mix. From the point of view of the mimetic participant (thus, me) travelling through the imaginary scene structured by the MUSICAL LANDSCAPE metaphor, echoes and/or reverbs in the music remind of the same phenomena in the real, physical life. For example, they become associated with the

ambience of the nature, a nice mountain setting with a great view, or basically any physical location giving rise to the ambience effect. In any case, at least to my conscious self, echoes and reverbs bring to mind a wide, open space. And, it would probably not be too far-fetched to think that one could further associate such an environment with freedom, not to be restricted in any way.

On the grounds of the inference in the previous paragraph, it becomes evident that mimetic participation and association go hand in hand. In fact, these both belong to Cox's (2017) eight avenues of musical affect, that, according to him, despite capable of standing on their own, still inform each other to varying degrees. However, Cox wants to emphasize the informative capacity of the mimetic dimension in particular. This is why also I have chosen this avenue as my point of departure. Generally, and in line with the approach I have adopted in my work, Cox notes that higher-level interpretative associations can even make us feel that they are not associations at all, but in fact (direct) expression of emotion. Nevertheless, they are most likely still motivated and grounded partly by the low-level processes that, through mimetic participation, make the engaged listeners feel the same feelings as when really making the sounds and performing the congruent actions. It is precisely these low-level processes that I have thus far described in my work. (Cox 2017: 180, 191–192.)

Coming back to objects no. 1–5, what other associations could arise at their "higher" experiential level? Before getting into that, it is in place to remark that the higher and lower experiential/timescale levels of the sonic objects should not be confused with the higher- and low-level processes just discussed, which operate at all timescales and thus affect all the sonic objects. Because these processes emerge in close contact with the physical world and its characteristics, they are likely to employ image schemas such as the ones introduced in the previous chapter, or similar cognitive structures. Particularly the FORCE schema will be given special attention, because–as already noted in connection with image schemas–we associate the use of force with perceived motion. Johnson & Larson (2003: 74) make this same remark concerning the MOVING MUSIC and MUSICAL LANDSCAPE metaphors: the motions conceptualised by them are shaped by forces influenced by physical "forces" such as gravity, inertia and magnetism. In practise, this means that the source domains of these metaphors would need to comprise image schematic material taking some

form/instance of the FORCE schema, for example, in terms of gravity, the VERTICALITY schema.

Based on the previous discussion, it seems evident that these kinds of "musical forces" can be a rich source of associations. Johnson & Larson ascribe their effect to the MUSIC AS MOVING FORCE metaphor, that, in fact, might be treated as a subset, or submapping, of the MUSICAL LANDSCAPE metaphor. That is to say, MUSICAL LANDSCAPE alone doesn't explicitly focus on the cause of the motion. The movement may be caused by myself; I am purposefully moving through the landscape, or, producing the second metaphoric scenario, the forces beyond my control move me. Therefore, either I move, or I'm moved. However, even though the MUSIC AS MOVING FORCE metaphor seems more compatible with the latter scenario, it can be applied also to the former. Forces are present regardless. In both scenarios there is an agent that travels the musical landscape, and to which intentions and purposes can be attributed. The attributions are directed to the music itself, too. Thus, we experience and understand it as having purposes, which is reflected in the way we talk about it (e.g., music "is going somewhere", or it "is trying to resolve"). (Johnson & Larson 2003: 75–77.)

Similarly to the difficulty of knowing which perspective, the participant or the observer, is taken to the musical landscape, it is hard to tell the difference between whether one participates in the music as "an actor" or as the one who merely experiences. As noted earlier, I intend to adopt the metaphoric scenario of the actor. Actually, and well in line with the mimetic hypothesis, even when just listening to or imagining music, the actor can also take the role of the performer. Thus, the one who moves through the landscape becomes, in fact, the performer that creates the musical path as she moves. This phenomenon can be referred to utilising the basic metonymy PERFORMER IS THE MUSIC PERFORMED. (Johnson & Larson 2003: 76.) Metonymy is a metaphoric figure of speech in which the name of one thing is replaced with the name of the other the one can be associated with (Merriam-Webster 2020). In the more metaphoric terms, metonymy refers to accessing a larger whole through one of its parts in a process of intra-domain mapping (Zbikowski 2018: 4; Kövecses & Radden 1998). In any case, it shouldn't make much difference which scenario I employ at a certain stage of my analysis. The effects of the experiential forces can be expected

to align all the same. However, the scenario can affect the language I use to describe the experiences, from which it can be recognised.

In my experience, the affect related to the airy general feeling of the target excerpt has positive valence. Thus, it feels positive, good. In the following, the approach of Cox (2017) will be adopted regarding the scope of affect, therefore, what is counted as belonging to its domain. Cox takes affect broadly to include everything one might feel when performing music or responding to musical stimuli: feelings, emotions, moods, urges and desires, but also sensory experiences such as feelings of exertions, balance, warmth and alertness that do not account for any particular emotion. However, these are still integral to what kinds of feelings various experiences evoke. (Cox 2017: 177.) I have already discussed exertions with regard to their affective potential.

In affect theory, arousal and valence are two central concepts. Regarding emotional stimuli, arousal refers to the associated feelings of activation and valence to the perceived pleasantness or unpleasantness. Cespedes-Guevara & Eerola (2018) connect variations in these two central affective dimensions with fluctuations in so-called core affect, which can be described as an underlying affective tone. Their constructionist account fits well the embodied/mimetic approach I am advocating in this work. It states that we perceive a piece of music as expressive of emotions as if the emotions were "within" the sounds of the music. This is based on our ability of detecting the variations of arousal and valence that the sounds specify on the grounds of contextual, situational and personal cues. (Cespedes-Guevara & Eerola 2018: 13, 3.) As I see it, the sonic objects I have pointed out along with the associated image schemas and conceptual metaphors can be at least one important source of these cues. Thus, my work is very much about them. However, despite the importance of arousal and valence, I will address them only to a limited extent. This is because the general feelings and their proposed components, the sonic objects and the corresponding conceptual metaphors, quite clearly arouse me, and I more or less perceive them as positively valenced. After all, where are dealing with music I like. Therefore, scrutinising for example the levels of these affective dimensions in terms of the components would most likely not add enough value to my work.

4.3. The "airy" feeling

Next, I'm going to assess which particular image schemas and conceptual metaphors would be best suited for affective cues to the "airiness" I experience in respect of the target excerpt. As noted earlier, I can associate the related echoes and reverbs with, for example, a mountain setting. However, before starting to point out potential mimetic factors for the experience, it is in place to recall that Cox's eight avenues of musical affect have also nonmimetic components, which run in parallel with the mimetic contributors. Thus, in addition to the potential mimetic invitation that is typically subjective and vicarious by nature, affects can be also ascribed to causes that can be experienced more objectively, more directly. (Cox 2017: 198, 202.) Consequently, this can be suspected to apply also to the affects invoked by the airy feeling. It is likely that the echoes and reverbs of the target excerpt can be directly and overtly associated with their "real", natural counterparts. They just sound the same. Therefore, in this sense, mimetic invitation of any kind isn't necessarily needed to invoke the affect(s). For example, the nonmimetic aspects of the avenues of Associations (Table 2, avenue no. 6) and Acoustic impact (avenue no. 4) alone would suffice to make me feel something reminiscent of freedom.

However, I find it probable that my airy experience is affected also by the mimetic aspects. Therefore, it can be associated with underlying image schemas and conceptual metaphors. And, because the topic of my work and, accordingly, the previous analyses concern the mimetic experience of movement in particular, I will from now on address that aspect only. In my experience, among the perceived qualities that can be suspected to contribute to the airy feeling reminiscent of freedom by way of mimetic processes are, at least, the echoes and reverbs, and the "leaps" found, for example, in the synthesizer motif. Also the bright global sound/polyphonic timbre of the whole target excerpt and the synthesizer motif in particular contribute to the feeling of airiness. However, the timbre-related sensations will be addressed in the next subchapter. Like in the case of the nonmimetic effect of overt resemblance, I base the "mimetic logic" on how it would feel to exist and act in a wide, open environment–or landscape. In an evolutionary sense, putting oneself on such a scene would probably mean being alert and generally ready to engage in various exertive actions–be this due to potential danger or, for example, the contours of the terrain. And, as discussed in chapter 3.4. concerning the perception of bright timbre in the light of the so-called vocal-mimetic

hypothesis, timbre experienced as bright can really be associated with arousing situations where force needs to be applied.

The preceding remarks make it easy to suppose that when trying to point out fitting conceptual metaphors and related affects for the three general feelings, at least the FORCE image schema or one of its derivatives will play a role. Thus, the schema maps onto the source domain of the conceptual metaphor linking the metaphor to the actual physical world. It should be noted here that I will mainly concentrate on pointing out "basic" metaphors that communicate affects that are easily identifiable with simple types of motion/exertion. Therefore, I will not aim at establishing complex metaphors that can be typically found in language and thought, and whose affective content is more difficult to define. My approach of not starting the analysis from language (thus, unlike in typical metaphor research) can be also understood in the light of my adoption of the so-called stronger claim by Johnson & Larson (2003: 78) addressed in chapter 2. It emphasises the role of conceptual metaphor not only in our linguistic discourse about music, but also in our very experience of musical meaning. (Johnson & Larson 2003: 78.)

Primary metaphors having minimal structure are most likely the best candidates for mediating the affects I'm concentrating on in this work. They, too, were discussed in chapter 2. However, fairly basic metaphors can probably be found also among the somewhat more complex metaphorical constructs. In the case of primary metaphors, the term primary source concept is typically used to refer to the image-like content that provide the imagery, words and inferential structure for the metaphors. The function of these concepts is very similar to that of the source domains of the conventional conceptual metaphors–with the exception that primary source concepts are specifically linked with our perception of our bodies and our environment. Consequently, the concepts resemble image schemas. However, image schemas don't have source or target domains between which "seeds of meaning" become transferred, or carried across (the Greek origin for the word metaphor is *meta-pherein,* ["across-carry", Latin equivalent of *meta-phor* is *trans-ferre*])–in this sense they are static internal representations. With primary metaphors, subjective judgment/experience is the target domain, thus, the primary target conceptualisation. (Grady 1997: 264–265; Lakoff & Johnson 1999: 49–50; Cox 2017: 80.)

Before getting into the conceptual metaphors more directly related to the FORCE image schema, I will introduce a primary metaphor that can be quite easily associated with landscape–which, again, can be understood as a container-like entity. The IMPORTANT IS BIG primary metaphor takes as its primary source domain/concept the sensorimotor experience of size, which is transferred into subjective experience (the target domain) of importance. Containers come in many sizes, and landscape clearly is a very large one. Thus, it is highly likely that with this metaphor the CONTAINER image schema, or one of the derivatives of the FORCE schema such as that of VERTICALITY, occupies the source domain. The primary experience from which the IMPORTANT IS BIG metaphor arises involves our childhood perception of finding big things like our parents important and able to exert major forces on us. They also dominate our visual experience. (Lakoff & Johnson 1999: 50.)

It is clear that, as a child, interaction with such big, tall and powerful creatures as our parents can invoke highly arousing affects that can be both positively and negatively valenced. In terms of my musical experience of the airy feeling of the target excerpt, it is possible that through the avenue of Associations I can associate the general feeling of landscape (thus, a large container including big things) caused by e.g., the echoes and the reverbs with my early childhood environment, where I was small, but the surroundings were big and important–even vital–for me. Consequently, through this interplay of affect and conceptual metaphor it is possible that I, mostly nonconsciously, associate the airy feeling with importance. And, in the capacity of the mimetic actor or performer (or, even the music itself), it is, in fact, I who/what is important.

In my experience, also the leap-like events of the target excerpt, thus, the sonic objects 8–10, contribute to the airy experience. This is particularly the case with the "bouncy" synthesizer motif (picture 1, staff 2). As mentioned earlier, its role in how I perceive the song could be described even as definitive. It contributes to the airiness especially by way of its echo/delay effect, that constitutes a significant part of the reverberation present in the texture. The fast rhythmicity of the echo already noted in chapter 3 regarding the timbre of the synthesizer motif (sonic object no. 13) adds on the airy, energetic feeling. Maybe the bounces can be understood as a fast up and down movement in a container, thus, a landscape. In our everyday experience, the upper part of the landscape is filled almost entirely with air; hence the usage of the concept "airy" in this musical context.

The mimetic roots of this airy and vibrant feeling can be suspected to derive at least partly from the LEAP image schema, a special case of the PATH schema. Its metaphoric motivation arises from all the affects that one can feel in relation to path-like movement, thus, by one's enactments of path-related motion including exertions, maintenance of balance and the overall motivation to engage in such an activity. (Cox 2017: 66, 64.) In the light of these characteristics of the LEAP schema, and, naturally, our experience of real-life leaping, it seems clear that also the FORCE image schema plays a role in how the leap-related affects arise. Taking a leap requires exertion, therefore, force. Also, the fact that leaping involves vertical up and down movement speaks for the activation of the FORCE schema, because the VERTICALITY (UP-DOWN) schema is derived from it.

Based on the previous discussion, the grounding of leap-related affective reactions in a musical context quite obviously lies in the perceived similarity between the actual, real-life leaps and our experience of something (e.g., pitches individually, or as parts of a tonal scale) leaping in music, and the connection of these concrete and abstract domains appears to take place via the conceptual metaphor LEAP. The activation of the LEAP image schema in its source domain position is the reason for the certain exertion-related affects to arise. At least in my case, these affects could be described as positive and arousing. They make me feel full of energy, potent, and, as if I was generally in a good mood–"walking in mid-air". The feelings probably include some sense of happiness, too. In fact, because a leap always involves a rise, thus, vertical motion, the primary metaphor HAPPY IS UP suits well to structure this feeling. Its sensorimotor domain is bodily orientation, whose primary subjective judgement/experience includes happy, energetic feeling. (Lakoff & Johnson 1999: 50.)

Furthermore, the musical force of melodic gravity can be suspected to contribute to the airy feeling that may arise from pitch shifts. It refers to the tendency of a note to descend, dealing with the phenomenon of tonal degrees and their tendencies already discussed, for example, in chapter 3.2. If a note/pitch is above the first note of a musical passage such as a motif or a leap in it, and particularly if this first note forms one of the most stable tonal degrees (the tonic being the most stable), the note above may convey the feeling of being "up in the air"–especially if the melody is paused on it. Therefore, the melodic gravity pulls down the notes above the more stable "platform".

(Larson 2012: 83.) The pitch leap from E (the tonic) to G in the sonic object no. 9 exemplifies this phenomenon.

In terms of the Cox's eight avenues of affect, the just described effects can be ascribed to the avenue of Associations, the metaphoric process of LEAP being its principal driving force. However, even if it is clear that real-life physical leaping action involves up and down movement, thus, alternation between high and low positions, it is by no means clear why we in the context of music talk, for example, about high and low pitches. In the same vein as there's no real motion in music, there are no real highs and lows either.

Cox (2017) ascribes the musical highs and lows to the blend of ten sources of which three contribute literal height, the other seven metaphoric height through the GREATER IS HIGHER conceptual metaphor. However, the blend combines elements from the both heights. The sources I find most relevant and exemplary in terms of my current analysis are staff notation (high pitches/notes are literally higher on the staff than the lower ones), head voice and chest voice (the sensation of low singing voices internally resonating closer to the chest, the high voices closer to the head), and both magnitude of exertion and magnitude of sense of effort (greater muscle exertion, thus effort, is via mimetic subvocalization experienced as higher than lesser exertion). (Cox 2017: 92–97.) Consequently, it was most likely due to these kinds of sources that I ended up pointing out the leap-related sonic objects no. 8–10 in chapter 3.3. Thus, the sources caused me to associate these fast pitch and tonal shifts with the jerks occurring during the physical everyday path-like motion.

4.4. Bright sound

As suggested in the preceding subchapter, also the bright global sound of the whole excerpt and the brightness of one individual timbre in connection with the particularly jerky motif (that is, object no. 13) contribute to the airy general feeling. Due to the shared emphasis on higher frequencies that can be suspected to perceptually stem from the metaphoric/mimetic sources just introduced, we tend to associate brightness with high pitches. And, based on our everyday experience, things that are located high(er) (e.g., air and clouds) are typically lighter than things normally found at lower heights,

thus, on the ground (e.g., rocks and elephants). Despite the contribution of the bright timbre to the general feeling of airiness, perceived brightness can be experienced as self-sufficient general feeling, too. Therefore, I will in the following briefly introduce some potential metaphoric causes for its affective consequences. The metaphors quite clearly remind of the ones addressed in the previous subchapter–especially what comes to the application of the FORCE image schema.

Because the primary source concept of the perception of the bright timbre is supposedly derived from the FORCE image schema, at least these two primary metaphors–that is, metaphoric processes–could be potential candidates for participating in the induction of the related affective reactions and their further conceptualisations: CAUSES ARE PHYSICAL FORCES and DIFFICULTIES ARE BURDENS (Lakoff & Johnson 1999: 53, 50). I chose them from a list of primary metaphors based on to what extent their motivation, thus, grounding in physical reality, is related to some form of (real or mentally simulated) use of force. For example, the sensorimotor domain (the primary source concept) of the CAUSES ARE PHYSICAL FORCES primary metaphor is "exertion of force". The corresponding subjective judgment, thus, the primary target concept/domain is "achieving results". (Lakoff & Johnson 1999: 53.)

The activation of this metaphoric process means that if a person recognises (typically nonconsciously) the presence of physical force, he/she contrasts this feeling (again, mostly nonconsciously) with how physical force is exerted in order to move or change physical objects. The abstract outcome (the target domain) of this metaphor, the concept of achieving results, can manifest in language in a sentence like "They *pushed* the bill *through* Congress". (Lakoff & Johnson 1999: 53.) However, the linguistic manifestation is not mandatory for the related affects and conceptualisations to arise, which is, again, the central idea of my work. The CAUSES ARE PHYSICAL FORCES primary metaphor is, obviously, very general by nature. Nevertheless, what it could mean with respect to my experience on the bright timbre is that I may ascribe certain sense of causation to it, and to the simulated and/or associated exertions behind it. Therefore, what listening to that kind of timbre may mean to me is a sense of accomplishment, that I personally have achieved something. And, the more events/qualities of this type the song is comprised of, the more accomplished and effective I feel myself. However, when just casually listening to the song, I can't

consciously ascribe this positive feeling to anything but to how good the song is, how good it sounds.

It is likely that the affects the metaphoric achievement invokes in me are mostly positively valenced, even though this isn't as clear if the DIFFICULTIES ARE BURDENS metaphor is to activate. It takes the potentially discomforting muscular exertion needed for, say, lifting or carrying heavy objects as its source domain, transferring it to the subjective experience of difficulty. Of course, this is plausible. Bright timbre can be associated with difficulty, with burden. Producing it vocal-mimetically, through subvocalization, requires effort. However, the sense of exertion can be experienced positively, too; like when feeling satisfied after hard work. In any case, the previous discussion aligns well with what was noted in chapter 3 about the effect of the bright timbre on me. It invokes vibrantly positive, thus, arousing affects as a result of the mimetic exertion and tension.

In the light of the topics of this and the previous subchapter, it seems evident that there is much in common with the general feelings of airiness and sounding bright. This similarity appears to stem from the overlapping metaphoric-affective grounding that, via the avenue of Associations, makes the listener (thus, I) treat them as perceptually and conceptually similar qualities. However, I want to introduce one more primary metaphor that can be suspected to have significant affective consequences in terms of my penchant for the target excerpt on the grounds of the bright timbre and maybe the airy feeling, too: GOOD IS BRIGHT/BAD IS DARK. It gets its motivation from the correlations between light and safety, and dark and danger. (Grady 1997: 292.)

For example, due to obvious evolutionary reasons, we feel safer in places where we can see properly compared to darker surroundings. Its alternative, or additional, motivation is based on the primary metaphor MORALLY GOOD IS CLEAN and its motivation of connecting cleanliness with healthiness. Bright/light objects that we interact with (such as food) are visually evaluated as appealing, as opposed to darker objects. Thus, for example, if food looks like it's not spoiled (thus, not dark, e.g. mouldy), we judge it clean, which usually means the same as healthy–a good thing. (Grady 1997: 292.) The affective implications of these metaphors are easy to see. If I associate the bright timbre with good, clean or morally good, the related affects are most likely positively valenced–at least if I feel that it is important to be a (morally)

good person (e.g., "a good boy"). It is in place to note here that this really is the case with me even today, but not to the same extent as in my childhood, or as a teenager. However, the sensorimotor domain of these metaphors is not related to motion or exertion of force. The domain is vision. Consequently, this serves as one more example of the avenue of Associations, of how it combines different metaphoric processes, bringing together the mimetic exertion/tension occurring during the perception of bright sound and the concepts of clean (or, pure), healthy and (morally) good.

In chapter 3, the perception of the bright sound and timbre in general was determined as belonging to the micro timescale of the 0–0.5 seconds duration range. The events within this timescale are thus perceived very fast, and typically below conscious awareness. However, fast and often mostly nonconscious perception applies also to other kinds of musical events/phenomena than those related to timbre. Vertical harmony–based on which the sonic object no. 7 was established–is most likely one of them. Like in the case of timbre, the affective content of vertical harmony can be ascribed to mimetic tension. In terms of harmony, this is experienced within the chord. I attached generally positively valenced feelings/affects of joy, confidence, hope and brightness to the G major chord of the object no. 7. Thus, besides the shared timescale, also the experience of brightness and the other qualities that can be associated with activity and energy link the domains of timbre and vertical harmony. Consequently, it seems appropriate to address them together.

As noted in chapter 3, it is very difficult or even impossible to differentiate between the effects of vertical and horizontal harmony, especially if the chord is in a musical context, thus, participating in a tonal harmonic progression. This is the case with the sonic object no. 7. Applying the MUSICAL LANDSCAPE metaphor, chords can be thought/experienced as locations on a musical path. For example, the G major chord in question is located at the upper end of the upward harmonic leap from E minor to G major at the beginning of measures 2 and 4 (picture 1, staff 4). In terms of a landscape, it could represent, say, a mountain peak or other higher point. In chapter 3 I ascribed the descriptive function of this leap to empowerment.

However, does the mimetic-affective power of this particular higher ground result from its relative height to the surroundings, or is there something in the place itself that gives rise to positive, invigorating feeling? Because I have ended up pointing out

the sonic object no. 7, I assume, or feel, there is–even though it is highly likely that the both causes affect the experience. I further suspect these positively valenced affects with respect to the vertical harmony to arise from the similar, or same, image schemas and conceptual metaphors I have already addressed in this chapter. The CONTAINER schema applies to individual chords, too, and because chords comprise simultaneously sounding pitches/notes, there may be experiential tensions between the notes.

However, as discussed in chapter 3.2., chords/harmonies that are in their root positions (e.g., the G major of object no. 7) are typically perceived as consonant. Instead of arousing emotions, they quiet them. The intervals within the chords are, in a sense, in balance. Thus, the tensions are in fact minimal. Nevertheless, the FORCE image schema can be still suspected to be at play regardless of the consonance of the chord. Also, the PATH schema most likely affects the experience. Being in balance can be associated with moving along a path, and both movement and maintaining the balance require muscular exertion/tension, therefore, force. And, when trying to stay in balance, we are usually in an upright, thus, vertical position. The conceptual metaphor PITCH RELATIONSHIPS ARE RELATIONSHIPS IN VERTICAL SPACE (or, in short, PITCH IS HEIGHT) fits well to illustrate the associative connection between our attempt to maintain balance and how individual notes are organised within a chord (Zbikowski 1998: 3; Julich 2018: 135).

It seems plausible that the source domain of this metaphor is motivated by the FORCE image schema, and particularly its derivative, the VERTICALITY (UP-DOWN) schema. Therefore, the musical force of gravity can be suspected to affect the notes of a chord, how strongly they are drawn to each other. However, in the case of major chords in their root positions, the distances between the notes are equal. Consequently, the forces are in (mimetic) balance, and the intra-chord tension is low. This may be the mimetic-affective reason for me to perceive the sonic object no. 7 also as safe, light and somewhat predictable, as "easy-going" and trustworthy–not particularly exiting or arousing, but generally positively valenced. It provides a firm ground from which to marvel the landscape.

4.5. Proceeds like a train (or a horse)

While introducing the concepts of musical landscape and music as moving force, it was noted that both physical and musical motion occurs in a certain, comparable manner. This subchapter concentrates on the way I, the mimetic participant, traverse the airy and bright landscape of the target excerpt. From the sonic objects established in chapter 3, the objects no. 1–5 and 8–12 seem as the most fitting to become perceived similarly as horizontal, everyday physical movement. Through them, perception of motion arises from sources such as metre, rhythm, tonality and pitch (see table 3). However, I will here deal only with the objects that appear to best communicate the manner of the progression.

The bouncy character of the synthesizer motif including also leaps has been already discussed. In addition to the airy feeling, it can be said to at least embellish the otherwise straightforward progress of the song. It was also suspected to contribute to the emergence of the galloping rhythmic feel (object no. 12), that with the recurring duple of the alternating bass and snare drum hits (object no. 11) forms the rhythmic and metric foundation of the target excerpt. However, also other textural phenomena than rhythm and metre can contribute to the sensation of steady forward movement. Tonal melody and harmony, too, create tensions that can be perceived as leading somewhere. This effect I will demonstrate with objects no. 5 and 6. The metaphoric-affective properties of these four experiential entities will be assessed next.

The sonic objects no. 11 and 12 were established in chapter 3.3. on the grounds of different pulsating textural layers. The former was mentioned as the source of the steady quarter note drive of the whole song. Familiar biological and cultural cues were suspected to exist for the effect of this foundational pulse. The ones mentioned were the 125 BPM tempo of the target excerpt corresponding to the human heart rate during moderate exertion, and the duple of one bass drum and one snare drum hit recurring at a rate close to the ticking of a clock. The latter sonic object was pointed out based on its galloping rhythmic feel. Together the objects give rise to the experience that can be described as determined, tenacious and powerful forward motion.

In addition to melody, musical forces affect how we experience rhythm and metre, too. Musical inertia is particularly central to rhythm. The term refers to the propensity of a pattern of pitches or durations (or both) to continue in the same manner as it was heard,

how it is represented in musical memory. In his book about the metaphorical phenomenon of musical forces, Larson (2012) notes that like many musicians, he too refers to these kinds of sources of perceived motion as "gestures". They seem to have a beginning, middle and end. (Larson 2012: 22, 96, 143, 145.) His view is in agreement with that of the musical gesture studies, and, thus, that of the theory of the sonic object.

The tendency of a (musical) pattern/gesture to keep repeating in the same fashion can be ascribed to the analogous physical world phenomenon: physical gestures move from their beginning to their end from stability through instability back again to stability. This is basically the mechanism of musical forces also more generally, but in rhythm the forces can be suspected to manifest in two ways, via metric magnetism and/or rhythmic gravity. The latter appears as a particularly suitable interpretative tool for explaining the effect of the sonic object no. 11. Rhythmic gravity can be described as our embodied experience of musical rhythm that emerges through the similar qualities we attribute to both rhythmic gestures and to the impacts physical gravity has on the corresponding physical gestures. The concept rests on our propensity to understand rhythmic stability as mapping onto physical stability, such as a stable platform or base. This is reflected, for example, in the terms "downbeat" and "upbeat" concerning simple dance-like motions where downward physical movements become associated with musical motions that are directed towards metrically stable points, thus, downbeats. In fact, conductors show these with downward gestures. (Larson 2012: 146–149.)

In the case of the sonic object no. 11, the bass drum hitting the first and third beat of each measure (picture 1, staff 6) represents the downbeats, while the upbeats of the second and fourth beat are highlighted by the snare drum sound (picture 1, staff 5). The idea of rhythmic gravity implies that upbeats are directed upwards, against gravity–away from the state of stability. Thus, they are associated with "opening" movement that requires effort. The musical meaning potentially arising from this scheme is based on the perceived downward pull of rhythmic gravity. However, this meaning may vary. For example, I might experience the snare drum as moving up with effort and then being pulled down by its own weight in an attempt of overcoming rhythmic gravity and its base, the bass drum hit. Or, I might hear the snare as floating up and away with ease, like a balloon liberating itself from the effect of gravity. (Larson 2012: 148–149.)

In the context of the target excerpt, the both alternatives seem to correspond with the way I perceive the rhythm of the object no. 11. Rhythmic inertia manifests particularly in the way rhythmic gravity pulls the second hit of the duple, thus, the snare drum, back down onto the first hit of the next duple, the bass drum. Thus, successive patterns (e.g., successive duples/objects no. 11), in a way, merge by eliding a stable ending with a stable beginning. This creates a strong sense of forward motion. The alternative "balloon-like" interpretation appears as contributing to the airy feeling discussed in chapter 4.3. (Larson 2012: 146–147.)

I find it probable that my perception of the similarity between object no. 11, ticking of a clock and heartbeat is a result of both mimetic and nonmimetic associative processes. The nonmimetic aspect of Cox's (2017) avenue of Associations could cause me to simply pay attention to the overt resemblance between the object and the cues. And, the metaphoric processes of the musical forces just discussed can be suspected to "feed" the mostly covert mimetic aspect of the same avenue. Therefore, the reason for me to associate object no. 11 with the cues might be that the same or similar forces affect the way I perceive the cues, too. As Larson (2012: 214) notes, the forces may apply also to other intuitive embodied phenomena/experiences than just the ones related to music.

Nevertheless, heartbeat and the ticking of a clock are, in fact, musical–or at least rhythmic–phenomena. Thus, it is easy to see why they might become associated with object no. 11. However, the nature/source of this association is not clear. It may result from a nonmimetic cause, or the shared mimetic qualities of the object and the cues make me to perceive them as similar. Actually, as I see it, there might not be such a thing as nonmimetic understanding/experience at all. Even if we think it is obvious why we judge some things as similar, this perception of similarity may still be fundamentally based on mainly covert mimetic motor imagery.

Next, I will introduce the other rhythmic force, metric magnetism, that seems fitting for explaining the effect of object no. 12, the galloping rhythmic feel. The term refers to the perception of a note on an unstable attack point being pulled to a successive, more stable attack point. The pull grows stronger as the attracting attack point, "the goal", gets closer. Object no. 12 is comprised of one eighth note and two 16th notes (picture 1, staff 8). According to Larson, in 4/4-time signature, the longer the duration of the note, the more stable it is in terms of rhythm. This is because, in the terminology

of a Schenkerian analysis, it can be said to belong to deeper levels of metre. (Larson 2012: 22, 148.) I assume this interpretation comports well with the concept of different rhythmic and metrical layers presented in chapter 3.3. Thus, in the case of the object no. 12, the level/layer of the eight note is more stable than that of the 16th notes, and it should be therefore perceived as attracting the 16th notes.

The theory appears as compatible with the way I experience the object no. 12. The first note (thus, the eight note) of the galloping rhythm feels like an "intra-gestural" downbeat that initiates the forward motion towards the imbalance of the subsequent 16th notes. Then, metric magnetism pulls the 16th notes back to the eight note, to metric stability. Actually, this movement correspond well with what happens during actual horse riding. The gallop of the horse makes the torso and the head of the rider to twitch back and forth to the gallop rhythm. In my experience, this kind of motion in a way "sucks" the listener/rider through the musical landscape in a slightly forward-leaning posture. However, this occurs gesture by gesture, from one occurrence of object no. 12 to the next–and, thus, from one stable foothold to another in a series of exertions. Actually, the movements resemble leaping, too. Like rhythmic gravity, metric magnetism is a source of musical/rhythmic inertia.

I will start defining the image schemas, conceptual metaphors and the related affects for the experiential content of sonic objects no. 11 and 12 by briefly discussing how also "non-rhythmic" musical forces can invoke the sensation of steady forward movement that, in fact, can be perceived as circular. This was already addressed in chapter 4.1. with respect to object no. 5 that stretches over the measures 1–3 of the target excerpt, starting from the tonally stable of E minor (the tonic), and also ending to it. Typically, musical forces create expectation by being directed to goal. And, as previously noted, this occurs by "moving" from stable musical event through unstable event(s) back to stability, the goal. It is easy to see why this kind of anticipation can be perceived as motion. Motion is change. Even though we generally experience movement as being directed forwards, it's not difficult to understand why it can be perceived as circular, too. Moving from stability to stability has a sense of returning to the same place you started from. Thus, it may feel like going around in circles, repeating same thing all over again.

In the case of the sonic object no. 5, the movement starts from the sonic object no. 6 (the Em harmony) and also ends to it. In terms of the suggested circular motion, object no. 5 can be thought of as a higher level of experiential circles, and e.g. the objects no. 11 and 12 circle inside it at a lower level, resulting from different musical forces. This kind of layering has been discussed earlier in this work. However, the experienced motion at the level of the object no. 5 can be suspected to arise from the musical forces of melodic magnetism, melodic gravity and musical inertia (see Larson 2012: 22). The mechanism of these forces has been addressed earlier in this chapter either in respect of melody or rhythm.

The tonic represented by the object no. 6 plays an important role in the perception of the object no. 5 as well as the whole target excerpt. As noted while discussing object no. 7 (the "bright" G major harmony), if the MUSICAL LANDSCAPE metaphor is applied, chords are locations on a musical path. Because the vertical harmony of the object no. 6 is the inverted version of E minor chord, it is typically perceived as more energetic and tense than its more consonant root-position variant (see chapter 3.2.). This theoretical interpretation is in agreement with my own experience. The affects I associate with the object are positively valenced and only mildly arousing. The tension is there, but in an attenuated form. The chord seems to communicate certain melancholic serenity. However, as the transition away from it begins via the leap of object no. 9, the musical forces grow stronger. At the end of the cycle of object no. 5, the participant of the musical journey (thus, I) returns to the familiar and safe "base level" of serene longing.

Object no. 6 no doubt shares the image schematic and metaphoric content of the similar object no. 7 (see chapter 4.4.). Thus, at least the FORCE and VERTICALITY schema can be suspected to structure its conceptualisation. And, because the effect of objects no. 5, 11 and 12, too, was ascribed to different (musical) forces, the FORCE schema quite evidently plays a significant role also in how these three objects are perceived. Furthermore, because their movement is directed forwards, most likely also the PATH schema is at play. The role of the SOURCE-PATH-GOAL schema with respect to object no. 5 was discussed already in chapter 4.1., but it would fit to structure the similarly circular experience of objects no. 11 and 12, too.

It seems to me that the FORCE, PATH and SOURCE-PATH-GOAL image schemas all affect the conceptualisation of objects no. 5, 11 and 12, but with varying degrees of emphasis. The FORCE schema quite evidently works at different levels, and it creates and relieves experienced tension for musical events of all durations. For example, in the case of object no. 5, it has an impact on its constitutive shorter passages (such as leaps), as well as the object in its entirety. Consequently, its role is foundational in terms of all musical events to which MUSIC AS MOVING FORCE metaphor can be suspected to apply. And, in the light of my work thus far, the scope of this metaphor looks wide indeed. With respect to the determined forward motion, the main topic of the subchapter, the PATH and the similar SOURCE-PATH-GOAL schema seem fitting to occupy the source domains of the conceptual metaphors that might explain the affects arising from the sonic objects no. 5, 11, and 12. However, the schemas may operate either in parallel with the FORCE schema (or its derivative, the VERTICALITY schema), or they form a certain kind of higher experiential layer on top of the FORCE schema.

With respect to the perceived forward motion, the expected target domain/abstract subjective outcome of a suitable conceptual metaphor could be related to finishing or accomplishing something, and in the case of circular movement, returning, too. In fact, returning could feel like there wasn't movement/change in the first place, everything is like it always was. The forces abate, there's no more tension. A suitable primary metaphor for a finish/accomplishment in general could be ACHIEVING A PURPOSE IS ARRIVING AT A DESTINATION (Grady 1997: 286). The associated affects are positively valenced (e.g., satisfaction), and the level of arousal is fairly low. Actually, and particularly if the potentially circular aspect of the motion is emphasized, the affects may be similar to when encountering something familiar and safe–therefore, most likely generally positive and calm.

If circular motion feels like journey hasn't really been made, thus, nothing is achieved, the feeling may still involve a sense of familiarity and safety, but it is possible that the motion is also perceived as repetitive and "going nowhere"–as having no clear direction. The related affects aren't necessarily (fully) positively valenced. In modern metaphor research, image schemas are often represented as frames, which are semantic representations of experiences, objects and events. Frames act as source and target domains of metaphors. (MetaNet 2020a.) The frame CIRCULAR PATH would suit

for structuring the perceived circular motion. When it is adopted, the source of a path-like journey equals the goal. The frame is ultimately a special case of the SOURCE-PATH-GOAL image schema/frame and can be suspected to participate in the formation of the event-structure primary metaphor PURPOSES ARE DESTINATIONS, that, for its part, provides the physical world grounding for the "ordinary" complex conceptual metaphor LACK OF PURPOSE IS LACK OF DIRECTION. This kind of uncertainty about the directions may give rise to the feelings of just floating around or drifting aimlessly. (MetaNet 2020b; Lakoff & Johnson 1999: 190.) They are familiar to me.

Despite the fact that the manifestations of circularity discussed so far don't always belong to the realm of conscious perception, I find it possible that the suggested repetitive experience, "being stuck in a loop", can feel familiar and safe also because it may be perceived as taking the form of certain compulsive, neurotic behaviour. For example, in obsessive-compulsive disorder (OCD), a person repeats certain thoughts or routines all over again. Generally, the related affects are negatively valenced–the disorder impairs functioning and is a source of distress. However, in my personal experience, I find it plausible that the related affects may be positively valenced and calming, too–familiar things often are. Actually, maybe musical repetition can be thought of as (motor-mimetic) surrogate for the actual obsessions and compulsions of OCD. Thus, there might be some kind of image schematic equivalence between musical repetitions and the symptoms of this neurotic disorder. By listening to circular music, the person suffering from the disorder may have decreased need for engaging in the symptomatic, repetitive action.

From Cox's avenues of affect, the avenues of Associations and Anticipation (see table 2) appear as the best candidates for linking the conceptual metaphors of the sonic object no. 5, 11 and 12 to the related affects. Like noted earlier with respect to object no. 11, it may not be clear which one of the two aspects the avenues, mimetic or nonmimetic, is more dominant in how the objects are experienced–if such division is feasible in the first place. Here we assume it is. For object no. 11, the nonmimetic aspect of the avenue of Associations appeared as stronger. The case with object no. 12 is more uncertain. I'm inclined to judge the both aspects as equally powerful. The musical forces of the galloping feel are strong, but it can't be denied that any galloping sound/rhythm really reminds of a horse.

The role of the avenue of Anticipation in the perception of object no. 5 is clear. Tonal progression is a textbook example of musical expectancy (see e.g., Huron 2006; Huron & Margulis 2010). Both the mimetic and nonmimetic aspects seem to be at work. Thus, I am able to predict totally consciously and "objectively" where the melody is heading, but I can also put myself in a quasi-first-person position of the mimetic participant and predict what I will do vicariously. However, because musical forces generally create expectation by being directed to goal, thus, to stability, and because this motion can be perceived as circular, the both aspects of the avenue of Anticipation most likely affect the rhythmic objects no. 11 and 12, too.

There are two more (primary) conceptual metaphors that can be important elicitors of the affects related to the experience of powerful, inescapable train-like progressive motion communicated by sonic objects no. 5, 11 and 12: NORMAL IS STRAIGHT and GOOD IS FORWARD. The first gets its motivation from our innate preference for symmetry. That is, we see regularity as positive, and treat irregularities as anomalies. The second is a corollary of the ACHIEVING A PURPOSE IS ARRIVING AT A DESTINATION metaphor mentioned earlier. Thus, it is better to be ahead than behind in order to reach a destination. (Grady 1997: 292–293.) Forward progression is no doubt the most basic and common form of motion. That is why going straight feels normal.

In the context of achievement, the meaning of the GOOD IS FORWARD metaphor is obvious. The affects related to both metaphors are positively valenced, and neutral in terms of arousal. The avenue of Associations appears as their primary source, but probably also Anticipation plays a role in motion that can be expected to continue as straight. And, importantly concerning my personal history, the effect of the metaphors can be associated with the general concepts of (morally) good and achieved, the qualities of a good and obedient person/citizen. I have already referred to the similar effects of bright timbre in chapter 4.4. Furthermore, in my experience, a person with neurotic tendencies may find regular, "straight" music unproblematic, soothing and safe.

5. DISCUSSION

5.1. Functional fantasies

The two analyses chapters of this work dealt with the same phenomenon, musical motion that manifests via experiential entities, but with different theoretical emphases and objectives. In chapter 3, the idea was to extract sonic objects from the target excerpt on the grounds of my personal feelings, the findings regarding musical gestures and sonic objects, and how perceived motion or the closely related phenomenon, tension, is understood and explained in "traditional" music theory and analysis. Music theory was utilised for two reasons: to provide theoretical rigour to back up my personal, subjective notions and interpretations, thus, to show that also other people than I have had the same or similar experiences, and also to demonstrate how metaphoric conceptualisation affects also music theoretical concepts and language in general. This becomes evident if the theoretical constructs of the first analysis chapter are evaluated in the light of the image schemas and conceptual metaphors pointed out in chapter 4. Yet, conducting such an explicit comparison did not belong to the scope of my work. In chapter 4, the results of chapter 3 were interpreted through conceptual metaphor theory (CMT) and Cox's theory of the eight avenues of musical affect that is in part based on CMT. Because of their embodied nature, sonic objects can be suspected to emerge from conceptual metaphors and their constitutive image schematic structures, always invoking affects in the process.

However, it's not clear, how the results of the analyses should be interpreted. For example, is it justifiable to state that the established sonic objects and the related affective conceptual metaphors really reflect my own personal "musical experience profile", the musical penchants characteristic particularly of me, or are they mostly universal, affecting majority (or all) of the people? As my leaning on the related theories demonstrates, generally, musical motion and its conceptualisation are global phenomena, based on our shared evolutionary origin (thus, biology) on the planet Earth. Nevertheless, research has shown there is individual and cultural variation. For example, according to Zoltán Kövecses, individuals or groups of people apply different construal/cognitive operations, which can result in "differential cognitive styles". They can be defined as "the characteristic ways in which members of a group

employ the (otherwise universal) cognitive processes available to them". These processes include elaboration, conventionalization, viewpoint preference, (experiential) focus, prototype categorization, metaphor vs. metonymy preference, framing, and others. Consequently, they can lead to varying use of metaphor. (Kövecses 2015: 26.)

The variation means that different people may see things differently for many reasons, for example, they pay attention to different experiential content. There may also be variation in how people categorise things and experiences, which may have consequences e.g., in terms of how musical genres are perceived. For example, the musical genre characteristics I presented in my bachelor's thesis (Mertsalo 2013) aren't necessarily universal at all. And, naturally, the variation affects how the results of my current work should be understood: the established metaphors are inevitably at least partly subjective. Cultural factors, too, are known to have an impact on the interpretation of the otherwise universal bodily experience of interacting with our environment. Larson notes that like "memes", the mental constructs analogous to genes, also metaphors live in a particular environment of our thoughts and our culture, and in order to survive, they have to fit the environment. This means that–in equally circular fashion with genes and memes–metaphors are shaped by culture, but, to an extent, culture is mutually and simultaneously shaped by metaphor. (Johnson & Larson 2003: 80; Larson 2012: 48.) Consequently, the established metaphors and their affective consequences, as well as the musical genre characteristics of italo disco pointed out by myself may, in fact, be fairly universal within my own (Western) cultural tradition, but not equally so in some other parts of the world.

Elin Bråthen cites Kövecses when she discusses the role of our bodily experience in how we use metaphor with basically limitless creativity to describe the abstract qualities of musical sound. Kövecses presents an extensive list of factors, the aspects of metaphor, which all are involved in metaphor variation. They are clearly related to cognitive styles and effect of culture addressed above. The list includes e.g., different source and target domains, personal experience, metaphorical linguistic expressions, cultural models, non-linguistic realizations, mapping, blends–and neural networks in the brain, too. Combined with our bodily experience, they can be said to form our "individual metaphorical repertoire". (Bråthen 2013: 67; Kövecses 2005: 117–118.)

In the light of the previous discussion and, in fact, this whole work, it seems highly probable that the metaphors I pointed out in chapter 4 belong to my own individual metaphorical repertoire. However, my intention is not to claim that the "experiential profile" of some other people couldn't be comprised of more or less the same or similar set of conceptual metaphors, if their cognitive style, personality, cultural background and life events align with those of my own. But, with respect to this work, to maintain an acceptable level of validity and reliability, I can speak only of my own experiential makeup.

The title of this work suggests a connection between metaphors, affects and fantasies. The naming reflects my assumption that we may find certain kind of music appealing if there's something in its image schematic and metaphoric constitution that "resonates" with our hopes and dreams, thus, fantasies. In other words, the metaphors afford (thus, provide, furnish with possibility) us the fantasies that we find most appealing, that evoke the most positive affects. This process of affordance isn't necessarily conscious at all, but, nevertheless, we recognise resonating music when we hear it. Obviously, italo disco is this kind of music for me.

The work of Ulrik Volgsten (2019) supports my assumption. Volgsten considers fantasy and imagination as synonyms, and suggests, that music is, in fact, an act of imagination more than it is a product of it. It is the corporeal listener who creates the music imaginatively to sound the way she feels. That is, the listener "attunes" his/her affect (its amodal variations in intensity, timing and contour) by listening to music that affords the triggering of his/her the body schemata (i.e., image schemas). Then, the schemata invoke the affects. This process can be exemplified with dance (that is, gesticulating to music). Through metaphorical projections, music is conceived of in relation to body schemas encoding the dance movements. The metaphorical process is so effective that, when we hear music, the body as if "starts to dance by itself". (Volgsten 2019: 230, 238, 242–243.)

Bringing together the concept of individual metaphorical repertoire and the view supported by Volgsten, it can be stated that the image schemas and conceptual metaphors pointed out in chapter 4 compose at least a subset of my personal metaphorical repertoire, comprising the "building blocks" of my imagination. When I hear or imagine "Shooting Star (Six Times)", affect attunement activates my

imagination, thus, fantasy. Therefore, by fantasizing, I create the music, or, at least its meaning to me. This notion of music as an act of imagination/fantasy is compatible with the idea of timbre as a verb presented in chapter 3.4.

Via the projections of my personal metaphorical repertoire, the music of the target excerpt affords the real or imaginary movements and other actions and tensions that, for some reason, I find important and meaningful. Usually these affordances invoke positive affects, because there is something familiar and safe in them which is easy to relate to. Most likely the familiarity has to do with "corporeal memory" of my life events and the related affective reactions. However, not all of our embodied memories are favourable, but, naturally, they can still be well-known. And, in my experience, familiar can always be a source of–it not necessarily positive–but at least "resonating" affect.

In the light of the previous discussion, it appears that the reason for me to listen to music like "Shooting Star (Six Times)" is that it responds to certain psychological need. Thus, it has a function. The nature of this need (or needs) was addressed above, and also elsewhere in this work. Based on the conceptual metaphors pointed out in chapter 4, it seems that I find music that communicates force in a distinct manner particularly resonating. I assume that this kind of "mimetic empathy" is enhanced by the fact that linear and effective use of force can be easily associated with machines–such as trains and robots. The synthesizer timbres of the target excerpt strengthen this futuristic, machine/robot-like imagery, but as noted in chapter 3.4., they remind of certain traditional instrument sounds too much to become perceived as completely alien. In addition, machine-related imagery usually involves certain sense of control and predictability that I find easy to relate to.

In fact, in my bachelor's thesis (Mertsalo 2013), futuristic sound and/or lyrics were mentioned as one of the musical genre characteristics of italo disco. Nevertheless, the most central metaphorical foundation of this fantasy-laden experience was ascribed to perceiving music as landscape. This is not surprising, since travelling across landscape involves incessant exertion. Musical forces were shown to originate from various components of musical texture, and timbre, too. The associations with machines and robot-like cybernetic organisms give rise to suspect that the metaphoric movement through the musical landscape of "Shooting Star (Six Times)" may be machine-

assisted. However, the metaphoric-affective consequences of the resulting altered level of experienced human agency would be a topic of an entirely new thesis.

5.2. Conclusion

In this work, I studied my personal musical experience particularly with respect to italo disco, a genre or style of electronic dance music (EDM) that developed in the early 1980's, grew in popularity until the end of the decade, went out of style, but has been nevertheless listened and produced outside the mainstream to this day. The approach taken is that of the embodied cognition, a research paradigm that stresses the role of the body in how meaning is formed. The most central theoretical framework utilised was the conceptual metaphor theory, but especially in the first analysis chapter the theories of sonic object, musical gestures and so-called subvocalization were employed in conjunction with traditional music theory/analysis. All the applied theories (except music theory maybe only implicitly) encompass the idea that experience arises on the grounds of unified experiential units, whose experiential content is based on some form of perceived action, thus, motion. And, importantly in terms of my work, everything that we do or just think–or even if we seem to do nothing–feels something. Thus, it has an affect.

My work aimed at understanding the relationship between affect and conceptual metaphor, how metaphor participates in conceptualizing the affects emerging from real or imagery experience of motion. The research questions for addressing this were:

- Which sounding features appearing in a short excerpt of italo disco are the strongest candidates for especially meaningful affective reactions in me, and what these affects would be like?

- What are the image schemas and resulting conceptual metaphors that induce the affective reactions related to the sounding features of the first research question, and how the emergence of affect can be explained by means of them?

The first question was answered in chapter 3, where 13 sonic objects (see table 3) were delineated from an excerpt of Roy's "Shooting Star (Six Times)" (Discogs 2019b), an italo disco song that has been an effective trigger of my musical imagery since the end

of the 1980's. The entity-likeness of the sonic objects was ascribed to perceived action/motion, and partly also to the associated feeling of tension, in terms of metre, rhythm, tonality, pitch and timbre. The resulting affective reactions were to some extent addressed already in chapter 3, but not until in chapter 4 with the determination of the image schemas and conceptual metaphors was it possible to examine them in more detail. The various, generally positive and sometimes also clearly arousing affects were found out to result mostly from metaphoric processes initiated by the activation of the FORCE image schema, or its derivatives. Consequently, there is an apparent connection between this pervasive image schema and the so-called musical forces.

The initial motivation for the topic of this thesis arose from my desire to examine the underlying causes of my music preference. I wanted to find out whether there's something in my "mental landscape" that results in listening to certain kind of music. Because of this I found the notion of musical landscape particularly fitting to my analytical needs. In addition, dealing with it made me realise that it's hardly a coincidence that we have invented the concept of mental landscape. Everything speaks for an evolutionary origin of our conceptual system. In my opinion, the research questions were successfully selected and formulated to facilitate the charting of the experiential elements of my personal musical landscape from the point of view of embodied cognition. Also, the questions were successfully answered. Thus, the sonic objects, image schemas and conceptual metaphor were established, and they seemed to suggest that I'm inclined to music that communicates energetic, arousing affects. Obviously, italo disco is this kind of music for me. It appears to respond to a psychological need of having powerful experiences, of feeling dynamic, efficient and determined. These are qualities that are often associated with strength and courage–the personal characteristics that–especially in my teens when I heard italo disco for the first time–I felt missing from me. Thus, my penchant for italo disco may be at least partly compensatory.

As noted in chapter 1, there's no earlier research on my exact topic, and italo disco research is generally very scarce, almost non-existent. However, studies concerning the embodied nature of music have been made. This, and the more general (mostly linguistic and philosophical) research about embodied cognition and conceptual metaphor was utilised in my work. Hence, it can be said there was a demand for my

work, whose relevance is enhanced by the fact that there is substantial and growing evidence supporting the notion of embodied cognition and its manifestations such as conceptual metaphor and the musical forces (see e.g., Johnson 2007; Larson 2012: 2). Thus, the theories presented in this work have a lot to offer to all areas of music research, not least due to their interdisciplinary nature.

However, my work has its limitations, too. They concern the most central theoretical framework used, the conceptual metaphor theory (CMT), as well as the adopted methodology. Despite becoming the dominant perspective on metaphor and, due to this, enormously influential within many academic disciplines, CMT has been widely criticized, too. Consequently, it hasn't gained general acceptance. In his doctoral thesis, Andrew Friedman (2014) presents a variety of methodological and philosophical problems regarding the conceptual metaphor and image schema theories of George Lakoff and Mark Johnson. Friedman directs significant part of his criticism at how Lakoff & Johnson justify their theories. According to him, the theories are often based on circular reasoning. For example, Lakoff & Johnson suggest certain conceptual underpinnings for grouping of linguistic expressions, but the problem is that the underpinnings have been initially determined based on the very linguistic expressions. Friedman accuses Lakoff & Johnson of general vagueness, inconsistency and incoherence, too. Furthermore, he notes that their theoretical system is pliable and amenable to the extent of being both non-falsifiable and non-verifiable. Thus, it can't be proved wrong any more than right. However, as pointed out by Gibbs (2009: 15), criticism of CMT is sometimes based on misunderstanding, even though it is often legitimate, too. (Friedman 2014: 23, 35, 60; Gibbs 2009.)

The risk of circular reasoning applies to my research method, too. I try to establish the components of my experience utilising the very conceptual system (thus, my cognition: thinking, memories, perceptions etc.) that initially creates the experience. This is a potentially serious methodological problem. As noted by Gibbs, it is evident that introspection can't capture the fast, unconscious mental processes responsible for immediate metaphor production and understanding. Furthermore, the researcher's intuitions about the ingredients of her cognitive unconscious may be biased due to her prior knowledge about the related theories. (Gibbs 2009: 21.) In fact, while conducting the introspective analyses, it occurred several times to me that the real reason for me

to draw certain conclusions about my personal experience and its origins may be that I know already in advance what the applied theories predict.

Furthermore, the overall complexity of the topic posed a challenge to the execution of my work. Despite my usage of several complementary theories (or, in fact, maybe because of this), the highly abstract and subjective nature of (musical) experience and its conceptualisation made the conduction of the analyses at times painfully slow and tentative. This was the case not least due to the difficulty of deciding on the exact source of a certain feeling or sensation. I tried to make this easier by concentrating only on a relatively short passage of music, and, in chapter 3, by focusing only on one of its timescales at a time–to the extent this can really be done. It became apparent that it is impossible to know at which perceptual level of musical texture and timbre the experiential focus of attention lies at a given moment. Because of this, the analysis was in constant danger of turning recursive, meandering, and too speculative.

However, in my opinion, the limitations aren't serious enough to render the research setting and the results of my work baseless. Despite the critique, there's plenty of evidence on behalf of my theoretical framework–especially regarding the embodied nature of cognition. Furthermore, CMT wasn't the only theory used. In addition, the methodological shortcomings aren't necessarily shortcomings at all, because the objective of my work was to explore my own personal musical experience in particular, not to generalise it to other people. Personal experience is always subject to interpretation, which, in fact, can be suspected to be a circular process. In chapter 2.2., Maurice Merleau-Ponty was cited with respect to our relationship with the world. According to him, the fact that the world and us are not separate entities leads to a circle, to a middle way between the inner and outer. (Merleau-Ponty 2002 [1962]: x–xi.) My aim in this work was to utilise conceptual metaphor to close this gap between the inner and the outer, to address the circular continuity between self and world where the self (thus, I) studies the world which the self is a part of. Consequently, there is a constant "negotiation" going on with our conceptual system and its target, itself in the world. The negotiation is an endless source of affects that arise in this process of trying to find coherence and meaning.

My work provided a versatile overview on the study of musical experience as an embodied phenomenon. However, due to the limitations and the fact that the field of inquiry is still in its infancy, the results should be considered highly subjective and tentative. Particularly more experimental research is needed to address the problems arising from intuitive introspection (see Gibbs 2009: 22). This is especially important if the goal is to study larger number of people, thus, to provide information about the differences and similarities in their conceptual systems that may result, for example, from their cognitive styles, personalities, and personal and cultural background. However, advancements are being made. Different brain imaging techniques can be expected to increase our knowledge also about our subjective experience at an accelerating pace. I would like to take my possible future research in this direction.

In addition, I'm interested in exploring how modern information technology could be harnessed to the collection and analysing of the information pertaining to embodied personal musical experience. Research already exists where, for example, musical gestures forming "action chunks" (thus, music-related actions forming experiential entities) are extracted and classified from corresponding audio and video files utilising computer algorithms (see e.g., Godøy et al. 2012). In the future, applications in the fields of artificial intelligence (AI), machine learning (ML) and the so-called Semantic Web (see W3C 2020) might prove valuable in dealing with the potentially vast amount of data accumulating from different sources (e.g., brain imaging scanners, personal sensors, musical audio files, databases of music-related actions, accounts of individuals' personal information, conceptual metaphor repositories [such as MetaNet 2020a]). Finally, regardless of the adopted paradigm, italo disco is without question worth further research.

RESEARCH MATERIAL

MP3 file

Roy (1987) *Shooting Star (Six Times)* [vinyl 12", 33 1/3 RPM]. Memory Records MEMIX 062.

Music notation

Picture 1 created by the author using Logic Pro X software based on an excerpt of the MP3 file.

Spectrogram

Picture 2 created by the author using Sonic Visualiser software (Cannam et al. 2010) based on an excerpt of the MP3 file.

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