Dizziness of Freedom:

The influence of maladaptive anxiety on metaphorical meaning-making and the Motivation & Sedimentation Model (MSM)

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Abstract

This thesis investigates and compares metaphors used in the context of psychotherapy by people who experience various forms of maladaptive anxiety and anxiety disorders (*anxiety sample*, AS) and people who experience stress caused by various events in their lives (*stress sample*, SS). It is grounded in a cognitive-semiotic theory called the Motivation & Sedimentation Model (MSM), which defines three levels of meaning-making. According to the model, metaphors are shaped by pan-human, non-linguistic experience and the capacity for analogy-making on the Embodied level, linguistic norms and cultural conventions on the Sedimented level, and arise on the Situated level of creative, spontaneous, and context-dependent semiotic activity. The thesis reviews various theories of metaphor, which arguably correspond to the three levels described by MSM, and utilizes them for a nuanced and multifaceted perspective on metaphor.

The empirical study consisted of an analysis of a sample of 10 transcripts of psychotherapy sessions concerning the topic of anxiety, and a sample of 10 psychotherapy sessions concerning stress. A new identification procedure designed in lines with the MSM definition of a metaphor and the Pragglejaz metaphor identification procedure (MIP; Pragglejaz, 2007) is proposed, along with a categorization procedure classifying metaphors according to their degrees of motivation by the Embodied and the Sedimented levels of meaning-making.

The results of the empirical investigation showed a significantly stronger role of the Sedimented level for the metaphors in the stress sample than the anxiety sample, and a marginally significant difference in the amount of novel metaphors identified in the anxiety sample as compared to the stress sample. The results suggest that lived experience of an anxiety disorder or other forms of maladaptive anxiety affects the metaphorical meaning-making as it manifests itself on the Situated level. Furthermore, as a result the conceptual and the empirical investigations of the topic, this thesis takes a step forward in operationalizing the notion of *metaphoricity* and suggests some additional factors affecting metaphorical meaning-making and its manifestations.

Keywords: Anxiety, Cognitive semiotics, Metaphor, Metaphor identification, Metaphors in psychotherapy, Motivation & Sedimentation Model, Phenomenology.

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Chapter 1. Introduction

Over the last forty years the scope of research on metaphor has become increasingly broad, leading to the emergence of many competing contemporary theories of metaphor (Lakoff, 1993; Steen, 2011; Steen, 2017; Gibbs, 2017; Zlatev, Jacobsson, Paju, in press). These theories differ in the definitions they propose and in the interpretations of various metaphor-related phenomena. They also provide different answers to the question: *where are metaphors to be found?* In an attempt to introduce more conceptual clarity to the field – in which many scholars seem to be invested not only professionally, but also emotionally – Zlatev et al. (in press) formulated a set of desiderata for a contemporary theory of metaphor. In brief, according to these authors, a good candidate for "the" contemporary theory of metaphor must successfully address the issue of metaphor being a matter of both communication and cognition, explain its universal and culture-specific aspects, as well as the static and dynamic sides of metaphorical meaning-making. It must moreover be applicable to all major semiotic systems, that is, to language, gesture, and depiction, and finally – exhibit conceptual clarity, providing a set of well-formulated and well-operationalized definitions.

As an example of a theory that seems to meet these requirements, Zlatev and colleagues present a recent *cognitive-semiotic* theory called the Motivation & Sedimentation Model, hence MSM (Blomberg & Zlatev, 2019; Devylder & Zlatev, 2020; Zlatev et al., in press). The proposed model defines three levels of meaning-making, here applied specifically to metaphors. The primary motivation for metaphor use arises from pan-human, non-linguistic, experience on the Embodied level, including the human analogy-making capacity (Itkonen, 2005). For example, we may suppose that at some point in time, for some particular person, the feeling of uneasiness in the stomach area appeared to share some qualities with the fluttering wings of butterflies. Perhaps, this person knew the sensation of having a butterfly land on their arm or could imagine the sensation knowing how soft butterfly wings are, and what is the tactile sensation of soft, delicate objects fluttering against their skin.

The secondary motivation for a metaphor is a result of conventionalization of some metaphorical expressions within linguistic and cultural communities on the Sedimented level. To connect to my example – most users of English know the expression 'to have butterflies (in one's stomach)', and very likely they have heard, read and used this expression numerous times throughout their lives, in a number of contexts – before their best friend's first date, a job

interview, or at the amusement park. They know there is an expression for this tingling sensation in the abdomen often associated with nervousness or anticipation.

The actual metaphor (as understood from the semiotic point of view) arises on the Situated level, where it is more or less creative, spontaneous and where it reflects the specific context in which it is relevant. Thus, the actual use of the expression 'to have butterflies (in one's stomach)' may vary, as in examples (1-4):

(1)   Is like butterfly-type of thing...

(2)   I get that kind of like butterflies in my stomach ...

(3)   So just stay with that for a little bit as though you're very curious about the sensation of butterflies in the stomach.

(4)   So just - let's just lift these weights for a few more moments together and just stay with it and watch what it does, watch what the butterflies do and what your heart does.[1]

If successful on this level of communication, the metaphor becomes subject to conventionalization. In consequence, such conventionalized, normative, culture-driven meanings become *sedimented* and thus more available for future use, through the secondary motivation described above.

However, actual bodily experiences, as much as they can be subject to empathy, are not really identical across people as people have different bodies, and experiences can be altered by various physical and psychological conditions. While it is safe to say that all people experience anxiety, those who are diagnosed with *anxiety disorders* experience it much more frequently, making the sensations related to fear, anxiousness and panic play an important role in their experiential *life worlds* (see 2.2.3). Thus, the motivation for this study is to have a closer look on the issue whether and, if so, how "atypical" bodily experiences could result in potentially "atypical" metaphorical expressions.

The accomplishment of this goal requires the use of material derived from a context where novel, unconventional and highly personal way of communicating is welcome and encouraged. A context, where expressing one's individual experience is considered more important than following linguistic norms. Finally, what is required is a context, in which the interlocutor is

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[1] These are authentic examples, collected from the PsycTherapy database (see 3.2)

empathetic enough to do their best to understand the speaker as faithfully as possible. The context of *psychotherapy* seems to meet these requirements. Moreover, in the field of psychotherapy it is a widespread assumption that psychotherapy clients use metaphors to express their "hard-to-describe views of self, others, and/or situations" (Tay, 2017, p. 179). For these reasons, this master's thesis analyzes anonymized transcripts of psychotherapy and counselling sessions. Its main aim is to test predictions following from MSM, by applying it to the study of metaphors identified in the transcripts from the conversations between psychotherapy/counselling clients and therapists/counsellors.

The current research is guided by the following *research questions*:

1. Does bodily experience of anxiety affect the emergence and spread of metaphors?
2. How is bodily experience of anxiety manifested in on-line metaphor use?
3. Is there a considerable difference in the degrees of motivation by the Embodied and the Sedimented level in metaphors produced by highly anxious people and people who experience average levels of anxiety?

The thesis has the following structure. Chapter 2 presents the theoretical background in a top-down manner, starting with the field of cognitive semiotics, then reviewing some prominent metaphor theories, and finally presenting the Motivation & Sedimentation Model as a dialectical synthesis combining different aspects of metaphors. A short section provides a review on previous work on metaphors in psychotherapy and a brief overview on anxiety from a psychiatric perspective. Based on these theoretical considerations, a number of general hypotheses on the relationship between anxiety and metaphorical meaning-making is formulated. Chapter 3 describes the methods employed and operationalizes the hypotheses. Chapter 4 presents the results of the study and Chapter 5 provides a discussion of the results. The final chapter concludes the thesis by returning to the research questions stated above and closing the "conceptual-empirical loop" of cognitive semiotics.

Chapter 2. Theoretical background

2.1. Introduction

The aim of this chapter is to introduce the theoretical framework for the present thesis. It is presented top-down starting from the transdisciplinary field of cognitive semiotics, which provides the theoretical grounds for this thesis. Among the main features of cognitive semiotics, the concepts of *conceptual-empirical loop* and phenomenological *methodological triangulation* are introduced and discussed in connection with the topic of this thesis. Then I present phenomenology as a philosophical tradition, which to a large extent influenced and motivated the emergence of cognitive semiotics. Further, I discuss some of the competing contemporary theories of metaphor, which focus on different aspects of the phenomenon of metaphorical meaning-making, and present a possible dialectical synthesis of some main ideas of these theories, the Motivation & Sedimentation Model (MSM). Finally, considering the topic of this thesis, the notion of anxiety from a psychiatric perspective is discussed, and the general hypotheses of the study are formulated.

2.2. Cognitive semiotics

Cognitive semiotics is, in short, the transdisciplinary study of meaning-making. Its transdisciplinarity stems from the fact that cognitive semiotics owes much to the fields of semiotics, linguistics and cognitive science, being at the same time more than just a combination of those fields (Zlatev, 2015, p. 1044). First, cognitive semiotics is not intended to be merely a subfield of semiotics; while the classical subfields of semiotics, such as social semiotics or text semiotics, are meant to cover a specific topic, or a specific area of research, cognitive semiotics, incorporating much from other disciplines, is not a specialization, but rather an extension of semiotics. Second, unlike linguistics, the scope of the inquiry within cognitive semiotics includes not only specific semiotic systems classifiable as languages, but also other sign systems (gesture, depiction) and signaling systems, such as laughter and crying, including such used for communication by non-human animals. Finally, despite having a similar scope of interest and some methods in common, cognitive semiotics is not an equivalent to cognitive science. The main difference is that cognitive science is mostly associated with a physicalist (e.g. neural) perspective on the mind, third-person empirical methods, and a computational approach to mind, while cognitive semiotics is firmly grounded in humanities, having the philosophical tradition of phenomenology as one of the most important sources of inspiration

with regards to its focus on intentionality, intuition and the dependence of meaning-making on consciousness (Zlatev, 2008, 2015; Sonesson, 2009, 2013). Zlatev (2015, p. 1057-1063) proposes a set of features characteristic for research in the field (including the present thesis): transdisciplinarity, influence from phenomenology, dynamism of meaning, phenomenological methodological triangulation, and the conceptual-empirical loop; some of these will be further elaborated on.

2.2.1. Conceptual-empirical loop

The conceptual-empirical loop resembles the idea from the philosophy of science, that theoretical considerations motivate empirical research which in turn can inform further theoretical consideration, and so on. This, however, is not limited to the idea of testing hypotheses and theory construction, as empirical investigations in cognitive semiotics often lead to (re)formulating definitions, and thus understanding notoriously ambiguous concepts, such as *meaning*, *sign*, *language*, or *intersubjectivity* (Zlatev, 2015, p. 1058). Cognitive semiotics values conceptual clarity over the usage of well-established, but often vague, terms. Thinking about the research as a continuous loop between conceptual and empirical investigations, including the operationalization of key concepts, allows to avoid the ambiguity that is often associated with such "macro" concepts, including that of metaphor.
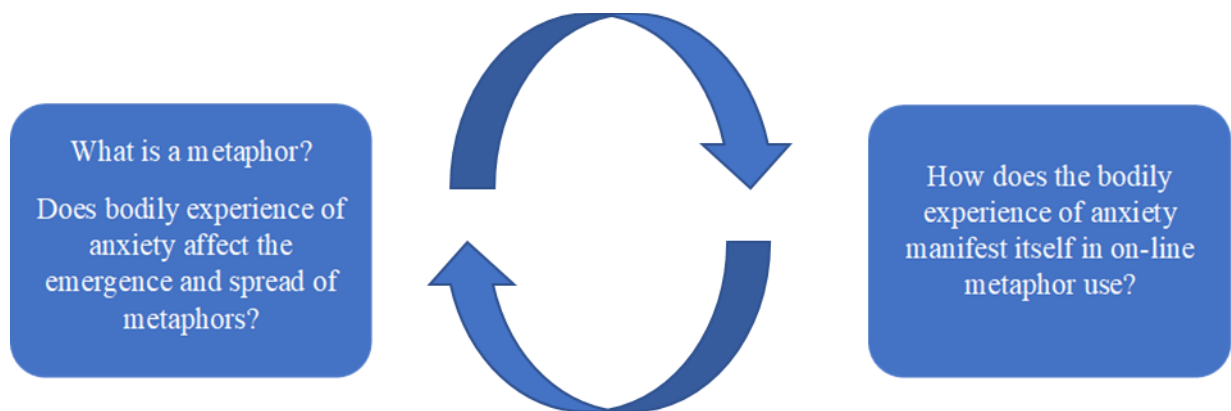
Figure 1: Illustration of the conceptual-empirical loop applied to the study of influence of bodily experience on metaphorical meaning-making in communication, adapted from Zlatev (2015, p. 1058), and Torstensson (2019, p. 5).

In the present thesis, the conceptual-empirical loop is applied as follows. Starting with conceptual considerations, *metaphor* is defined in line with the Motivation & Sedimentation Model in Section 2.4. Then, the empirical exploration of metaphor use in interaction helps answer the research questions and these answers result in some new insights about what metaphors are, which would close the loop and motivate possible future research.

2.2.2. Phenomenological methodological triangulation

Cognitive semiotics acknowledges a particular kind of methodological triangulation which in line with phenomenology acknowledges the validity of first-, second- and third-person methods and strives to integrate them within a single project (Zlatev, 2015, p. 1059), as shown in Table 1, with applications from the present study, further presented in Chapter 3.

Table 1: Three epistemological perspectives with corresponding methods applied to the study of influence of bodily experience on metaphorical meaning-making in communication, adapted from Zlatev (2015, p. 1059).

Perspective	Method	Application
First person	Systematic researcher intuition, Introspection	Metaphor identification according to systematic intuitions, Bodily experience
Second person	Empathy	Metaphor categorization
Third person	Corpus investigation, Quantification	Quantitative analysis of relationships between different metaphor categories and different groups of people producing the metaphors

Why is phenomenological methodological (in short – *pheno-methodological*, Pielli & Zlatev, 2020) triangulation so important for cognitive semiotics, and for the present study? Firstly, the conscious act of intuition provides a basis for all kinds of judgements, linguistic or non-linguistic (Itkonen, 2008; Zlatev & Blomberg 2019). The ability to make such conscious judgements is essential for identifying metaphors and for differentiation between conventional metaphors, and the more novel ones. Another kind of conscious act, namely introspection, led to the idea that lived bodily experience of an anxiety disorder may affect metaphorical meaning-making. Another important aspect that is methodologically central is empathy, where consciousness is directed at other human beings, allowing spontaneous recognition of their emotional states (Zahavi, 2014). Finally, experimentation and detached quantification provides a distanced, third-person perspective on the data. This emphasis on *perspective*, in all these cases, and not the mind-independent "objectivity" of the data, and the acknowledgement of the primacy of first- and second-person perspectives in study of meaning-making is inspired by the philosophical school of phenomenology briefly presented in the following section.

2.2.3. Phenomenology

As a school of thought, phenomenology was founded in the beginning of 20th century by Husserl, initiated by his work *Logical Investigations* (Sokolowski, 2000, p. 2). The phenomenological tradition, being closely related to that of existentialism (sharing some representatives, such as Jean-Paul Sartre and Maurice Merleau-Ponty among others) puts human experience in focus. Many representatives of cognitive semiotics consider phenomenology not only a source of inspiration, but also a method of doing science – especially when studying human beings (Zlatev, 2016, p. 568; Sonesson, 2009, p. 127). From this point of view, phenomenology can be seen as a metatheory. What are its implications? Firstly, phenomenology puts an emphasis on the fundamental role of conscious experience, and the fact that any scientific observation, any objectivity, is accessible to human beings only through their consciousness (Zlatev, 2016, p. 560). In such a way, any knowledge results from and is presupposed by an act of consciousness.

One of the most central concepts in phenomenology (and, not surprisingly, in cognitive semiotics) is *intentionality* understood as the relationship between the act of consciousness and its object (Sokolowski, 2000, p. 8), or more generally as "openness to the world" (Merleau-Ponty, 1962; Zlatev & Blomberg, 2019). The latter description has the advantage of not limiting the notion of intentionality just to directedness towards a particular object. In a broader sense, as proposed by Zlatev (2018), even the experiences that as such are not object-directed (psychological states e.g. anxiety or bodily sensations e.g. itchiness) are intentional, as they "point beyond" themselves and "affect how we perceive things and situations, how we react, and how we exist in the world more generally" (Zlatev, 2018, p. 3). This kind of intentionality, arguably more basic and more foundational than the object-directedness, is called *operative intentionality* (Husserl, 2001; Merleau-Ponty, 1962) and can be said to provide our "pre-conscious access to the world" (Zlatev, 2018, p. 3).

Phenomenology and cognitive semiotics seem inseparably interwoven. As proposed by Zlatev "[m]eaning is not properly speaking "in" the mind but consists in the relationship between intentional act (e.g., in perception) and intentional object" (2016, p. 562). Thus *perception* is meaningful, as it involves a conscious act about the present objects; likewise *imagination*, as a kind of intentionality of objects being absent or nonexistent. *Intuition* becomes meaningful as an act of consciousness directed towards intersubjective reality (Itkonen 2008; Zlatev &

Blomberg 2019). This perspective on the notion of meaning makes it nearly synonymous with the one of intentionality, as described earlier.

A special kind of intentions that bring meaning to human languages and other semiotic systems, are *signitive intentions* (Sokolowski, 2000, p. 78). Signitive intending is not to be identified with perception or imagination, as unlike these it "chops" the *life world* into discrete chunks, which can be then systematized (Sokolowski, 2000, p. 79). Signitive intentions are complex because they involve a perceptually present sign redirecting intentionality towards its referent, the actual intentional object (Zlatev, 2016, p. 562). Here, we arrive at a phenomenology-derived definition of the sign. Sonesson defines this central notion as an intentional structure consisting of two distinct parts characterized by a double asymmetry – when one part (expression) is perceptually present, the other (content) is thematized, that is – more in focus. Moreover, the sign and its intentional object (referent) are clearly differentiated (Sonesson, 2013, p. 280). As pointed out by Zlatev, this definition implies that there are in fact three parts of this structure, the third, implicit one, being a conscious subject for whom the relationship between the sign and the referent holds (Zlatev, 2010, p. 16).

Another phenomenological notion that bears importance for both the field of cognitive semiotics, and for this thesis is that of *life world*. Sokolowski presents the concept of life world as an opposition to the concept of real, objective scientific world that is subject to description of natural sciences. Or rather – this scientific objective world of atoms and particles is constructed on the basis of a human experiential life world; natural sciences "transform the objects of experience into idealized mathematical objects" (Sokolowski, 2000, p. 147). The role of phenomenology then, is to "bracket" or temporarily put aside what we think we know about the world and explore it as it is experienced. The human life world is inhabited by the community of intersubjective human beings, who are able to share their experiences with each other, and is thus not purely subjective. It is not only the world of perception, but also the world of signitive intentions - including languages, cultures, and norms. And as Sokolowski describes, the bodies immersed in the life world are not merely "containers" for minds – they express the minds and the different points of view on how the world is (Sokolowski, 2000, p. 154). The life world is then both real and dependent on the subjective experiences of the members of a community. This, however, does not lead to a contradiction, as subjective experience can be intersubjectively shared, as in empathy (Zahavi, 2014). This idea has its analog in evolutionary anthropology and comparative psychology – as argued by Tomasello and colleagues, the human species is not only characterized by its ability to "read" the intentions of others, but even more

importantly by its motivation to share subjective feelings and experiences with others, not necessarily to accomplish a goal, but because "it feels good to do so" (Tomasello et al., 2005, p. 726).

This idea of intersubjectively sharing subjective experiences is one of the most important ones in the current thesis. Some experiences related to anxiety are very likely to be present in our intersubjective life world, as they constitute important parts of many people's daily lives. Some of them might have gained their conventional ways of description. Other experiences, not as common and present predominantly in people struggling with various kind of anxiety disorders, do not seem have a similar share in the collective socio-cultural life world. If so, they might lack such conventional expressions. This implies that to be intersubjectively understood, they would have to be expressed in a more novel, creative way.

Finally, the two last phenomenological notions that are particularly important for the current thesis are those of *sedimentation* and *motivation*. These form a dialectic that provides both novelty and relative stability to our lives, a dialectic between relatively stable structures and emergent dynamic processes/activities in motion. All human activities are *motivated* rather than arbitrary or determined: they originate from various constraints given by experiential structures, like those of the different kinds of intentionality, but are not fully determined by them. Emergent, motivated processes then become *sedimented*, i.e. become more stable and gradually turn into norms that motivate and constrain future activities; first as context-dependent situated norms, and consequently as norms shared by larger communities, as it is in the case of linguistic norms (Zlatev & Blomberg, 2019, p. 94). Sedimentation can be, moreover, described on two levels – the individual, and the historical level. The former concerns the sedimentation of norms within the scope of a lifetime, while the latter concerns broader, generative processes causing changes of norms across generations (Zlatev, 2018). The notions of motivation and sedimentation reappear in the Section 2.4, where they are applied to a model of metaphorical meaning-making employed in the current thesis.

2.3.   Different theories of metaphor

This section provides a brief description and review of some recent theories of metaphor. The choice of the theories presented is neither "political" (insofar that the goal here is not to give verdicts about which theory of metaphor is best), nor random, as the aim is to present theories that focus on different aspects of metaphorical meaning-making. These theories do not stand in a firm opposition to one another and can be argued to complement one another. Further, as

shown in the Section 2.4, all these theories could be used as inspiration for a multifaceted theory of metaphor, such as MSM.

2.3.1. Metaphors in mind

Conceptual Metaphor Theory (henceforth, CMT) was introduced in 1980 by George Lakoff and Mark Johnson in their influential book *Metaphors We Live By*, which became a motivating factor for the emergence of the new wave of metaphor research. In the second edition of *Metaphor and Thought* (Orthony, 1993) Lakoff referred to this as the "contemporary theory of metaphor", aiming to distance it from classical rhetorical theory where metaphors are (said to be) special devices, figures, that are used carefully and deliberately to cause a specific effect on the audience, and argued against the latter:

> [T]he classical theory turns out to be false. The generalizations governing poetic metaphorical expressions are not in language, but in thought: They are general mappings across conceptual domains. Moreover, these general principles which take the form of conceptual mappings, apply not just to novel poetic expressions, but to much of ordinary everyday language (Lakoff, 1993, p. 1).[2]

As reflected in the citation given above, one of the claims most crucial for CMT is that metaphors are primarily not in language but in conceptual systems and that they constitute our conceptualizations of abstract concepts such as time, object, change, purpose and causation. It is important to note that in CMT there is a clear distinction between the notions of *metaphor* and *metaphorical expression*. The former refers to a "cross-domain mapping" in the conceptual system, and the latter to a surface realization of this mapping (Lakoff, 1993, p. 203). Moreover, without stating it explicitly or making it an important point, CMT implies that conceptual metaphors can be expressed in various semiotic systems – not only in language, but also in depiction and gesture.

Early evidence in favor of CMT concerned generalizations governing polysemy, inference patterns, novel metaphoric language use and patterns of semantic change (Lakoff, 1993). Based on everyday English expressions, one could claim that one domain of experience, a *target*

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[2] In can be argued that this perspective does not do the traditional rhetorical theory justice. The idea that some figures are not bound to their specific expressions and may be expressed using various different rhetorical devices is present in the classic rhetorical manual *Ad Herennium*, at least in rudimentary form (Fahnestock, 1999, p. 8). The Roman rhetorician Quintilian suggested that figures of thought "belong in the pragmatic or situational and functional dimensions of language" and constitute the ways to express "intentions, interactions and attitudes" (Fahnestock, 1999, p. 10).

domain, is commonly understood in terms of a different domain of experience, the *source domain*; there is a *mapping* between the two, which is possible because of a set of "ontological correspondences" between these two domains (Lakoff, 1993, p. 207). In the conceptual metaphor LOVE IS A JOURNEY[3] lovers correspond to travelers, their relationship corresponds to the vehicle, their common goals correspond to their common destination, and the difficulties they approach in their relationship correspond to the impediments they have to face during their travel. According to Lakoff (1993, p. 207):

> The mapping is tightly structured. There are ontological correspondences, according to which entities in the domain of love (e.g., the lovers, their common goals, their difficulties, the love relationship, etc.) correspond systematically to entities in the domain of a journey (the travelers, the vehicle, destinations, etc.).

Much more recently, Gibbs (2017) has presented an "updated" version of CMT, which addresses some of the criticism directed towards the theory and absorbs some ideas generated by other theories. He aims at making CMT less abstract and more dynamic – referring to conceptual metaphors not as stable mappings, but as "the rich set of mental mappings that characterize the relationship between the target (…) and source (…) domain of knowledge" (Gibbs, 2017, p. 18).

This version of CMT still struggles, however, to define the *conceptual domains* that are essential for its notion of metaphor. To avoid being accused of implying that mappings are static, Gibbs points out that they "arise because of metaphor" (Gibbs, 2017, p. 26). Unfortunately, he fails to describe what that means exactly. Are mappings drawn in the moment of producing/perceiving a metaphor? Are they motivated by the existence of a metaphor rather than the other way around? Following the proposal of *primary metaphors* (Grady, 1997), Gibbs claims that the most basic metaphors are motivated by strong and largely universal correlations perceived in everyday embodied experience (Gibbs, 2017, p. 29). Such primary metaphors can be combined in some larger metaphorical wholes. Further, Gibbs argues that conceptual metaphors have a neural substrate, which is neither fixed, nor static, but reflects the way in which experiencing one cross-domain correlation in the past makes it easier to notice it in the future. In sum, "metaphorical mappings are physical neural maps that bind sensorimotor

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[3] It should be noted that the schema <TARGET IS SOURCE> is not a conceptual metaphor itself but a label that makes it easier to refer to the mapping. This appears to be commonly forgotten, by both proponents (e.g. Jabarouti, 2016) and critics of the theory (e.g. Sonesson, 2019).

information to more abstract ideas as part of the neural ensembles existing in different regions of the brain" (Gibbs, 2017, p. 32).

This "updated" CMT may seem vaguer than the original. Notions like *mappings* and *domains* are still present but used interchangeably with less controversial terms. For example, Gibbs states that people have a strong "allegorical impulse", which makes metaphorical processes so very important to human thought in general (Gibbs, 2017, p. 50). On the other hand, Gibbs controversially proposes that the most basic conceptual metaphors are actually motivated by the part-whole relationships and contiguity, and should thus be regarded as metonymies, which contradicts the most basic assumptions of the original CMT.

Gibbs (2017) argues that metaphorical expressions, bodily experiences and thinking are all connected, which is a reasonable statement. However, the notion of conceptual metaphor as a "cross-domain mapping" remains problematic. Arguably, it can be understood as a metaphor itself (Greve, 2018, p. 316). It is uncontestable that we understand by comparing and integrating different parts of our experience, and that these cross-domain (with the word *domain* referring here to different aspects of knowledge/experience) relationships become entrenched in our memory, which makes them even more accessible for future use. This, however, does not seem to be specific to metaphors.

Nonetheless, CMT can be said to have highlighted an important aspect of human cognition, which seems to be corroborated by psychological and psycholinguistic studies[4], that is the fact that we integrate whatever knowledge we can in order to be able to make better use of it. Analogical processes that "map" cognitive structures from one domain of knowledge to another appear to be essential for this.

2.3.2. Metaphors in discourse

Another research perspective on metaphor that provides important theoretical grounds for this thesis is founded by the critique of CMT for overlooking numerous instances of form-specificity of metaphorical expressions and the role of social and linguistic experience as factors motivating the use of metaphors.

In an often cited paper on "discourse metaphor", Zinken (2007) contrasts together two opposing explanations of the concepts of analogy and metaphor (which Zinken uses interchangeably in

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[4] Such as Matlock et al. (2005) and Núñez, Motz, & Teuscher (2006) on TIME IS MOTION or Williams & Bargh (2008) and Citron & Goldberg (2014) on AFFECTION IS WARMTH.

the cited work, but are not interchangeable in this thesis, see Section 2.4). Either the *habitual analogies* or *analogical schemas* responsible for the occurrence of metaphorical expressions are pre-linguistic or they are based on linguistic experience and established by the abstraction of all the instances of their use in metaphorical expressions. On this basis, he criticizes CMT for not being transparent about the relationship between analogical schemas/conceptual metaphors on the one hand, and the use of metaphorical expression on the other. He argues that making an explicit statement about the direction of this relationship is crucial for a testable and falsifiable account on metaphors in language and thought.

To describe the process of creating analogical schemas Zinken mentions the notion of *encyclopedic knowledge* which consists of different "chunks" of modality-specific information which undergo coupling if they are appropriate in the same contexts repeatedly (Zinken, 2007, p. 448). This notion of encyclopedic knowledge is then related to the notion of *lexical concepts*, which are supposed to retrieve information based on the frequency of use, relevance in a given context, and finally possible analogy-based interpretations (Zinken, 2007, p. 448). According to Zinken, repeated use of a metaphor gives rise to a polysemous lexical concept, which weakens the process of meaning-construction by analogy (Zinken, 2007, p. 448).

The metaphors that are of special interest are *discourse metaphors*, which still need analogical schemas to be interpreted, but these schemas are easily evoked by specific linguistic forms. Based on these theoretical considerations, Zinken predicts that "different lexical items with similar or overlapping conventional usages, which belong to the same superordinate category, function differently as metaphor vehicles" (Zinken, 2007, p. 451). Testing this prediction with a corpus study, it was found that indeed different vehicles belonging to one semantic category – such as semantically related words like *ship* and *boat* – are used to convey divergent metaphorical meanings. Differences in their usage may be motivated by the presence of idioms, or other contexts of use, that invoke different metaphorical interpretations. On the other hand, Zinken admits that whether to categorize two metaphorical meanings as motivated by the same or different analogy, depends on the level of abstraction, but states that "it cannot be decided on the grounds of verbal behaviour data whether such general mappings are a psychologically real additional layer of analogical schemas, or whether they are a post-hoc artefact of sorting utterances on the part of the researcher" (Zinken, 2007, p. 461).

A similar approach that takes a closer look at form-specificity of some metaphors is described by Svanlund (2007), who aims at investigating three important aspects for metaphor

conventionality: (a) the gradability of conventionality, (b) the relationship between lexical and conceptual conventionality, and (c) the systematicity of conventional metaphors (Svanlund, 2007, p. 49). Svanlund notes that while CMT aimed to emphasize the role of experience in meaning-making (or conceptualization), it failed to describe the experience in the first place, suggesting (even if unintentionally so) that the experiential motivation for metaphors stemmed from an isolated personal experience of a common physical world. As he puts it, according to CMT "[m]etaphors seem to emerge more or less automatically from our cognitive dispositions and our encounters with the world" (Svanlund, 2007, p. 50). This conceals the fact that human beings experience not only the pure physicality of the world, but also socially shared norms and a multitude of linguistic encounters embedded in various contexts. On this basis Svanlund argues that the psychological entrenchment of metaphors "is not a result of underlying physical experience per se", but rather "a reflection of the *usage* of metaphors" (Svanlund, 2007, p. 51, *original emphasis*).

Thus defined, conventionality turns into an empirical problem, which cannot be sufficiently investigated by the analysis of inference patterns of seemingly natural collections of metaphorical expressions (Svanlund, 2007, p. 52). The gradability of conventionality and its lexical and conceptual aspects need to be investigated by looking at the actual, attested acts of language use. A single speaker cannot be aware of all the linguistic variation present in their linguistic community, and the detached intuitions of a single language user cannot account for all the collocations at play in language use (Svanlund, 2007, p. 56). On the other hand, a corpus-based study can provide a more accurate picture on how metaphorical expressions are used, what are their collocates, and what it implies for the *strength* of a metaphor.

On the basis of these considerations Svanlund (2007) introduces the notion of *metaphorical strength* to describe the degree to which an expression is used metaphorically, which he describes as "the ability of conventionalized lexical metaphors to activate concepts from the source domain" (ibid, p. 55). The methodology he proposes concentrates on lexical associations of certain expressions that tend to be used metaphorically, which can inform a researcher about the strength of metaphorical expressions. This is exemplified with two semantically related Swedish nouns, namely *vikt* and *tyngd* ('weight'). The analysis of different kinds of collocates of these nouns indicates that they differ in their metaphorical strength – while *tyngd* seems to be a "strong" metaphor, with a certain overlap between constructions and collocations used figuratively and literally, the metaphorical uses of *vikt* are limited to a number of stereotypical phrases clearly distinguishable from the literal uses of the word. Svanlund notes that

motivations for metaphors are manifold and complex, including the history and the lineage of use of a specific word and states that "[m]any lexical metaphors have some semantic properties that derive from neither source nor target domain" (ibid, p. 72), which weakens their metaphorical strength. Svanlund lists processes that can weaken the metaphors – schematization, transformation of concepts, and addition of elements to the stereotypical expression – all of which have their roots in socially shared discourse rather than cognition. The moment an expression loses its association with its former literal meaning (as the adjective *viktig* 'important' might have lost its habitual association with the noun *vikt*), metaphor "dies". This leads Svanlund to the proposal that what CMT calls *conceptual metaphors* should be seen as cognitive tendencies, which interact with lexical conventionalization patterns, lexical developments and the like: "conceptual metaphors are inseparable from conventions of lexical items or other kinds of semiotic signs" (Svanlund, 2007, p. 85).

2.3.3. Metaphors in context

A third approach to metaphors focuses on what actually happens when metaphors are used in communication, how they are shaped by the context, and elaborated between interlocutors (Müller, 2017; Cameron 2018). As argued by Müller, this approach aims to go beyond the arguments and dichotomies in metaphor research, including those discussed in the previous sections. According to the dynamic perspective of Müller (2017), as long as a conventional metaphor is *transparent*, it can be experienced as such in communication and thought. Thus, the resemblance (or in semiotic terms: *iconicity*) between the two things compared must be identifiable for a language-user. Consequently, only opaque metaphorical expressions (such as *viktig* in Swedish or *pedigree* in English) can be classified as "dead". Müller introduces the (metaphorical) notions of *sleeping* and *waking* metaphors, the former being not sufficiently activated and experienced in the discourse, and the latter being characterized by their metaphorical meaning being foregrounded, that is – highlighted within the span of joint attention of the language users.

From this perspective, metaphoricity is defined as a spectrum, similarly to Svanlund and his notion of *metaphorical strength*, but unlike this, depending above all on the context. Müller presents four basic assumptions on metaphorical meaning-making: it is (a) based on "*seeing and feeling* one experiential domain in terms of another", (b) it constitutes a "triadic" relation between two experiential domains and the mediating process of *seeing-and-experiencing-in-terms-of,* (c) it is modality independent and (d) dynamic (Müller, 2017, p. 300).

Müller lists a number of processes as "tuning devices" that may increase the salience of metaphor in both verbal communication (*repetition, diversification, modification, extension, mixing, compounding of metaphors, literalization, and over-description*) and gestures (*gaze to gesture, enlarging and extending gestures, repeating gestures, holding gestures, or moving gestures into the visual center of attention*) (Müller, 2017, p. 301-302). She also describes three *foregrounding techniques* that profile a metaphor in discourse. The first basically comes down to the amount of metaphorical material, understood as both the number of instances of a given metaphor in a discourse and the amount of different ways of expressing it employed in a conversation. To explain this, Müller refers to the "cognitive-semiotic principle of the iconicity of quantity" (Müller, 2017, p. 302): the more in expression, the more in content. Another technique is highlighting the metaphorical meaning within the span of mutual or joint attention between the interlocutors. And a third is the integration between verbal expressions and gestures and other bodily expressions.

A similar approach, which provides promising methodology and terminology is that of *Discourse Dynamics* (Cameron, 2018). This categorically denies that metaphors are discrete objects and offers a perspective in which metaphors are subject to the ever-ongoing process of metaphorizing within the flow of social interaction. Cameron acknowledges that the flow of interaction is hardly accountable as observable data and proposes a solution: one can treat identifiable instances of metaphors not as separated objects, but as "traces of deeper instances of metaphorizing" (Cameron, 2018, p. 19). Moreover, there is more that contributes to this process than just verbal and gestural metaphors and other bodily expressions that accompany them; there are also unspoken memories, associations, and thoughts that one has while engaging in the discourse. Another assumption that is crucial to acknowledge in this perspective is that of holism: even by combining various components of a metaphorical discourse, one cannot create a whole picture, as the whole turns out to be greater than the sum of its parts (Cameron, 2018, p. 19).

Instead of using the notions of "source" and "target" (domain), Cameron writes about *Vehicles* and *Topics* respectively. The metaphor identification procedure starts from a phrase-by-phrase investigation of the transcribed material in search of potential Vehicles, which tend to manifest themselves by strong contrasts that affect the flow of discourse (Cameron, 2018, p. 23). Another step is to reconstruct the possible Topics of metaphor, being aware that the Topic of metaphorizing dynamically changes in the course of the conversation, as "metaphor Topic is flow, not object" (Cameron, 2018, p. 24). In other words, Cameron argues that when analyzing

discourse metaphors, it is more productive to identify recurrent Topics, which can undergo some modifications throughout the discourse, rather than to focus on locally occurring Topic terms. Finally, through identifying *systematic metaphors*, defined as groups of semantically linked metaphor Vehicles, the analyst can create trajectories of verbal metaphors across the discourse. Cameron argues that most of the metaphorical expressions in discourse are relatively fixed by linguistic conventions, where they become stabilized and crystalized into *metaphoremes* and *idioms*. In other words, the conventionality of some metaphorical expressions stems from the general properties of communal, shared discourses, to which they may be adapted (Cameron, 2018, p. 25).

The formulation of metaphorizing proposed by Cameron has three important properties. First, it changes the direction of the relationship from 'A (target) is B (source)' to 'B (Vehicle) metaphorizes A (Topic)'. Moreover, she introduces the *tilde sign* ~ to illustrate the indefinable connection between the Vehicle and the Topic, motivating the use of this symbol by pointing out that is has been used traditionally to express both congruence and negation[5] which are at play when it comes to metaphors. Finally, she introduces the symbol M_{ing} which stands for the process of metaphorizing that occurs between V and T, giving rise to the formulation in (5):

(5) $V \sim T \rightarrow M_{ing}$ (Cameron, 2018, p. 27).

As systematic metaphorizing trajectories cannot be pinpointed by a simple one-to-one mapping, Cameron proposes using short summaries that reflect different attributes of metaphorizing Vehicle and Topic that are unveiled throughout the discourse (Cameron, 2018, p. 31), illustrated as follows:

> I offer an example from my current, sleep-deprived, reality. An image from a television documentary – visual and aural, recalled and re-imagined – of a dry desert of unending blankness 'comes to mind', resonating with how it actually feels in the daytime after multiple sleepless nights with the baby. It's not that I was consciously working with the Topic of how it feels after sleepless nights and trying to find an appropriate Vehicle to describe it. Instead the desert Vehicle latched on to, or activated, a Topic relevant to me (Cameron, 2018, p. 20).

Another metaphor theory that emphasizes context is that of Jensen (2018), inspired by Dynamical Systems approaches and recent advances in cognitive science. From this point of view, the notion of *embodiment* is understood not so much in terms of the physical properties

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[5] Corresponding to the notions of *iconicity* and *tension*, in the definition of metaphor proposed by MSM, see 2.4.

of our bodies *per se*, but by the fact that our bodies constantly interact with the environment. In line with the tradition of enactivism (Varela, Thompson & Rosch 1991), cognition is regarded as a part of this *organism-environment-system* (Jensen, 2017, p. 262).

This approach aims at studying "the entanglement of metaphoricity with the ingoing interaction" and regards metaphoricity as "embedded in supra-individual dynamics" (Jensen, 2017, p. 262). Jensen borrows the notion of *affordance* (Gibson, 1979), and adapts it to refer to the "[t]he immediate inter-bodily dynamics and possibilities for impulsive action and thought enabled by the interactive environment in the here-and-now of doing language" (Jensen, 2017, p. 257). In this manner, Jensen emphasizes different possibilities for negotiating and elaborating metaphorical meanings as afforded by different socio-institutional settings. Specifically, his study found that the context of a conversation held between co-workers in an office afforded for a rather simple metaphor that reoccurs as a stabilizing factor. In this example, the phrase *to sit down* which appeared multiple times during the conversation, gradually acquired a metaphorical meaning of 'talk', 'plan', or 'discuss' (Jensen, 2017, p. 265). On the other hand, the context of couples-therapy session, moderated by a therapist and having multiple conversational constraints (e.g. participants cannot interrupt each other or change the topic, they have to follow their turns and begin each turn with a phrase mirroring the preceding turn) afforded a more elaborated and negotiable metaphoricity. For example, the initial metaphor for feeling good as *running with the wind at one's back*, *releasing one's resources* and *getting a start* becomes elaborated by the other speaker as *starting the race* and *running fast* and *running without warming up*. As a result of inter-speaker negotiation of the meanings, some of these additional descriptions are left out, and the metaphorical trajectory undergoes reduction and becomes more precise (Jensen, 2017, p. 271-272).

In sum, the context-oriented and dynamic theories of metaphor add an important dimension to the phenomenon of metaphor. However, looking at metaphor as an on-going process, while useful, does not resolve the problem of what metaphor really is. While CMT could be criticized for focusing too much on our cognitive underpinnings for metaphor use, Jensen (and to some degree Müller) mostly state that metaphor is just one of the things we do in relation with the environment, as one of the functions of human mind which evolved as an adaptation to the complex, dynamic, bio-social environment. As with Gibbs's "updated" CMT (see 2.3.1), it risks making the concept metaphor much too general and vague.

2.4. The Motivation & Sedimentation Model

The theories presented in the Section 2.3 all provide interesting insights with respect to different aspects of metaphor, in different aspects of human life. However, they all seem to be somewhat one-sided and not sufficient to account for all the controversies present in the field of metaphor research, and to fulfill the desiderata for a comprehensive modern theory of metaphor, stated in Chapter 1 and repeated also below.

One of the problems appears to be the (implicit) agreement on CMT's notion of "conceptual mapping", which after forty years of research remains underdefined. Clear and precise definitions are required for intersubjectively valid operationalizations, research methods, and for formulating predictions that can be potentially falsified. Another underdefined notion is that of *metaphor* itself. To recapitulate, for CMT, metaphor is a "rich set of mental mappings that characterize the relationship between the target (…) and source (…) domain of knowledge" (Gibbs, 2017, p. 18). For Zinken, metaphor is a "habitual analogy" associated with a linguistic expression (Zinken, 2007, p. 448). For Cameron, metaphor is an on-going process of construing the Topic in terms of the Vehicle, a process that can be characterized by the presence of both similarity and contrast (Cameron, 2018, p. 27). For Jensen, metaphor is characterized by the "doubleness of meaning" established by a contrast (Jensen, 2017, p. 258), subject to contextual affordances. All these definitions may have something in common but differ so much to make them appear as if dealing with different phenomena.

As a reaction to this state of affairs in the field of metaphor research, the set of requirements that a successful theory of metaphor has to offer, formulated by Zlatev et al. (in press, p. 1), can be seen as unifying. In short, it appears to be possible to agree that a "contemporary theory" should be able:

> (a) to account for metaphor as a matter of both communication and cognition, (b) to explain both universal and culture-specific aspects, (c) to achieve a balance between more stable structures, and more contextual processes, (d) to be general enough to apply not only to language (and different languages), but to other semiotic systems such as gesture and depiction, and (e) to provide clear theoretical and operational definitions.

To illustrate how these could be fulfilled in practice, the authors propose that a recent cognitive-semiotic theory, the Motivation & Sedimentation Model (Stampoulidis et al, 2019; Zlatev & Blomberg 2019; Devylder & Zlatev, 2020) can succeed where others have failed. This is because it integrates the bodily, linguistic and social aspects of metaphor, while leaving the

notion of conceptual mapping behind and providing a definition of metaphor that is consistent with the rhetorical and semiotic traditions.

A central tenet of MSM is that metaphors neither reside in the conceptual structures of individual language users, nor float in context, but rather – as all meaning-making – take place through the relationship between the intentional acts of human beings and their intentional objects (see 2.2.3). To be able to capture and describe different aspects of metaphorical meaning-making, along with the factors that affect the emergence and spread of metaphors, MSM defines metaphor as a *special form of sign use*. This is in line with the tradition, as "it was accepted since classical times until recently that metaphors are *signs* (not necessarily verbal), which signify by extending their sense from what they usually mean, and hence achieving rhetorical effects through semantic transfer" (Zlatev et al., in press, p. 2). On the other hand, MSM acknowledges that metaphor is not just a rhetorical device reserved for poets and orators but constitutes an important part of human meaning-making. The following definition of metaphor, with slight variations, has been advanced in a number of recent papers on metaphor within the MSM approach (Stampoulidis et al., 2019, p. 10; Torstensson, 2019, p. 14; Zlatev et al., in press, p. 14):

> *Metaphor is a sign in a given semiotic system (or a combination of systems) with (a) at least two different potential interpretations (tension), (b) standing in an iconic relationship with each other, where (c) one interpretation is more relevant in the communicative context, and (d) can be understood in part by comparison with the less relevant interpretation.*

To spell out, this first implies that metaphor is a sign, i.e. involving signitive intentionality, where a conscious subject uses an expression (in language or another semiotic system) to construe particular intentional objects (see Section 2.2.3). Having two different potential interpretations means that one *representamen* (the expression of a sign) can evoke two different *objects* (the contents of the sign), which creates an interpretative ambiguity and thus tension. However, what makes metaphors differ from other ambiguous signs is the relationship of *iconicity* between the two interpretations. In this case, the iconic relationship is based on the resemblance between the two denoted objects (contents). This could either be on the more concrete level of properties like shape and colour (images) or on the levels of correspondences (diagrams).[6] Finally, the definition does not explicitly state that the more "abstract"

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[6] As was noted in the reviews of other metaphor theories, while the term "iconicity" was seldom present, authors adopted analogous notions, such as "ontological correspondences" (Lakoff, 1993) or "transparency of metaphor" (Müller, 2017).

interpretation (content) should be understood in terms of the more "basic", since while this may be sometimes the case, it need not, as in (6), where the experience of *falling in love* is utilized to help understand the (non-actual) experience of endless downward movement.

(6)   I fell and fell in my dream, in a helpless way like *falling* in love.[7]

As shown in Figure 2, the Motivation & Sedimentation model assumes three levels of (metaphorical) meaning-making, and two basic processes: *motivation* and *sedimentation*. The Embodied level constitutes the bedrock for all meaning, and thus may be considered the primary motivation for metaphors. This is the level of non-linguistic processes of bodily experience and cognition, including analogy making. Thus, MSM includes what CMT acknowledged as the core aspect of metaphor, but maintains that this is not metaphor *per se*, but only a set of capacities that motivate it.

Level	Type of meaning-making
Situated	Spontaneous, creative
Sedimented	Conventional, normative
Embodied	Pan-human, non-linguistic
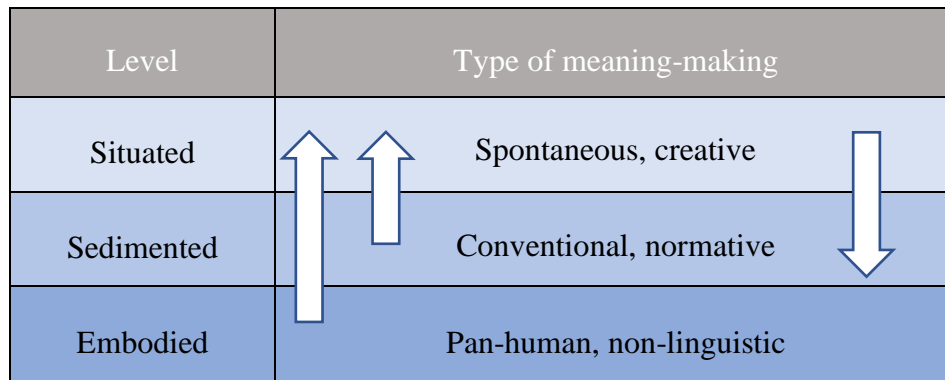
Figure 2: The Motivation & Sedimentation Model of meaning-making, with upward motivation relations, and downward sedimentation relation, adapted from Devylder & Zlatev (2020, p. 273).

It is on the Situated level of social interaction and actual communication that metaphorical meaning-making takes place. This is the level where metaphors emerge and interact with contextual factors. As mentioned in describing Jensen's ecological approach (see 2.3.3), different social contexts can afford different levels of creativity and elaboration, and this could lead to different metaphors used. This level of metaphorical meaning-making thus corresponds to the point of view of the dynamical approaches to metaphor. Between these levels is the Sedimented level, which is of dual nature. This level operates on culture-specific conventionalized metaphorical expressions (in various semiotic systems) i.e. conventional ways of describing various phenomena figuratively. In this way "[i]t gives stability to human

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[7] An example constructed by Prof. Jordan Zlatev.

communication: a shared reference frame for a larger or smaller social community" (Zlatev et al., in press, p. 10).

The interactions between the Embodied, the Sedimented, and the Situated level consist of the two processes that give the name to the model, namely *motivation* and *sedimentation*. When novel, motivated by the Embodied level (i.e. based on bodily experience and analogy), metaphors become "successful" on the Situated level and are used repeatedly, they become conventionalized and remembered, building up the Sedimented level of metaphors. This constitutes the second kind of motivation for metaphor use on the Situated level, represented by the second arrow to it in Figure 2. This factor thus resembles the points of view expressed by scholars like Zinken and Svanlund (see subsection 2.3.2). Moreover, the processes of motivation and sedimentation provide an explanation for the psychological entrenchment of metaphors being more than just a result of conceptual coupling of different kinds of underlying physical experience, but also a result from and reflect the actual metaphor use in communication (Svanlund, 2007, p. 51).

In sum, MSM states that metaphors are most often *doubly motivated*: on the one hand they are grounded by the "visceral experiences and non-linguistic thought processes on the Embodied level" and on the other hand, by "the norms of the Sedimented level" (Zlatev et al., in press, p. 12). What constitutes the difference between the novel and conventional metaphors in use is that the former are predominantly motivated by the Embodied level, and the latter by the Sedimented level. Additionally, MSM operates with two kinds of norms – those dependent on a particular context in which the use of metaphor takes place ("situated norms"), and those shared on a larger scale, such as the norms and conventions of a linguistic community.

Moreover, the notion of *metaphoricity* as proposed by MSM is scalar: inversely proportional to the degree of motivation by the Sedimented level, and proportional to the degree of motivation from the Embodied level. This, however, is the degree of *potential metaphoricity*. This should be distinguished from the *actual metaphoricity* of an expression, which can only be established on the Situated level (see Devylder & Zlatev, 2020). This is the case since specific contextual cues affect to what extent attention is drawn to the tension between the two interpretations, and to the iconicity between them, either on the level of properties (*imagistic iconicity*) or correspondences (*diagrammatic iconicity*). Examples (7) and (8) both contain the same sedimented metaphor, but while the context of (7) is likely to be of the kind that tones down tension and iconicity, (8) is likely to exaggerate it.

(7)   He is a male chauvinist pig.

(8)   You know, John behaved like a pig at the party.

It is worth pointing out that the expression in (8), which highlights the tension and iconicity between the two senses of the word *pig* is the one that takes the form of simile. As most current approaches, MSM does not make a categorical distinction between metaphors in contexts such as (7) and (8), as what is crucial is the iconicity between the two meanings. On the other hand, while (8) is both metaphorical and has a form of simile, example (9) is a simile that is not a metaphorical, but a literal comparison.

(9)   A wild boar is like a pig.

According to the so-called *Career of Metaphor* model, proposed by Bowdle & Gentner (2005), metaphors that are based on *structure mapping* (analogy) between concepts, are more likely to undergo conventionalization than metaphors with Topics whose Vehicles are less systematically related. According to Bowdle & Gentner (2005) novel metaphors are analyzed as figurative comparisons that result from such a structural alignment between the two senses of an expression. This notion of *structure mapping* is similar, if not synonymous with notions such as analogy and diagrammatic iconicity. As a consequence of repeated use, the relational structure between aspects of the two aligned senses becomes a metaphorical category, which brings about another stage of the "career of a metaphor". At this stage, metaphorical expressions are more likely to be processed through categorization, which corresponds to motivation by the Sedimented level in MSM. Both models imply that metaphorical expressions that take a form of similes are more likely to be motivated by and understood as comparisons (due to analogy making on the Embodied level) and thus as having a higher degree of potential metaphoricity.

In sum, MSM manages to marry seemingly contradicting concepts present in other theories of metaphor by adopting a clear set of definitions and finding a place for what is valuable in other theories. This makes it appropriate for the present study, dealing with metaphors in psychotherapy.

2.5. Anxiety and metaphors in psychotherapy

2.5.1. Defining anxiety

One type of bodily experience, of particular importance for the current thesis, is that of *anxiety*. This notion is, however, quite ambiguous. Anxiety can be a *feeling* that every person experiences every now and then, characterized by worries concerning future events, seeking reassurance, overall feeling of uneasiness and unpleasant agitation. Common bodily experiences of anxiety may involve shakiness, muscle tension, shallow or rapid breathing and sweating, among others. What differentiates the feeling of anxiety from fear is the lack of concrete and immediate threat. For example, if wandering through a forest I suddenly encounter a snake, it is very likely that I will experience fear towards it. On the other hand, if the unpleasant sensation of anticipation, uneasiness and nervousness arises without any apparent threat, then what I am experiencing is anxiety.

Some people have a tendency to get anxious more easily than others, and there are also different things that make people anxious. There are also people who suffer from *anxiety disorders*, which can take many different forms. For the purpose of this thesis, it is possible to adopt Endler's terminology from *the multidimensional interaction model of stress, anxiety and coping* (Endler, 1997). *State anxiety* is a notion describing a transitory experience of anxiety and worry in case of perception or anticipation of a threatening situation. *Trait anxiety*, on the other hand, describes one's predisposition to feel anxious (i.e. experience state anxiety) in various types of situations (Endler, 1997, p. 140).

While feelings of anxiety, fear and worry are completely normal and adaptive, anxiety can also turn into a problem, even though the line of demarcation between adaptive and maladaptive anxiety is often blurry. One proposal for diagnosing a disorder involves two criteria: the "factual" malfunctioning of a psychobiological function and the "evaluative" subjective experience of the malfunction – such as suffering or social maladjustment – and the overall harm caused by the malfunction (Evans et al., 2008, p. 4). While these criteria are not perfect, they may help distinguish between the experiences of "everyday" anxiety, and those of maladaptive anxiety.

A widely acknowledged way of diagnosing disorders accessible for mental health professionals is following manuals such as DSM-5 or ICD-10. The criteria included in the manuals involve both factual and evaluative components, and DSM-5 defines the key features of Generalized Anxiety Disorder (GAD) as follows:

> [P]ersistent and excessive anxiety and worry about various domains, including work and school performance, that the individual finds difficult to control. In addition, the individual experiences physical symptoms, including restlessness or feeling keyed up or on edge; being easily fatigued; difficulty concentrating or mind going blank; irritability; muscle tension; and sleep disturbance (American Psychiatric Association, 2013, p. 190).

As in all anxiety disorders, GAD is diagnosed only when the symptoms cannot be attributed to the physiological effects of the use of substance/medication, another medical condition or another mental disorder (American Psychiatric Association, 2013, p. 189).

As the current thesis investigates possible differences between metaphors produced by highly anxious people and people who experience average levels of anxiety, the term *highly anxious* needs a valid operationalization. For the use of this thesis, psychotherapy recipients diagnosed with anxiety disorders and/or reporting frequent and intense symptoms of anxiety can be categorized as "highly anxious". On the other hand, psychotherapy recipients whose issues do not involve excessive and maladaptive anxiety or worry, or whose worries cannot be attributed to any anxiety disorder, can be regarded as experiencing normal or adaptive anxiety.

2.5.2. Metaphors in psychotherapy

Metaphors have been explored extensively within both linguistics and psychotherapy research, with little communication and integration between these two fields. As explained by Tay "[l]inguistic analyses often do not clearly connect with therapeutic processes and outcomes, and thus remain opaque to psychotherapists. Likewise, psychotherapy researchers have little need to discuss their work in relation to linguistic concerns" (Tay, 2017, p. 178). In consequence, therapists and psychotherapy researchers have developed their own metaphor identification and classification procedures. These have often been inspired by the research of metaphor scholars, as the use of the Metaphor Identification Procedure (MIP) developed by Pragglejaz (2007) and the procedure proposed by Cameron & Maslen (2010) that is used by Mathieson et al. (2015). Others have developed their own schemes, based more loosely upon work in cognitive linguistics, as done by Gelo & Mergenthaler (2012), who define metaphorical expression as a linguistic expression (Vehicle term) used to refer to "something else" (Topic term), where the former and the latter refer to different domains of experience or knowledge – a definition that combines some aspects of Discourse Dynamics and CMT. As their study focused on novel metaphors exclusively, the method described by Gelo & Mergenthaler (2012) is focused mostly on identifying instances of conventional metaphors used creatively by *extending, elaboration, questioning, combining* various elements of source domains and *image*

formation i.e. "mapping one conventional image onto another" (Gelo & Mergenthaler, 2012, p. 165).

One reason for psychotherapy researchers to study metaphors is to explore the relationship between the use of metaphors (either by the client or by the therapist) and client betterment or otherwise defined success in therapeutic intervention. Tay (2017) proposes a model of the relationship *metaphor-body-psychotherapy* that points out that these three "components" are interrelated and can inform one another in an analysis. For example, Tay illustrates, how metaphors can be combined in a body-based therapeutic intervention to provide a client with an additional "cognitive resource" concerning not only bodily, but also emotional experience (Tay, 2017, p. 184). On the other hand, in a metaphor-based intervention, a therapist can ask a client to elaborate on a metaphor they produced, and thus elicit a more detailed description of a relevant bodily experience. It is argued that:

> [j]ust as metaphor theory would help therapists identify which "live" bodily activities could be reintroduced as source domains, it should help in decomposing conceptual metaphors to their embodied groundings, with elements which have the potential to be enacted by way of standard body-based interventions (Tay, 2017, p. 185).

Further, Tay argues that the relationship between different psychological disorders and the use of metaphor (both as a way of expressing one's experiences and as a therapeutic strategy) is underexplored in both metaphor and psychotherapy research. As an example, he investigates metaphors with regards to PTSD (*post-traumatic stress disorder*), as a psychological disorder that involves "vivid and concrete bodily experiences" (Tay, 2014, p. 88). A possible research question, he suggests, is whether therapists and patients discussing concrete, traumatic bodily experiences can still benefit from metaphor.

Although the present thesis does not concern the results of therapeutic interventions that employ metaphor, it undoubtfully investigates the underexplored relationship between psychological disorders and metaphor use, in particular with respect to experiences related to anxiety disorders.

2.6. Summary and general hypotheses

This chapter provided key theoretical background for this thesis. First, it demonstrated how the current work is grounded within the transdisciplinary field of cognitive semiotics and presented the role of phenomenology in shaping the field. Then, it reviewed three different kinds of theories of metaphor, focusing, respectively, on the role of (embodied) mappings, social

conventions, and communicative context. Further, it presented the Motivation & Sedimentation Model (MSM) as applied to metaphor and showed how it integrates these different points of view into a multifaceted theory of metaphor, and provides clear and operationalizable definitions. In presenting the model that is employed in the current thesis, some ways of operationalizing motivating factors of metaphor use were reviewed. Finally, the notion of anxiety was introduced and ways of differentiating between anxiety disorder and adaptive anxiety were presented.

On the base of these theoretical considerations, and the research questions stated in the Introduction, the following general hypotheses for this thesis on the role of maladaptive anxiety on metaphorical meaning-making can be formulated:

- **H1**   People who experience anxiety on average levels will describe their experiences of anxiety, worry and stress using expressions that are more conventional: more motivated by the Sedimented level of metaphorical meaning-making.

- **H2**   Strong and prolonged bodily experience of anxiety, which is not common to all people, may motivate the situated use of metaphorical expressions that are more strongly motivated by the Embodied level when describing their experience of anxiety.

- **H3**   People who experience maladaptive anxiety and its physical manifestations will use expressions that are more novel: more strongly motivated by the Embodied level than by the Sedimented level.

These general hypotheses are further operationalized in the following chapter.

Chapter 3. Methods

3.1.   Introduction

This chapter presents the methods of the empirical study conducted as part of this thesis. As the study operates on pre-existing materials, their source and nature need to be described, along with all relevant ethical issues. The second section describes the particular metaphor identification procedure adopted for the study as a formalized first-person, intuition-based method. Then, the metaphor categorization procedure with regards to the dimensions of the Motivation & Sedimentation Model (MSM) is presented. Finally, the hypotheses drawn in the previous chapter are operationalized in accordance with the methods described and stated as specific hypotheses at the end of the chapter.

As described in Chapter 2, pheno-methodological triangulation is an important aspect of cognitive semiotics, as it acknowledges the validity of first-, second-, and third-person *perspectives* in relation to any object of study, with emphasis on the first-person perspective and the acts of consciousness performed by the researchers (e.g. Pajunen and Itkonen, 2019). To reiterate what was mentioned in the subsection 2.2.2 and Table 2, pheno-methodological triangulation applied to the present study involves: a) intuition applied within the metaphor identification procedure, b) empathy applied to the categorization of metaphors as motivated primarily by non-linguistic bodily-experience, c) quantification of the metaphor types in relation to the independent variable of anxiety as either adaptive or maladaptive.

3.2.   The transcripts

The data used in the empirical study consisted of transcripts of psychotherapy and counselling sessions available in the *PsycTherapy* database (www.psyctherapy.apa.org). PsycTherapy is an American Psychological Association database that contains over 500 video recordings and transcripts of actual unscripted therapy sessions. It allows browsing the videos by choosing therapeutic approaches, techniques, and topics of therapy. The therapy sessions available cover a large number of topics such as anxiety, compulsions, eating disorders, depression, divorce and stress.

For the use of the present study the transcripts of a sample of 10 psychotherapy sessions tagged in the database as concerning the topic of *anxiety*, and a sample of 10 psychotherapy sessions tagged as concerning *stress* were extracted. I made sure that the extracted material was mutually

exclusive, and that each session represented a different therapist-client dyad. The utterances produced by the subjects of these two samples of psychotherapy sessions constitute what will be referred further as the *anxiety sample* (AS) and the *stress sample* (SS).

It must be noted that the independent variable in this study is not the experience of the state *anxiety* or the state *stress*, but rather the presence or absence of an anxiety disorder. In case of 8 out of 10 psychotherapy sessions included in the anxiety sample it was explicitly stated that the subjects were diagnosed with *anxiety disorders* – either in the descriptions of the video recordings, or as the index terms attributed to these sessions in the database. In the descriptions of the remaining two it was stated that the subjects suffered from physiological, cognitive, and behavioral symptoms of anxiety or expressed concerns related to anxiety. On the other hand, in the descriptions of the therapy sessions included in the stress sample nothing was stated about the subjects being diagnosed with anxiety disorders, nor was the index term 'anxiety disorders' attributed to any of these therapy sessions. This difference between the two samples can be assumed to provide the independent variable, which allows to investigate differences between metaphors produced by the individuals experiencing anxiety disorders according to the DSM-5 definition (see Section 2.5), and individuals who experience similar problems, but to a lesser extent.

The extracted sessions were all of similar length ranging from 37 to 48 minutes. Overall, the material in the anxiety sample consisted of 442 minutes of psychotherapy, and in the stress sample of 439 minutes. Despite the fact that each therapy session is different, and the task of controlling how many opportunities to speak each of the therapy clients had is virtually impossible to accomplish with the amount of data on each of the therapy topics available, based on these numbers the two samples were deemed satisfactory for the purpose of this thesis.

3.2.1. Ethical considerations

Psychotherapy sessions available in the PsycTherapy database were filmed following ethical protocols, after an informed consent from the participants was obtained. However, the material remains confidential and available only for authorized users for educational and training purposes. Access to the PsycTherapy database requires a paid subscription, which was provided by Lund University. Therapy recipients whose psychotherapy sessions are available are anonymous and downloading and sharing the video recordings to unauthorized users is expressly prohibited. Hence, no personal information about the therapy recipients that would allow to identify them is disclosed in this thesis.

3.3. Metaphor identification

3.3.1. The original MIP

In recent years much has been written about the importance of consistent "metaphor identification". With the shift from studying metaphorical expression constructed by the researchers themselves, as some of those offered in this thesis (e.g. examples 6-9 in chapter 2), to a focus towards the real-life use of metaphors in communication, metaphor studies have demanded an intersubjectively valid and reliable method of identifying metaphors in verbal texts, or other semiotic systems (Cameron, 1999; Steen, 2002; Gibbs, 2017). At the same time, the lack of consensus on the nature of metaphor has resulted in the lack of a general method. The situation improved when a group of prominent metaphor scholars (Peter Crisp, Raymond Gibbs, Alice Deignan, Graham Low, Gerard Steen, Lynne Cameron, Elena Semino, Joe Grady, Alan Cienki, and Zoltan Kovecses), with otherwise often divergent views on the subject, collaborated and formulated a relatively agreed-upon metaphor identification procedure, called simply "MIP". This was supposedly "the first tool that can be reliably employed to identify metaphorically used words in discourse" that would provide scholars "with a method to compare and contrast different metaphor analyses, leading to more ecologically valid measures of metaphor and more realistic theories of metaphorical language use" (Pragglejaz Group, 2007, p. 36). The procedure consists of the following four steps:

1. Read the entire text–discourse to establish a general understanding of the meaning.
2. Determine the lexical units in the text–discourse
3. (a) For each lexical unit in the text, establish its meaning in context, that is, how it applies to an entity, relation, or attribute in the situation evoked by the text (contextual meaning). Take into account what comes before and after the lexical unit.

   (b) For each lexical unit, determine if it has a more basic contemporary meaning in other contexts than the one in the given context. For our purposes, basic meanings tend to be

   —More concrete; what they evoke is easier to imagine, see, hear, feel, smell, and taste.

   —Related to bodily action.

   —More precise (as opposed to vague)

   —Historically older.

   Basic meanings are not necessarily the most frequent meanings of the lexical unit.

   (c) If the lexical unit has a more basic current–contemporary meaning in other contexts than the given context, decide whether the contextual meaning contrasts with the basic meaning but can be understood in comparison with it.
4. If yes, mark the lexical unit as metaphorical.

   (Pragglejaz Group, 2007, p. 3)

However, even the creators of MIP agree that this procedure has some limitations. One is that the method focuses on identifying *individual lexical items* that convey metaphorical meaning, rather than longer stretches of discourse that as a whole make up a metaphorical expression (Pragglejaz Group, 2007, p. 2). Another is that the reliability of the procedure is motivated by the number of analysts employed, their training in applying the steps, the amount of rounds of coding performed by each analyst, the way the discussion between the analysts are held, and other hard-to-control factors (Pragglejaz Group, 2007, p. 14). MIP requires the application of steps 2-4, to each lexical unit in the analyzed text, which makes the method unsuitable for a single researcher or a smaller research project more generally, if this admonition is taken literally.

Another problem is the need to agree on and use dictionaries to decide if the meaning in the current context, or some other meaning is the "more basic". Unfortunately, the criteria proposed in point 3b) of the procedure do not make the operationalization of "a more basic sense" easier. The notions of "concrete" and "precise" are quite vague themselves. Moreover, the body-relatedness of an interpretation does not guarantee its "basicness" – some metaphors have bodily aspects as the metaphorized part of their meaning (i.e. Topic), and not the part that is metaphorizing (i.e. Vehicle). Consider the example prompted by Gibbs (2017), after Bochaver & Fenko (2010), where the more "embodied" meaning is clearly the Topic rather than the Vehicle:

> After the cancer's invasion of the body, the immune system launches an offensive to beat the disease. The army of killer T cells and stealth viruses fight the tumour cells. However, this is not enough to wipe out or eradicate the invader completely… (Gibbs, 2017, p. 164).

Finally, although historically older senses of some conventional metaphors may indeed be regarded as "literal", they are not always transparent for language users. Thus, identifying them cannot ensure that more recently conventionalized senses are still metaphorical. A well-known example of an expression which originally had two senses, including one that was motivated by the iconic relation with the other, is the word *comprehend* originally in Latin meaning 'hold tightly' or 'grasp' which only preserved its figurative meaning as 'understand' in English (Svanlund, 2007, p. 27).

All such factors imply the need for a method of metaphor identification tailored to suit the current study, aligning theoretical and operational definitions of metaphor.

3.3.2. Alternatives to MIP

There have been more recent alternative proposals, some of which stem directly from the Pragglejaz procedure. An example of such is MIPVU (Vrije Universireit), whose distinctive feature is acknowledging more structural variation present in metaphorical expressions and introducing the notion of *metaphor-related words*. As argued by Nacey et al. (2019) the original MIP allows the analyst to identify only the *indirect metaphors* i.e. expressions that exhibit a contrast between "basic" and contextual sense of a given lexical unit. In turn, MIPVU allows identifying so-called *direct metaphors:* expressions that convey figurative comparisons without exhibiting such contrasts on the lexical unit level. Necay et al. (2019) illustrate this kind with the following example:

> Going back to Bruce Springsteen's lyrics discussed earlier, consider the line about a man who *end[s] like a dog that's been beat too much*. Here, the contextual 'animal' sense of the lexical unit 'dog' is the same as the more basic sense of the word. Given that the line refers to a person, however, there is clearly an underlying cross-domain mapping at play, signaled here by the preposition *like* – what MIPVU terms a metaphor flag. (Nacey et al, 2019, p. 5)

The term *metaphor flag* used in the quoted text is important here as it touches upon the topic of metaphorical simile mentioned in Section 2.4. According to Steen (2015) and Steen et al. (2019) pragmatic markers of analogy or comparison, including simile markers (e.g. *like*) should be considered potential markers of metaphoricity, understood by these scholars as the presence of a cross-domain conceptual mapping. In more general terms, they can be said to alert the language user of similarity and tension being at play (Steen et al, 2019, p. 38).

Another type of metaphor that can be identified by MIPVU is an *implicit metaphor*. This is an expression that refers to a metaphor mentioned elsewhere in the discourse by means of grammatical or semantic links (e.g. demonstrative pronouns). In relation to the direct and implicit metaphors, which are realized by words that are not used metaphorically *per se*, MIPVU introduces the notion of metaphor-related words as an umbrella term for expressions of all three kinds of metaphors and metaphor flags.

Other procedures have been developed more specifically along the lines of MSM. The metaphor identification procedure proposed by Torstensson (2019) provides an important advantage compared to MIP, as it does not require the analyst to code each lexical unit of the text, but rather whole phrases, after one has become familiar with the analyzed text. The procedure begins with a search for potentially ambiguous language use followed by the application of a

test for *polysemy* as opposed to semantic *generality* (Geeraerts, 1993; Quine, 1960). This test consists of a question of whether or not something could both be X and not be X. A positive answer means that the expression (X) passes the test, and a negative answer means that the expression fails the test. To provide examples from my data, the expression tested in (10) would pass such a test, while the expression tested in (11) would fail it.

(10)　　　　Can one *move under the radar* (as in being unnoticed) without *moving under the radar* (as in being a stealth aircraft or a stealth submarine)?　　YES (PASS)

(11)　　　　Can someone *see a psychiatrist (*as in having an appointment) without *seeing a psychiatrist* (as in looking at)?　　　　　　　　　　NO (FAIL)

In the final step of this procedure, the analyst excludes ambiguous expressions which can be understood by means of different relations between the two interpretations than the relation of iconicity (such as relations of *generalization*, *specification* or *metonymy*), or interpretations that simply lack iconicity or have the "wrong" directionality of the iconic mapping (Torstensson, 2019, p. 42). Applying the researcher's intuition to the metaphor identification procedure and making the identification of various definitional characteristics of metaphors explicit, ensures the reliability and validity of the procedure. However, it also makes it very time-consuming, and focused on particular words.

In contrast, Cameron describes a metaphor identification method, which starts from the *word-by-word* and *phrase-by-phrase* search for potential *Vehicles:* with potential metaphorical expressions, rather than just ambiguous expressions. Thus, the metaphor-led discourse analysis relies to a greater extent on the researcher's background knowledge of the whole analyzed discourse and informal intuition as to what appears to be relevant (Cameron et al., 2002). Cameron explains that "[w]ith metaphor characterized as seeing one thing in terms of another, a Vehicle term points to the 'another'. It contrasts with the ongoing discourse topic, yet connects and makes a kind of sense" (Cameron, 2018, p. 23).

Torstensson (2019), Cameron et al. (2002) and Cameron (2018) provide contrasting perspectives on how to use and systematize the researcher's intuitions within a metaphor identification procedure. The aim of the metaphor identification procedure created for the purpose of the current thesis seeks a middle way, with the goal to ensure validity and reliability of the study, without becoming too technical and time consuming. It is presented in the following subsection.

3.3.3. The current metaphor identification procedure: MIP-KM

Considering the MSM definition of metaphor (see Section 2.4) and inspired by the relevant metaphor identification methods of Cameron et al., (2009) and Torstensson (2019), the following metaphor identification procedure was formulated.

MIP-KM (Kalina Moskaluk)

1. *Become familiar with the discourse (both with transcripts and video recordings).*
2. *Work through the data looking for expressions that appear to have multiple interpretations. Underline them and include them in the coding sheet, along with the whole turn used by the speaker*
3. *For every such expression check if:*
   a. *The two interpretations are clearly distinct in meaning and cannot be co-extensional (i.e. pass a version of the polysemy test)*
   b. *The contextually relevant interpretation (Topic) is understood in part by the comparison with the other interpretation (Vehicle).*
   c. *Topic and Vehicle stand in an iconic (i.e. resemblance based) relationship with each other.*
   d. *Topic can be, but need not be, overtly mentioned elsewhere in the discourse.*
4. *If satisfied each of the above, the expression is listed as a metaphor in the coding sheet with its respective Topic and Vehicle spelled out.*

As a part of Step 1, the analyst watches all video recordings included as the research material at least one time. Further on, all transcripts are read through and anonymized. Step 2 allows to gain even more familiarity with the discourse as it requires another read-through in order to mark and include in the coding sheet the expressions that appear to have multiple interpretations, along with the totality of the turn attributed to the therapy client (to provide the analyst with the immediate context of an utterance). This step was applied to the material as exemplified in (12) with the underlined parts being the expressions considered as having multiple interpretations.

(12)   Therapy client: Uhm, and also I've, I've always had this happened young but, uhm, I have like this weird sensations and my ear still like almost like it almost like a radio tuning like a frequency of tones and so whenever, uhm, it so quiet like this I hear those even louder.

Therapist: Oh, a, a kind of some people call it ringing in the ears is it-- is it a little more like that.

C: Yeah. It's very similar to that but <u>it goes up and down</u> and it literally describe <u>that is like turning the knob</u> they go...

T: - and they move-- . Ah-ah.

C: Yeah. <u>Like a radio trying to get frequency</u> and so I felt like I guess those kind of things that <u>I always tuned out</u> or tried to avoid –

In the present study, steps 3a), 3b), 3c) were applied to the underlined material within the coding sheet to test if the expressions met the requirements of tension, directionality and iconicity. All the of these "candidate metaphors" are given in Appendix A, along with ratings for the criteria described below.

Tension was operationalized as the two interpretations *not being co-extensional* (i.e. not describing the same situation) and was tested by applying a version of the polysemy test of Torstensson (2019). This consisted of a sentence that illustrates a situation where one of the interpretations is true and the other interpretation is false. If the sentence is not self-contradictory, the expression passes the test. For example, the test was applied to the expressions as in (13) and (14) which provided both passing and failing examples.

(13)   *I'll be somewhere else*
         Test: I am somewhere else (I am not attentive) but I am not somewhere else (in a different location).   PASS

(14)   *like a frequency of tones*
         Test: ??It sounds like a frequency of tones, but not like a frequency of tones.
                                                                                 FAIL

It is important to note that rejection of the simile in example (14) does not imply that all similes fail the polysemy test. As previously mentioned in Section 2.4 and subsection 3.3.2, both Bowdle & Gentner (2005), and Steen et al. (2019) point out that similes can be used to convey metaphorical meanings. The difference between literal and figurative comparisons becomes apparent when subjected to the polysemy test. While denying a literal comparison (see example

14) appears self-contradictory, denying a metaphorical one does not, because of the latter having two interpretations, as in (15).[8]

(15)   *[heart is] like the engine*
           Test: The heart is like the engine (for human body, functionally), but it is not like the engine (part of vehicle).   PASS

The second criterion of the MSM definition of metaphor (see Section 2.4), *directionality*, meaning that a contextually relevant interpretation is understood (in part) by comparison with the other interpretation, is operationalized as a test asking if it is possible to understand the contextually relevant interpretation without understanding the other interpretation. A positive answer to the question implies a lack of directionality between the two interpretations. Examples (16) and (17) illustrate the application of the test to passing and failing expressions, respectively.

(16)   *normal adolescent things, but times like ten*
           Test: Is it possible to understand the Topic interpretation of the expression (*more intense than the norm*) without knowing that 'times like ten' can mean to multiply something times ten?   NO (PASS)

(17)   *sometimes my mom is kind of hard to deal with*
           Test: Is it possible to understand the Topic interpretation of the expression (*difficult to interact with*) without knowing that 'dealing with' can mean buying/selling goods/services?   YES (FAIL)

If an expression passed the two tests described above, it means that it has (at least) two distinct interpretations, one of which is more relevant in the context, and understood in part by the comparison with the other. At this step, to identify it as a metaphor, one has to differentiate between the cases where the two interpretations stand in an *iconic*, similarity-based relationship (either on the level of shared properties or on the level of relations), and the cases where the relationship is *purely indexical* i.e. based on spatial, temporal or conceptual contiguity. If the latter is the case, the expression should be considered a metonymy, and thus, not a metaphor. This criterion is met if the question "Is the Topic interpretation at least in part understood due

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[8] A critic could say that "X is like Z and not like Z" is not self-contradictory, since there are always ways in which two things are both similar and different. But we could say that such an expression is at least "anomalous" by violating Gricean maxims of Quantity and Manner. The reason: it is not informative, and in principle tautologous to say, e.g. "Bats are like birds and not like birds".

to iconicity/resemblance between the two interpretations?" can be answered positively. On the other hand, it is important to point out that some metaphors combine iconicity and indexicality, making them also metonymical, thus the presence of indexical relations between the two interpretations of an expression does not exclude the expression as a metaphor. Examples (18) and (19) illustrate application of this test.

(18)   *I keep feeling like you were getting farther and farther away from me*
         Test: Is the Topic interpretation of the expression (*being less directly experienced*) at least in part understood due to iconicity/resemblance to the Vehicle interpretation (*getting farther away in space*)   YES (PASS)

(19)   *I wanna go to grad school*
         Test: Is the Topic interpretation of the expression (*become a graduate student*) at least in part understood due to iconicity/resemblance to the Vehicle interpretation (*go to the physical location of a grad school*)?   NO (FAIL)

Expressions that have met all the criteria described were coded as metaphors in the coding sheet and subjected to the categorization procedure. All the data was coded by the author, following the procedures and tests described so far, as shown in Appendix A. To contribute to the intersubjective validity of the study, a second analyst was introduced to perform steps 3a), 3b), 3c) of the identification procedure on a subset of the data. This consisted of 10% (=139) of the expressions included for the analysis by the author during Step 2. The two analysts agreed upon operationalizations and method of metaphor identification before applying tests for polysemy, directionality and iconicity. After each applied steps 3a-c individually, their judgements were compared. Most of the initial disagreements stemmed from differences in Vehicle and Topic interpretations assumed by the analysts. In these cases, discussing different potential Vehicle and Topic interpretations and deciding upon the best candidates for them was sufficient to settle different outcomes of the tests. Many times, taking a closer look at the context of an utterance was a key factor that helped resolving the disagreements. Any other differences in the judgements based on the analysts' formalized intuitions were discussed, and their final decisions negotiated. The rates of agreement between the analysts before the negotiation were 81%, and 98.5% after the negotiation.

3.4. Metaphor categorization

Having identified the metaphorical expressions in both samples of psychotherapy transcripts, the task was to categorize them according to two dimensions – one being motivation by the Embodied level, and the other being motivation by the Sedimented level of meaning-making. Categorizations were made with regards to the Situated level of actual metaphor use – which, in the present study, was grounded in the context of psychotherapy or counselling. As described in Section 2.4 the relationship between these two dimensions is important for defining and operationalizing the notion of *metaphoricity*. According to MSM the difference between novel and conventional metaphors lies in the degrees of relative motivation by the Embodied and the Sedimented levels. At the same time, it should be reminded that these two kinds of motivations are not mutually exclusive, which e.g. may result in metaphorical expressions exhibiting a high degree of motivation on both the Embodied and the Sedimented level. On the other hand, H3 of this thesis (see 2.6) focuses on novel metaphorical expressions, described in MSM as characterized by being predominantly motivated by the Embodied level of meaning-making (Zlatev et al., in press, p. 12). This suggested the following operationalization of *novel metaphors* that was used for the study: *metaphors exhibiting high degree of motivation by the Embodied level, and low degree of motivation by the Sedimented level.*

One of the possible ways of operationalizing the two dimensions of Sedimentation and Motivation was proposed by Torstensson (2019). In his work, the level of motivation by the Sedimented level was operationalized as the presence of a given expression in relevant lexica and corpora. Motivation by the Embodied level of meaning-making was operationalized as the "body-relatedness", that is, overt reference to the body. Body-related expressions included expressions denoting a bodily sensation, a body or its part, and a property of the body. Additionally, an expression categorized as bodily motivated metaphor had to be focused on the experience itself, rather than on the object of experience (Torstensson, 2019, p. 46-47). However, the Embodied level of MSM is not limited to the references to the biological or phenomenal body itself. The Embodied level is what enables us to perceive analogies, iconic relations and differences between different aspects of our life world (see Zlatev et al, in press). Thus, in a broader sense, metaphors strongly motivated by the Embodied level can include all metaphors that highlight the iconicity and tension between the two interpretations.

3.4.1. Motivation by the Embodied level

Following the MSM approach to metaphor described in Section 2.4, metaphorical expressions are doubly motivated – by both Embodied and Sedimented levels. Being mindful of that, it becomes apparent that successful operationalization of these motivations must account for varying degrees to which the Sedimented and Embodied levels motivate a particular metaphorical expression, as well as for the fact that each metaphor is to some extend both sedimented and grounded in analogy-making and bodily experience. This requires the categories to be broad enough to account for the totality of metaphors and narrow enough to capture differences between them.

The tripartite distinction of motivation by the Embodied level (in short *motivation*) proposed here can be described as follows. A *marginal* degree of motivation includes metaphors that are motivated by the presence of iconicity between the two interpretations without highlighting it, neither semantically, structurally nor pragmatically. In other words, in marginally motivated metaphors the relationship between Topic and Vehicle is not in focus; rather, it is implicit. *Weakly* motivated metaphors are characterized by clear distinction between Topic and Vehicle – they correspond to metaphors expressed through similes, as described by Bowdle & Gentner (2005), or metaphors marked as such by the use of *pragmatic signals*, as described by Steen (2015). Finally, *strongly* motivated metaphorical expressions are characterized by their elaboration and great attention brought towards the iconicity and tension between the Topic and Vehicle interpretations. As described in greater detail in subsection 2.3.3, this can be expressed either through reappearance of a metaphorical expression several times throughout the discourse, reappearance of a specific Topic metaphorized by several semantically distinct Vehicles, or through a very detailed description of a Vehicle.

Successful categorization according to these criteria requires great familiarity with the discourse, which was made possible by the fact that the during the process of categorization the analyst had read the transcripts several times. Although the categories presented in Table 2 may not be exhaustive or fine-grained enough to capture all the different ways in which the Embodied level may motivate the use of metaphorical expressions, they were deemed distinctive enough to generate results.

Table 2: Degrees of motivation from the Embodied level of metaphorical expressions, with descriptions, operationalizations and examples.

Degree of motivation	Description	Operationalization	Example
Strongly motivated	Elaborated description of the Vehicle to convey the Topic	Several mentions in the discourse; Structurally elaborated description of the Vehicle; Several different semantically elaborated descriptions of the Topic	*I have like these weird sensations in my ear still like almost like <u>it almost like a radio tuning</u> <u>like a frequency of tones</u> and so whenever, uhm, it so quiet like this I hear those even louder*
Weakly motivated	Topic and Vehicle clearly distinguished	Use of *pragmatic signals* such as 'it is like', 'so to say', 'kind of', 'literally'	*It's <u>like the engine</u>*
Marginally motivated	Marginal attention brought to the iconicity and tension between Topic and Vehicle	Lack of the characteristics described above	*it was <u>a huge step</u> for me*

3.4.2. Motivation by the Sedimented level

As described in Section 2.4 metaphorical expressions differ in the degree of motivation by the Sedimented level, which is the level of linguistic conventions and socially shared norms. Thus, the degree of motivation by the Sedimented level (for short *sedimentation)* of an expression was operationalized as presence of the expression, used in the same metaphorical sense as seen in the psychotherapy transcripts, in relevant lexica and corpora. Table 3 presents three degrees of sedimentation along with short descriptions and examples from the data used in the study.

Table 3: *Degrees of sedimentation of metaphorical expressions, with descriptions and examples.*

Degree of sedimentation	Description	Example
Strongly sedimented	Metaphorical usage present in the lexicon	<u>*blow things out of proportion*</u>
Weakly sedimented	Metaphorical usage present in the corpus (respective to time and place)	*I get like a <u>racy heart</u>*
Marginally sedimented	Acceptable expression (a comprehensible expression in English)	<u>*inviting the anxiety*</u>

During the categorization procedure, metaphorical expressions were first searched for in the *Macmillan Dictionary* (https://www.macmillandictionary.com/dictionary/). This dictionary has

become a popular tool in metaphor identification, primarily because if its use in Pragglejaz's MIP (2007) and MIP-VU (Krennmayr, 2008). However, as pointed out by Krennmayr, this dictionary has its disadvantages, such as the fact that it conflates phrasal and prepositional verbs, and that "concrete" and "metaphorical" meanings are often listed as belonging to the same sense (Krennmayr, 2008, p. 117). Although this may be a problem for the procedures that rely on dictionaries to spell out the "basic" and the contextually relevant meanings, it is not as important for MSM-inspired procedures, such as MIP-KM, that use dictionaries only to check if the contextually relevant interpretations (Topic interpretations) are present there.

Although the present study aims at analyzing metaphorical expressions as wholes rather than isolated lexical units, at this step it was necessary to focus on units such as phrasal verbs, prepositional verbs, adjectives and nouns that seemed the most important for both the Topic and Vehicle interpretations. The words underlined in the examples shown in Table 3 correspond to the dictionary searches.

If the metaphorical usage was not found present in the lexicon, they were subjected to the search in the corpus, to check if the expression analyzed was an instance of weakly sedimented metaphor. The corpus used was the *Corpus of Contemporary American English* (https://www.english-corpora.org/coca/). Similarly to Torstensson (2019), corpus searches were performed on the whole expressions and the expressions found in the corpus had to be used with the same metaphorical meanings as identified in the psychotherapy transcripts. Finally, if the metaphorical meaning was neither found in the lexicon, nor had its usage been evidenced in the corpus, it was coded as marginally sedimented.

After having identified the metaphors and categorized them according to the degree of motivation by the Embodied and the Sedimented level, the metaphors were grouped based on the degrees of motivation and sedimentation among both the totality of metaphors and turns as well as the sample type (*anxiety sample* and *stress sample*) and particular therapy transcript they occurred in.

3.5. Specific hypotheses

Having specified the metaphor identification procedure used in this study and operationalizations of the degrees of motivation by the Embodied and the Sedimented level, the set of general hypotheses described in Section 2.6 could be reformulated as follows:

- **S1**   The proportion of marginally sedimented metaphors will be higher in the anxiety sample (AS) than in the stress sample (SS). Correspondingly, the proportion of strongly and weakly sedimented metaphors, irrespective of their degree of motivation by the Embodied level, will be higher in the stress sample (SS) than in the anxiety sample (AS).

- **S2**   The proportion of strongly motivated metaphors will be higher in the anxiety sample (AS) than in the stress sample (SS). Correspondingly, the proportion of weakly and marginally motivated metaphors, irrespective of their degree of motivation by the Sedimented level, will be higher in the stress sample (SS) than in the anxiety sample (AS).

- **S3**   The proportion of *novel metaphors* (i.e. metaphors that are both marginally sedimented and strongly motivated) among the totality of metaphors and the totality of turns taken will be higher in the anxiety sample (AS) than in the stress sample (SS).

The proportions of the respective categories were controlled through counting the instances (tokens) and comparing them with both the total number of metaphors produced, and the *turns* taken for every psychotherapy transcript in the sample and every sample type (*anxiety sample* and *stress sample*).[9] The results of a statistical analysis of the data are presented in the following chapter.

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[9] Given the way metaphors are treated in this thesis as non-reducible to single lexical items, normalization by the number of words would lead to a risk of underestimating the metaphorical content of the utterances produced the subjects that exhibit preference for longer and more elaborated metaphorical expressions. Hence, the number of turns was used as an estimate of the general semantic content of the transcripts in the two samples.

Chapter 4. Results

4.1. Introduction

As a result of applying the metaphor identification procedure described in Section 3.3.3 (MIP-KM) a total of 1015 metaphors across the two samples were identified. To illustrate the proportions of metaphors belonging to each of the respective categories (as explicated in the legend of Table 4) both percentages of each sample's total number of metaphors, and percentages of each sample's total number of turns taken, were calculated. Although no predictions were made about the overall number of metaphors identified in each sample, or the percentage of metaphorical expressions per all turns taken by the therapy clients, Table 4 demonstrates that the *anxiety sample* had produced more metaphors in total (see first two rows), while the *stress sample* had produced more metaphors per turn (see last two rows).

Table 4: The metaphors (M) identified and categorized in the anxiety sample (AS) and stress sample (SS on the vertical axis) in relation to the totality of turns (T) taken by the therapy clients in each sample; Strongly sedimented (SS on the horizontal axis), Weakly sedimented (WS), Marginally sedimented (MS), Strongly motivated (SM), Weakly motivated (WM), Marginally motivated (MM) and Novel metaphorical expressions (MS+SM) in absolute numbers (#), percentages of each sample's total number of metaphors (%/M), and percentages of each sample's total number of turns taken (%/T).

	M	T	SS	WS	MS	SM	WM	MM	Novel
#									
AS	558	2204	357	120	81	224	18	316	58
SS	457	1571	320	101	36	188	9	260	24
%/M									
AS			64.0%	21.5%	14.5%	40.1%	3.2%	56.6%	10,4%
SS			70.0%	22.1%	7.9%	41,1%	2.0%	56.9%	5,3%
%/T									
AS	25.3%		16.2%	5.4%	3.7%	10.2%	0.8%	14.3%	2.6%
SS	29.1%		20.4%	6.4%	2.3%	12.0%	0.6%	16.5%	1.5%

Section 4.2 presents results regarding the operationalized hypothesis S1 related to the degrees of motivation by the Sedimented level, while Section 4.3 is dedicated to S2 regarding the degrees of motivation by the Embodied level. Section 4.4 presents results regarding S3, which concerns the novel metaphorical expressions, i.e. those that exhibit both marginal degree of sedimentation (MS) and strong degree of motivation by the Embodied level (SM). To

complement the descriptive statistics that constitute the main part of this chapter, each of the hypotheses S1-S3 underwent an independent samples *t*-test.

4.2.   Motivation by the Sedimented level

Figure 3 illustrates the percentages of strongly, weakly, and marginally sedimented metaphors among the totality of metaphors identified in the two samples. As demonstrated, over 92.1% of metaphors identified in the stress sample were categorized as strongly (70.0%) or weakly (22.1%) sedimented, while in the anxiety sample strongly and weakly sedimented metaphors constituted 85.5% of metaphors identified. Correspondingly, in the anxiety sample 14.5% of metaphors were categorized as marginally sedimented – which was nearly two times more than in the stress sample (7.9%). The difference in proportions of marginally sedimented metaphors in the total number of metaphors between the AS and the SS was statistically significant (t = 1.918, df = 18, p = 0.035). Moreover, the difference in proportions of the sum of strongly and weakly sedimented metaphors between the two samples was statistically significant for both the totality of turns (t = -1.787, df = 18, p = 0.045), and the totality of metaphors (t = -1.918, df = 18, p = 0.035).[10]
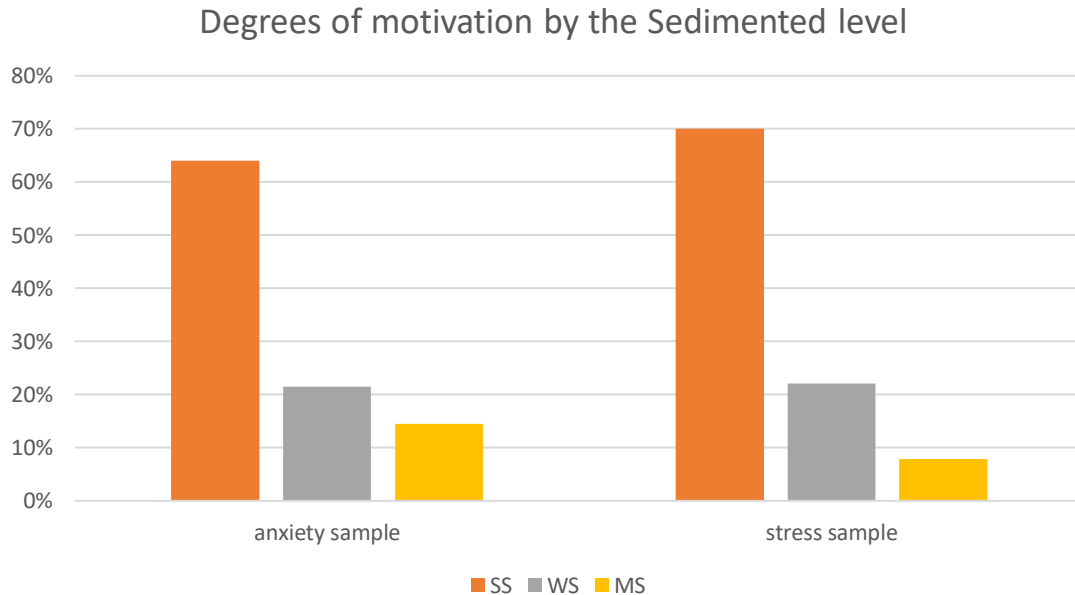
Figure 3: The three degrees of sedimentation (SS, WS and MS) in anxiety and stress samples, as percentages of the total number of metaphors in each sample.

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[10] Results of the *t*-tests are available in Appendix B.
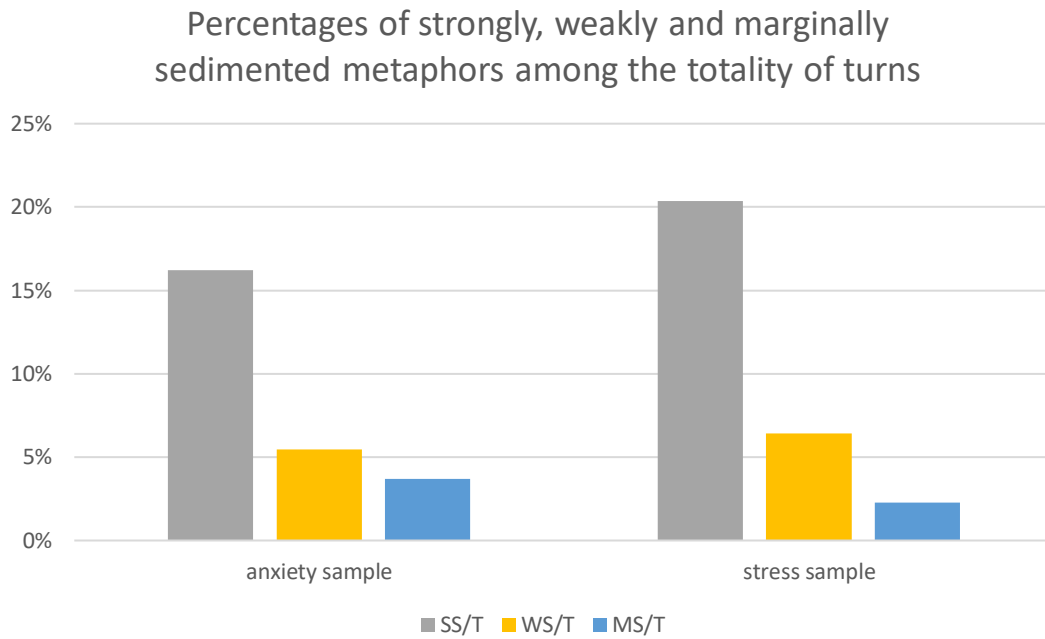
Figure 4: The three degrees of sedimentation (SS, WS and MS) in anxiety and stress samples, as percentages of the total number of turns taken by the therapy clients in each sample.

Although this was not explicitly stated in the specific hypotheses, the difference in the proportion of strongly sedimented metaphors between the compared samples among the totality of turns taken, as illustrated by Figure 4, was also shown to be significant ($t = $ -1.908, $df = 17$, $p = 0.036$).

Altogether, these results support the S1 (and its corresponding H1) hypothesis that the metaphors in the stress sample would be more strongly sedimented than those in the anxiety sample.

4.3.   Motivation by the Embodied level

As shown in Figure 5, the proportions of strongly, weakly and marginally motivated metaphors in the investigated samples were very similar across the two samples.

Degrees of motivation by the Embodied level

Figure 5: The three degrees of motivation (SM, WM and MM) in anxiety and stress samples, as percentages of the total amount of metaphors in each sample.

When divided by the number of turns, the percentages of metaphors that were weakly and marginally motivated by the Embodied level, did provide some support for S2, which predicted a higher proportion of weakly and marginally motivated metaphors in the stress sample (SS) than in the anxiety sample (AS), as shown in Figure 6. Nonetheless, given the fact that the stress sample had generated more metaphors per turn than the anxiety sample *in general* (see Table 4), and there was a somewhat higher proportion of strongly motivated metaphors per turn in SS than in AS, we may conclude that S2 was not supported.

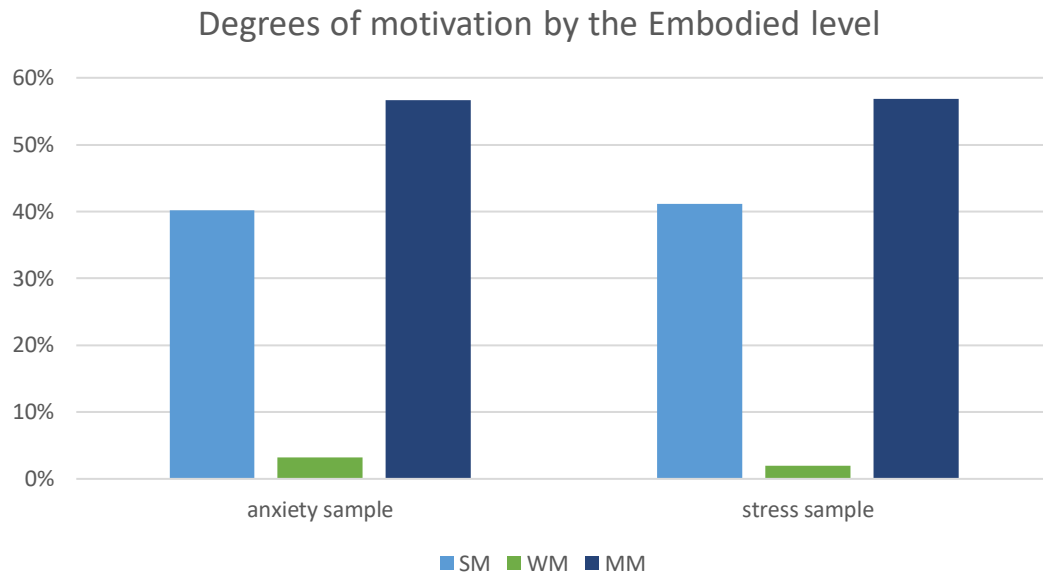Percentages of strongly, weakly and marginally motivated metaphors among the totality of turns
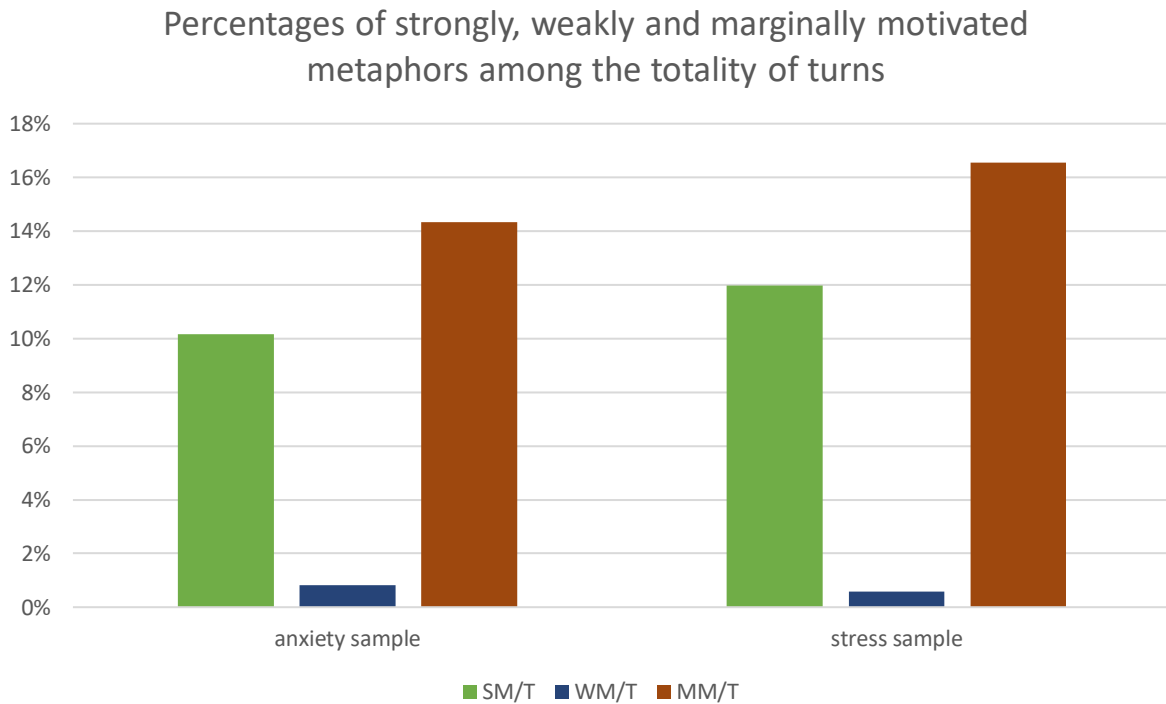
Figure 6: The three degrees of motivation (SM, WM and MM) in anxiety and stress samples, as percentages of the total number of turns taken by the therapy clients in each sample.

4.4. Novel metaphors

Figure 7 shows the percentages of metaphors categorized as both strongly motivated and marginally sedimented (SM ∧ MS) among the totality of metaphors and the totality of turns taken by the therapy clients in each sample. As shown, hypothesis S3 found some support given that novel metaphors were almost two times as frequent in the totality of metaphors in the anxiety sample (10.4%) than in the stress sample (5.3%). Moreover, despite the fact that in AS the overall percentage of metaphors per turn was lower than in the SS, there were more novel metaphors per turn in the anxiety sample than in the stress sample. This difference was shown to be marginally significant for the proportion of novel metaphors divided by the number of metaphors ($t = 1.503$, $df = 18$, $p = 0.075$), but not by the number of turns ($t = 0.607$, $df = 17$, $p = 0.275$).
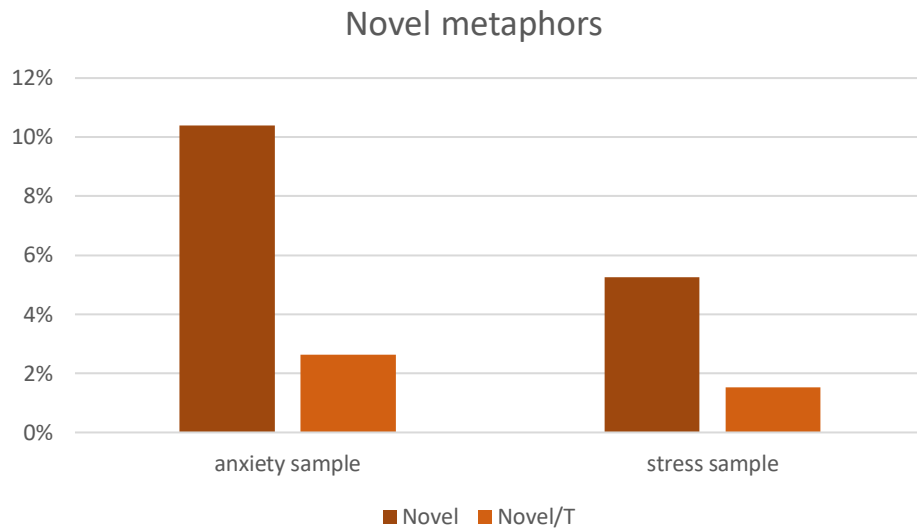
Novel metaphors

Figure 7: Novel metaphors in anxiety and stress samples, as percentages of the total number of metaphors (Novel) and as percentages of total number of turns taken by the therapy clients (Novel/T) in each sample.

In sum, the results presented here provide relatively strong statistical support to the hypothesis regarding the motivation by the Sedimented level (S1), but not to the hypothesis regarding the motivation by the Embodied level (S2). Hypothesis S3, regarding the greater amount of novel metaphors produced by therapy clients in the anxiety sample, was also supported, but with some reservation, given that the inferential test showed only marginal significance. The following chapter presents some qualitative interpretation of these results.

Chapter 5. Discussion

5.1. Introduction

The study described in the previous two chapters aimed at providing a multifaceted and nuanced view on the topic of the relationship between first-person experience of maladaptive anxiety and the use of metaphorical expressions, in close relationship with cognitive semiotics and the phenomenological tradition. As one of the goals of applying pheno-methodological triangulation is acknowledging the validity of first-, second- and third-person methods, the results of the quantitative analysis need to be complemented by a qualitative interpretation and possible explanations of the findings. The first two sections of this chapter discuss the results concerning the motivations by the Sedimented and the Embodied level, respectively. Then, the results concerning *novel metaphors*, as operationalized by this thesis in line with MSM, are discussed. Finally, the last section provides a summary and a brief reflection upon the limitations of this study.

The following discussion uses the general hypotheses stated in Chapter 2 as a point of reference. For the sake of convenience, the hypotheses are repeated below:

- **H1**   People who experience anxiety on average levels will describe their experiences of anxiety, worry and stress using expressions that are more conventional: more motivated by the Sedimented level of metaphorical meaning-making.

- **H2**   Strong and prolonged bodily experience of anxiety, which is not common to all people, may motivate the situated use of metaphorical expressions that are more strongly motivated by the Embodied level when describing their experience of anxiety.

- **H3**   People who experience maladaptive anxiety and its physical manifestations will use expressions that are more novel: more strongly motivated by the Embodied level than by the Sedimented level.

5.2. Differences on the Sedimented level

The results supported the hypothesis about the differences in metaphorical expressions produced by people struggling with maladaptive anxiety and people experiencing stress, with regards to motivation by the Sedimented level. Consistently with what was expected, people whose therapy sessions concerned their experience of excessive anxiety and worry produced

significantly fewer strongly sedimented metaphors than people whose therapy sessions concerned dealing with stress.

One can speculate that what caused these differences was a greater amount of intersubjectively shared conventions for talking about stress established within the linguistic community than is the case of anxiety and – even more so – anxiety disorders. However, it is important not to forget about more dynamic, context-specific factors determining what is conventional, what is shared, and what it yet to be explored. For example, it may turn out that in a group of highly anxious people discussing their experiences, a set of situated norms stabilizing metaphorical descriptions of anxiety within that group will eventually appear (Torstensson, 2019; Zlatev & Blomberg, 2019). On a greater scale – along with raising awareness about the topics of mental health, more knowledge, more conventions, and more meanings are likely to be shared more widely in larger communities.

5.3. Some differences on the Embodied level

As shown in Chapter 4, virtually no differences were found with regards to the Embodied level of metaphor motivation between the two analyzed samples. On the one hand, this can be considered as a falsification of hypothesis S2. However, before concluding that its more general counterpart H2 should be rejected, we need consider that there might be other factors at play, contributing to these findings.

One possibility is that the compared samples might have not been all that different, at least with regards to their bodily experiences related to the feelings of anxiety and stress. Working on the prerecorded data provided by a third-party actor greatly limits the possibility to control all the factors that may affect within- and between-group variation.

For example, one of the therapy clients whose transcript was included in the stress sample, was not only experiencing stress, but was also diagnosed with adrenal cancer. This experience was reflected in a series of metaphorical expressions categorized as strongly motivated by the Embodied level:

(20)   I always think I need to take more steroids because <u>being under stress it eats it [the adrenaline] up</u>, you know.

(21)   I guess, you never, you just take it for granted, especially adrenaline, you know, <u>if you need more, it just kicks in</u>

(22)   So, but it's like how much, like you know, <u>how far do I go so I don't use up too much adrenaline</u>.

Another example of a transcript included in the stress sample, which turned out to cover more than just the topic of stress, was from a therapy session with a client whose stress was caused by suffering from a systematic lupus – another disease that can dramatically affect one's lived bodily experience. Expressions such as (20), (21), (22), despite being interesting on their own, are arguably not the most representative for the sample of people who seek professional help with dealing with everyday stress.

An important factor that might have additionally skewed the results regarding the degrees of motivation by the Embodied level, are metaphors introduced to the discourse by therapists. Although such metaphors did appear in both AS and SS, it seems like there were some differences in the ways they were appropriated by the clients. For example, in some of the AS therapy sessions, therapists invited the clients to perform some *mindfulness* exercises which aimed at directing client's attention towards their experience of anxiety, guiding them through the experience, and asking them to describe their own impressions. In such cases, the sequences of strongly motivated metaphors, as illustrated in example (23) even though elicited by the therapist (T5), were appropriated by the client (S5F) to reflect their own experience:

(23)   T5: So can we construct a picture together ...(crosstalk)

            S5F: Alright.

            T5: So that, I don't know, I mean, my image was of a cloud, but it's really whatever it feels like inside.

            S5F: The cloud's good.

            T5: Okay?

            S5F: Okay.

            T5: Now, what are we going to do with it?

            S5F: What are we going to do with the cloud or what do we do, you know, about the anxiety?

            T5: That's the second question, but first we have to put the cloud somewhere.

            S5F: Well, in my mind, it's, <u>the cloud's not going very far</u>.

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T5: Okay.

S5F: <u>It's just going a little bit, because I know it's going to be back</u>.

T5: How far?

S5F: <u>How about still quarter inch of the picture</u>?

T5: Okay.

S5F: You know.

T5: So it's still a quarter, three quarters out, a quarter in ...(crosstalk)

S5F: Yeah, <u>just about three quarters out</u>, it's real, like, it's a dark cloud, so ...(crosstalk)

T5: It's a very dark cloud.

S5F: Yeah. <u>It's a strong cloud</u>. That's what <u>I'm picturing it as being</u>.

T5: And what's your sense of having a quarter of it into the picture?

S5F: It just shows that <u>I know it's there</u>.

T5: Okay. Which isn't ...(crosstalk)

S5F: And that <u>it's not going to go away</u>.

T5: Okay.

S5F: <u>I would like it to go away</u> but, <u>it's embedded in my head</u>, I keep thinking, there's always going to be something, there's always going to be some type of anxiety in my life and I think that, is that normal?

On the other hand, in one of the transcripts included in the stress sample, the therapist (T12) imposes a very concrete picture that gets picked up by the client (S12F):

(24)   T12: … You can imagine as kind of <u>energy or light</u>, however you want, whatever resonates for you, but imagine it <u>kind of filling you up and kind of radiating around you</u>.

(…)

S12F: Before you suggested that I experience it <u>as kind of light or an energy</u> when I was just thinking about those kind of self-affirmations, I couldn't even concentrate. But once you suggested that <u>I turn into an energy or light something like that</u>, then I was able to <u>turn my attention toward it much more easily</u> when I pictured at something else other than those thoughts.

T12: So you could feel it some?

S12F: Yeah, definitely. <u>And I saw it as like a light</u>.

T12: What was it like to kind of imagine it?

S12F: <u>I just saw a kind of light moving through my body</u> and <u>kind of like filling me up</u> and then <u>just kind of spilling out</u>.

This sequence contains 7 out of 18 expressions categorized as strongly motivated by the Embodied level in this transcript and constitutes 15% of all metaphors produced by this therapy client. Given the relatively small sample used in this study, this could have affected the results. Moreover, it suggests that elaborated descriptions of Vehicle expressions or reoccurring usage of the same Vehicles or same Topics in the discourse, which in this study served as indicators of strong motivation by the Embodied level (see Table 2), could have been in fact affected by the processes occurring at the Situated level of metaphor use.

Finally, it may be that the operationalization of motivation by the Embodied level of metaphorical meaning-making that contributed to the lack of support for S2. One of the goals of the categorization procedure designed for the purpose of this study was to operationalize motivation by the Embodied level as something that takes place in all truly metaphorical expressions. In contrast to one of the previous studies on metaphorical meaning-making from an MSM standpoint (Torstensson, 2019), this motivation was not operationalized as the amount of references to the lived body, but rather as the amount of attention brought to the (pan-human) analogy-based, iconic relationship occurring between the Topic and Vehicle of an expression on the Situated level. This shift made the motivation by the Embodied level more about *iconic* motivation than *bodily* motivation, which even though beneficial from the theoretical standpoint, might have not been enough to capture the differences between the compared samples, as expressed in the general H2 hypothesis.

5.4. Differences in novel metaphors

The study found at least some support for the general hypothesis H3 that the metaphors of people with maladaptive anxiety would contain a relatively large proportion of novel metaphors. The requirements of operationalization may, however, have weakened this effect as well. In line with MSM and its perspective on factors motivating the emergence and spread of metaphorical expressions, the current thesis defined (relatively) novel metaphors as metaphors motivated predominantly by the Embodied level of meaning-making. This led to the further operationalization of novel metaphor as a metaphor categorized as *both* strongly motivated (SM) *and* marginally sedimented (MS) (see Section 3.4).

Examples (25), (26), (27) illustrate such novel metaphors found in AS. They constitute a sequence of metaphors describing the participant's (S3F) experience of derealization, which is a common symptom of anxiety:

(25)   Uhm, well, what was happening when I had my eyes closed is that <u>I keep feeling like you were getting farther and farther away from me</u>.

(26)   And I'd, <u>I'd almost had to keep bringing myself back</u> to this like moment <u>it's almost like I was like floating away</u> and I was like, no, no, <u>stay listen to him</u> –

(27)   And I don't know how to, uhm, like it's almost part of me wants it to happen but <u>part of me is like clinging to stay inside my body</u>…

On the other hand, examples (28), (29), and (30) illustrate novel metaphors identified in SS. Even though these also convey participants' experiences, feelings and attitudes, they seem qualitatively different from those in (25-27):

(28)   I just feel like <u>I'm in a pressure cooker</u> like, you know.

(29)   I just can't <u>backpedal</u> to that point.

(30)   I called it <u>jumping from one frying pan into another</u>.

Though for the sake of metaphor categorization, all (28), (29), and (30) were not found in the lexicon or corpus, they seem to be derived from conventional expressions, such as *to be under pressure*, *to go back (in time)* and *to jump from one frying pan into the fire*. This can suggest that even the novel metaphors found in SS (in subjects without cooccurring illnesses; see

examples 20-22) were more conventional than the ones identified in AS. Nonetheless the differences may be too fine-grained to be captured with the current categorization procedure.

5.5. Summary

The current discussion illustrated and interpreted the differences found in the degrees of motivation by the Embodied and the Sedimented level of metaphorical meaning-making in the two samples of the data: the anxiety and stress samples. Most importantly it made it clear that that the way the specific hypotheses (S1-S3) were operationalized, may have been somewhat too careful, in relation to the general, theoretically-motivated hypotheses H1-H3. Thus, the fact that S2 was not supported should not be interpreted as strong evidence against H2, but rather as indicative of a still lacking satisfactory way to operationalize motivation by the Embodied level. Nevertheless, despite this careful and "conservative" approach, the support for the other two hypotheses, and in particular for the one concerning relatively *more novelty* in the case of metaphors concerning maladaptive anxiety than other more familiar topic, was strongly suggestive.

This discussion has supported the general conjecture that having a distinct, continuous, and uncommon bodily experience – whether it is the experience of an anxiety disorder or other illness, including purely somatic illnesses – can motivate the emergence of novel metaphorical expressions.

Chapter 6. Conclusions

The study described in the previous three chapters successfully addressed the relationship between first-person experience, available conventions, and contextual factors in motivating the use of metaphors in linguistic communication. In line with the Motivation & Sedimentation Model (MSM) described in Chapter 2, it concerned three levels of meaning-making: the Embodied (pan-human, analogy-based), the Sedimented (intersubjective, normative), and the Situated (actual language use grounded in the context). It compared differences between the degrees of motivation by the Embodied and Sedimented level within a comparable psychotherapeutic context, in metaphors produced by people who experience anxiety disorders or other forms of maladaptive anxiety, and people who seek help for managing stress.

In line with its cognitive semiotic profile, this thesis acknowledges the importance of combining first-, second-, and third-person perspectives in investigating meaning-making phenomena. This was done by recognizing the researcher's intuition as a valid tool and formalizing it so that it is intersubjectively accessible and systematic. Moreover, the goals of the thesis were not only to test hypotheses and construct a theory, but also to provide more conceptual clarity and to refine the key concepts. As mentioned in Section 2.2.1, cognitive semiotic research can be seen as a continuous loop between conceptual and empirical investigations. The aim of this chapter is thus to "close the loop" by returning to the research questions and reflect upon the ways in which this study enriched our understanding of both metaphorical meaning-making, and the Motivation & Sedimentation Model.

- **RQ1**   Does bodily experience of anxiety affect the emergence and spread of metaphors?

The findings of the study demonstrated that lived experience that varies among people – in the present case the experience of having an anxiety disorder or other forms of maladaptive anxiety – does seem to affect the use of metaphors, especially on one of the levels of metaphorical meaning-making, the Sedimented level. The study supported the hypothesis that the bodily experience of excessive and maladaptive anxiety may result in producing metaphors less motivated by the Sedimented level of linguistic norms and conventions.

Furthermore, a subset of marginally sedimented metaphors identified in this study was also found to be strongly motivated by the Embodied level of meaning-making, which is iconicity- and analogy-based. Such metaphors, motivated predominantly by the Embodied level and characterized by their high metaphoricity, were categorized as *novel*, as implied by the

theoretical framework that guided the study. These results suggest that experience of excessive or maladaptive anxiety may also motivate the emergence of such novel and consequently highly metaphoric expressions. Of course, such effect on metaphor production is not specific to anxiety disorders. It is likely that any "unconventional" experience expressed metaphorically may take a form of a marginally sedimented metaphor that is not (yet) present in lexica or corpora.

- **RQ2**   How is bodily experience of anxiety manifested in on-line metaphor use?

On the Situated level of on-line metaphor use the relative unfamiliarity of this type of bodily experience was manifested in numerous ways. Differences in motivation by the Sedimented level found in this study included a significantly greater proportion of marginally sedimented metaphors in the total number of metaphors in the anxiety sample, when compared to those in the stress sample.

Although a relatively stronger role of the Embodied level as motivator for metaphor use in the anxiety sample could not be established, this could have been due to the particular way in which it was operationalized, as discussed in Chapter 5. Further, as shown in Chapter 4, novel metaphors were found to be almost twice as frequent in the totality of metaphors in the anxiety sample than in the stress sample. Arguably, these results are indicative of both the highly embodied and somewhat "anomalous" nature of first-person experience in anxiety disorders.

- **RQ3**   Is there a considerable difference in the degrees of motivation by the Embodied and the Sedimented level in metaphors produced by highly anxious people and people who experience average levels of anxiety?

As already mentioned in the previous paragraphs, the study showed significant differences in motivation by the Sedimented level, and at least marginally significant differences in the use of novel metaphors, understood as metaphors motivated predominantly by the Embodied level (i.e. marginally sedimented & strongly motivated). At the same time, there were somewhat more similarities in the metaphors of the two samples than expected. For example, for both samples, the strongly motivated metaphors constituted over 40% of all metaphors produced and appeared in 10-12% of all the turns taken by the therapy recipients. This may suggest that the psychotherapeutic context, in which one shares often difficult details about one's life and is encouraged to share their experience, may by itself increase the degree of attention brought to the iconic relations between the two interpretations of a metaphor.

Returning to the conceptual side of the loop, this study managed to refine and operationalize some of the key concepts of the Motivation & Sedimentation Model of metaphor. First, this thesis spelled out an operationalization of the scalar notion of metaphoricity. It introduced the notion of *potential metaphoricity* as inversely proportional to the degree of motivation by the Sedimented level, and proportional to the degree of motivation from the Embodied level. The *actual metaphoricity* of an expression can in turn be established only on the Situated level (see Devylder & Zlatev, 2020) with specific contextual cues affecting the extent to which the attention is drawn to the tension between the two interpretations, and to the iconicity between them. Additionally, consistent with the *Career of Metaphor* model proposed by Bowdle & Gentner (2005), the present approach implies that metaphorical similes (as opposed to literal similes) are more likely to be motivated by the Embodied level (*weak motivation*, as opposed to *marginal motivation*), which increases their potential metaphoricity.

Second, the thesis proposed a novel way of operationalizing motivation by the Embodied level. Being aware that the Embodied level of MSM is not limited to the overt reference to the biological or phenomenal body, but rather reflects everything that enables us to perceive analogies, iconic relations and differences between different aspects of our life world (Zlatev et al, in press), motivation by the Embodied level was operationalized as the extent to which an expression highlights the iconicity and tension between the two interpretations. Inspired by the existing literature, the weak level of motivation was operationalized as the presence of clear distinction between Topic and Vehicle – either in form of simile (Bowdle & Gentner, 2005), or by the use of *pragmatic signals*, as described by Steen (2015). Finally, the strong level of motivation was operationalized as an elaborated description of the metaphorical Vehicle to convey the Topic. This included the presence of several semantically distinct metaphorizations of the Topic, structurally elaborated descriptions of the Vehicle and reappearance of a metaphorical expression several times in one therapy transcript.

Lastly, the thesis introduced a definition of a *novel metaphor*, not merely as a marginally sedimented one, but as an expression that is both strongly motivated by the Embodied level, and marginally sedimented.

Moreover, the study has indicated some additional factors that may affect metaphorical meaning-making and could be controlled for in future studies or explored on their own. The qualitative analysis of the investigated material showed that metaphors introduced in the psychotherapeutic context by therapists may have an effect on their clients. Such can lead to

further elaboration and constitute a *metaphorical trajectory* (Jensen, 2017; Cameron, 2018). The risk is, however, that may be simply repeated by the client, and that would result in problematic estimates concerning novelty and sedimentation.

Another factor that may affect metaphor use in therapeutic discourse, and thus should be controlled for, is comorbidity, i.e. cooccurrence and interactions between different medical conditions. This needs to be considered in studies on the relationship between different medical (including psychiatric) conditions and metaphorical meaning-making. As was described in Section 5.3, in some transcripts included in the stress sample the subjects did not only experience stress (the main reason they were seeking counselling) but also other health conditions, which affected the metaphors they produced, increasing the amount of strongly motivated metaphorical expressions.

In sum, this thesis has contributed to research on linguistic metaphors and their relationship with lived experience. Theoretically, it has provided a successful application of the Motivation & Sedimentation Model as a cognitive semiotic theory of metaphor to new empirical material. Hopefully, it may inspire future research and further refinements of the methods developed within MSM, and more generally.

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