EMOTION DIFFERENTIATION

Four stages of emotion differentiation in an emotionally influenced process of composing

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ABSTRACT

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Abstract

It is possible to compose a piece of music making all the decisions relating to the order of the notes without any emotion. There are for example different kinds of composing software available, which are based on artificial intelligence and music theory. The order of the notes can be decided based on the logic, for example according to a mathematic pattern. However, this is not always the case. In these cases the decision making process relies on some extend to the emotions; the notes are arranged after each other on the bases of how they feel like. It can therefore be helpful to try to maximize the utility of the emotions. This can be achieved by trying to understand them properly, to differentiate between them and to control and regulate the cognitive meaning attached to them.

A lot of discussion related to the emotion has been in the field of psychology. This thesis is using these advances as the basis of the discussion. It aims to find suitable psychological models and theories, and to adapt them to the practical process of composing. This is therefore neither a psychological thesis nor an attempt to try to find any universalities lying under emotion differentiation in general. This thesis has a subjective and intrapersonal point of view, which means its' aim is to sketch out the emotion differentiation process as it appears in first person point of view. In addition to psychology, this thesis has roots in the experience from a vast amount of practical composing projects I have done in recent years.

It can be argued that a number of factors related to composing, such as cultural context, musical understanding and social environment, all have an affect on emotions. Also auditory, visual, sensory and motoric processes are closely related to the emotions in the composing process. This thesis still focuses mostly on the cognitive emotion processing. Emotions are related to a wide range of subjects, so the emotion differentiation could offer a way to control the balance of all the different dimensions on the background of the composing process. This has the potential to help the composer to concentrate on the most important factors regarding the task.

This thesis goes thorough the history of the emotion research in the field of psychology and then focuses on the recent studies on emotion regulation and differentiation. The information is then adapted and used as the basis of proposed stages of emotion differentiation. The recognition, assessment, meta-evaluation and regulation stages aim to divide the emotion differentiation process into four different phases. The aim is to clarify and open the discussion of the concept of emotion differentiation as it appears to the composer. It tries to offer a way to look at the phenomenon in the practical composing work, and to look at how the emotion differentiation could be executed during the composing process.

Keywords
emotion differentiation, composing, psychology

1 PREFACE

It is possible to compose a piece of music making all the decisions relating to the order of the notes without any emotion. There are for example different kinds of composing software available, which are based on artificial intelligence and music theory. The order of the notes can be decided based on the logic, for example according to a mathematic pattern. However, this is not always the case. In these cases the decision making process relies on some extend to the emotions; the notes are arranged after each other on the bases of how they feel like. It can therefore be helpful to try to maximize the utility of the emotions. This can be achieved by trying to understand them properly, to differentiate between them and to control and regulate the cognitive meaning attached to them.

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2 ORIGIN OF EMOTIONS

2.1 Theories of emotion

There have been various attempts to define the common taxonomy of emotions, but so far there is not a single theory of emotion over others that could explain all the psychological mechanisms (K. R. Scherer 2005, Izard 2009). There have been several different attempts each addressing certain needs of the definition (James 1884, Lange 1887, Singer & Schachter 1962, K. R. Scherer 1987, Ortony et al. 1990). They are not necessarily competing against each other, but are looking at the phenomenon from a different point of view.

In the area of emotion research there are various aspects. Emotions are highly subjective and therefore it is difficult to compare them objectively. They are also often communicated thorough language, which by its nature is highly ambiguous; the true understanding of the meaning of emotion words differs between individuals and cultures.

Some of the first attempts of categorization of emotion concepts were *somatic* by their view. On the background of these approaches were the progress achieved in the field of biology, such as Darwin in his book *The Expression of the Emotions in Man and Animals* (Darwin 1872). He studied the emotion expressions of a wide range of animals and humans, and made a combined mapping of them. The James-Lange theory of Emotion is one of the first ones and it is also somatic by its nature. It was proposed independently by James (1884) and Lange (1887). It states that the experienced emotions are our interpretations of somatic reactions, and that emotions are results rather than the cause for action. This may be counter-intuitive to some people.

This view was criticized and later challenged by the Cannon-Bard theory, which states that emotion and *autonomic arousal* occur at the same time (Cannon 1927). This theory however does not hold any explanation of the mechanism for the emotion itself, a lack that was later addressed by cognitive theories. First of them was the Schachter-Singer theory, also known as the Two-Factor Theory of Emotion, which takes also the *cognitive appraisal* into account (Singer & Schachter 1962). Their study shows that the emotional experience is not fixed, and

a different emotional response can occur from a same physiological state. As widely the cognitive theories have been discussed, there is still no consensus of the "cognitive" element of emotions (Prinz 2004). Prinz took a surprising turn back to James-Lange Theory, giving weight to the somatic responses and stating that people label emotions cognitive only if they include representations in *executive systems*, which are located in the *prefrontal cortex*. In this view the cognitive meaning is a bodily by its origin. Other similar explanation was given by Laird (2007). He explained the cognitive elements of emotion stating that they feel cognitive at the *acquaintance*, but not by description, and that emotion and cognition follow from behaviour.

Neurological theories can also at some respect be seen as fundamentally somatic. They are based on the structure of the body and the nervous system. Therefore there are certain features and limitations that are determined by constrains related to the biological structure. One example of these neurological theories is the Homeostatic emotion approach (Bud Craig 2003). It emphasizes the role of emotions not to be only evoked by environmental stimuli (classical emotions), but also by internal body states (homeostatic emotions). The theory suggests that emotions are part of the system that regulates the functioning of the body.

Many of the earlier theories on emotion were bottom-up by their nature, and many of them hold the idea that subjective experience of emotions is formed from smaller basic emotions. This view that has been popular in history holds the assumption that the emotional experience is combined from fundamental emotions. Defining the fundamental emotions has been a goal for many emotion researchers and there have been many proposals for these basic emotional elements. Ortony et al. (1990) did a vast review and listed 11 different suggestions and the basis for their selection (Table 1).

Different selection basis for fundamental emotions		
Anger, aversion, courage, dejection, desire, despair, fear, hate, hope, love, sadness	A relation to action tendencies	(Arnold 1960)
Anger, disgust, fear, joy, sadness, surprise	Universal facial expressions	(Ekman 1982)
Desire, joy, pride, surprise, distress, anger, aversion, contempt, fear, shame	Forms of action readiness	(Frijda 1986)
Rage/terror, anxiety, joy	Hardwired	(Gray 1982)
Anger, contempt, disgust, distress, fear, guilt, interest, joy, shame, surprise	Hardwired	(Carroll E Izard 1971)
Expectancy, fear, rage, panic	Hardwired	(Panksepp 1982)
Fear, love, rage	Hardwired	(Watson 1997)
Fear, grief, love, rage	Bodily involvement	(James 1884)
Anger, disgust, elation, fear subjection, tender-emotion, wonder	Relation to instincts	(McDougall 2003)
Pain, pleasure	Unlearned emotional states	(Mowrer 1960)
Anger, disgust, fear, happiness, sadness	Other (do not require propositional content)	(Oatley & Johnson-laird 1987)
Acceptance, anger, anticipation, disgust, joy, fear, sadness, surprise	Reaction to adaptive biological processes	(Plutchik 1980)
Anger, interest, contempt, disgust, distress, fear, joy, shame, surprise	Density of neural firing	(Tomkins, S. S.), (Scherer & Ekman 1984)
Happiness, sadness	Attribution-independent	(Weiner, B. & Watson, J.B), (Carroll Ellis Izard et al. 1984)

Table 1. Different selection basis for fundamental emotions. From Ortony et al. (1990)

2.2 Categorization of emotions

According to Niedenthal (2008) there are two possible ways to try to categorize the emotions. The first one is empirical way, which addresses phenomena that "could be emotions" and then examines the possible underlying patterns. These approaches fall under the cognitive theories. The second one is semantic-primitives, which is building the emotion from simple, cut-down elements (primitives) and semantic-network accounts. These contain nodes for different emotions that are activated according to current emotion. These approaches try to address the issue from other way around. They try to define the often biologically founded primitives, and to take into account the explicit *knowledge* people have on their own emotions. People for example know that fear is associated with avoidance or flight response.

Wierzbicka (1992) tried to eliminate the role of language in the defining of emotion, and proposed a theory of semantic primitives. They are small particles stripped down from any excess meaning, and are used for compiling the elements of emotion. For example, she constructs the emotion *frustration* like this:

Frustration

X feels something

Sometimes a person thinks something like this

I want to do something

I can't do this

Because of this, this person feels something bad

X feels like this

It is important to differentiate the cognitive experience called *feeling* from emotions. A feeling is a broader and more subjective by definition and can occur even without an emotion. A person can have a feeling without an emotional component.

Other bottom-up directed core affect approach is the two-dimensional model by Russell & Barrett (1999). Their model consists of two axis, pleasantness and activation, and they argue that these dimensions can describe all core affects at any time. For example being *exited* or *elated* is a mix of activation and pleasantness. Russell & Barrett argue that this two

dimensional nature has actually been around in many different theories albeit with different labels and rotation degrees. The structure of the model is shown in the Figure 1.

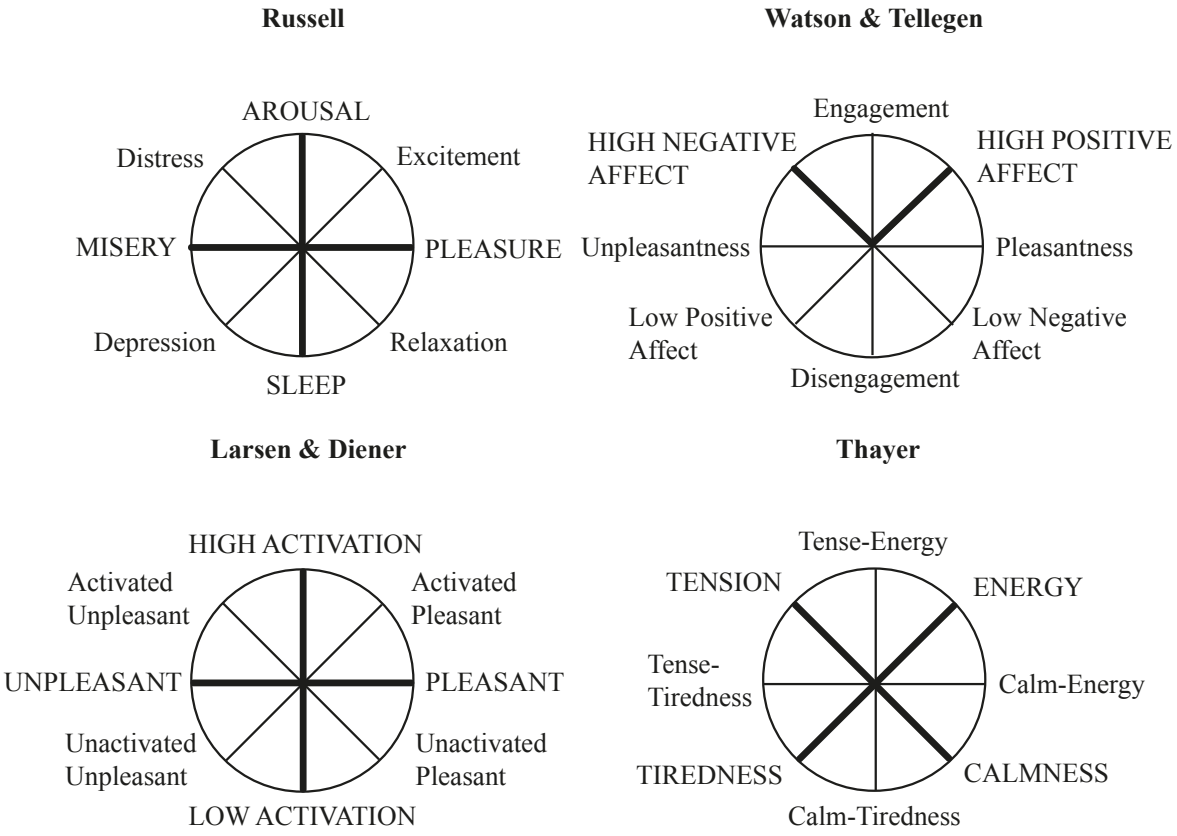

Figure 1. Four descriptive models of core affect. From Russell & Barrett (1999).

These different approaches have been trying to address the phenomenon bottom-up, starting at the smallest possible elements. They hold the assumption that by describing these fundaments they end up describing the whole emotional system. It is sometimes difficult to adapt these theories based on the fundamental elements to a higher level of cognitive functioning. In a subjective process of composing the view is by its nature top-down, and therefore the utility of the bottom-up theories are perhaps more useful in the emotion research than in practical applications.

2.3 The cognitive theories

Thorough the history in the field of psychology there has been discussion about emotion and the role and amount of cognitive elements needed to induce it (Scherer 1987). However, concerning emotionally influenced processes such as composing, the cognitive theories of emotion offer perhaps more practically applicable ideas. They have many benefits related to other competing theories. They are *dynamic* on a theoretical level, so they are more easily adapted and related to processes. They also propose some kind of idea for the thought patterns underlying the emotional experience.

One of such approach was the one suggested by Ortony et al. (1990) in their book *The Cognitive Structure of Emotions*. They argued that emotions could be understood thorough opening the cognitive structures and defining the patterns related to it. They see the structure of emotion formation by considering the emotion on a *valenced bipolar scale* (Osgood et al. 1957). Ortony et al. see this bipolar reaction related to reactions to events, agents and objects. According to them this gives rise to three basic classes of emotions: being pleased vs. displeased (reaction to events), approving vs. disapproving (reactions to agents) and liking vs. disliking (reactions to objects). These simple two-dimensional scales are further differentiated into groups of emotion types. A few examples of these classes are the *fortunes of others*, which is relating to the consequences for self of events affecting other people. To this class the related emotions are happy-for, resentment, gloating and pity. Another class under *actions of agents* is Attribution group, which is related to emotions pride, shame, admiration and reproach. Under *aspects of objects* there's an Attraction group, which is related to emotions love and hate. They argue that emotions can be differentiated from non-emotions by the valenced reaction. If a cognitive event can occur without resulting an

emotion (valence), it is not emotion. This leads for example to rejection of a feeling "surprise" from emotions, because a person can be surprised without a valenced reaction.

Perhaps the most relevant group related to the process of composing could be the Prospect-based emotions. It is located under classes *consequences of events*, *consequences for self* and *prospects relevant.* According to the Prospect-based emotions class, a confirmed *hope* leads to satisfaction or relief, and a confirmed *fear* to disappointment. According to the model the emotional experience in the process could also include social elements (under *actions of agents* and *self/other -agent*). A positive or negative result to these agents ends up to emotions *pride, shame, admiration* or *reproach* (Figure 2).

This view can also be reduced and seen related to the two-dimensional view by Russell & Barrett (1999), as it includes a valenced reaction as its basis. If it is reflected to the emotion differentiation in the process of composing, its most relevant outcome is the clarification in the structured opening of thought patterns, which are underlying the emotional experience. By giving a cognitive structure, it gives the possibility of figuring out reasons to the experienced emotions.

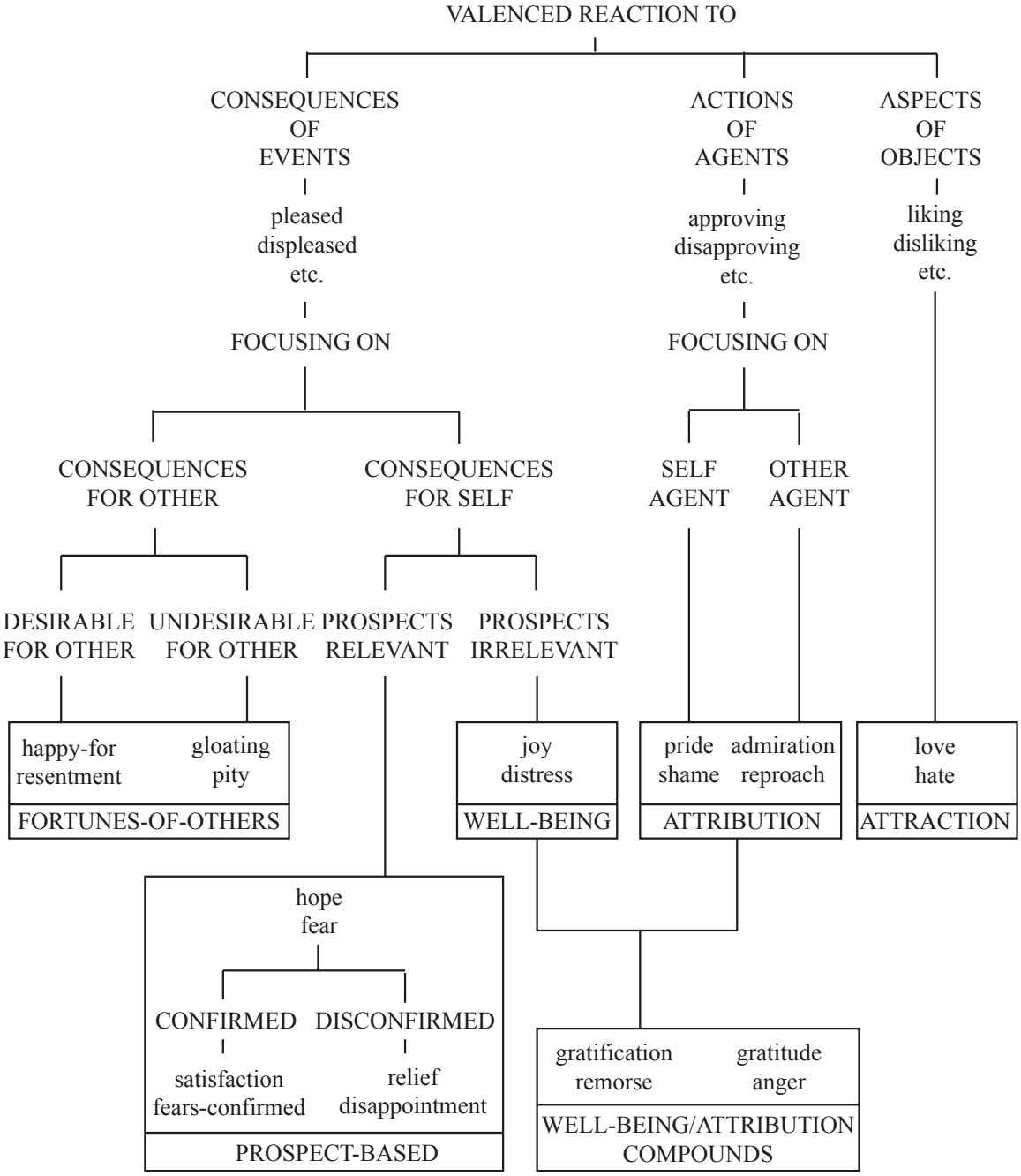

Figure 2. Cognitive structure of emotions. From Ortony et al. (1990)

Other dynamic and cognitive theory of emotion is the Component process model. According to its developer K. R. Scherer (1987) the emotion is seen functioning on five major levels:

"1) the evaluation of stimulus events in terms of their relevance for the individual's well-being, 2) the regulation of internal states to prepare the organism for action, 3) the activation of specific motives and action tendencies, 4) the expression and communication of reaction and intention, 5) the monitoring of and focussing on changes in organismic states."

Scherer's theory has thus a wider scope by taking into account more dimensions. According to Scherer the emotion differentiation occurs in five Stimulus Evaluation Checks (SEC). As the name suggests they are rather quick and not by nature demanding very high level of cognitive processing (Scherer 1987).

Scherer's emotion differentiation Stimulus Evaluation Checks are (1986) (Table 2):

1. Novelty check
2. Intrinsic pleasantness check
3. Goal/need significance
4. The coping ability check
5. The norm/self compatibility check

The first SEC called *Novelty check* tells whether the status quo of the individual can be maintained or if new processes or shifts of attention are needed. In this stage the affiliated emotions are *surprise* and *astonishment*. Note that here the surprise is again regarded as an emotion, differing from the views of Ortony et al. (1990). In the second phase called *Intrinsic pleasantness* check the pleasantness of the stimuli is evaluated in scale of pleasant-neutral-unpleasant. Here the affiliated emotions are *pleased, rapture* and *distaste*. In the third phase the Goal and need significance is evaluated. This includes five sub-checks, which are evaluating the relevance of the stimulus, probability of the concern relevant outcome, expectation, conduciveness and urgency. The coping ability check with sub-checks including evaluations related to causation, control, power and adjusting. The final phase checks the given stimulus relating the internal and external norms and self.

Scherer's (1986) three main themes are *personal concerns*, which relate to the survival, bodily integrity, fulfilment of basic needs and self-esteem. The second theme is *relationship concerns,* which relate to establishment, continued existence and intactness of relationships and cohesiveness within social groups. The final theme is social order concerns, which include sense of orderliness and the predictability in the social environments.

Stimulus Evaluation Checks in K. R. Scherer component process model as presented in the Geneva Appraisal Questionnaire (GAQ)
1 Novelty - Suddenness - Familiarity - Predictability
2 Intrinsic Pleasantness - Goal/Need Importance
3 Goal/Need Significance - Cause: Agent - Cause: Motive - Outcome Probability - Discrepancy from expectation - Conduciveness - Urgency
4 Coping Potential - Control - Power - Adjustment
5 Compatibility with Standards - External - Internal

Table 2. Stimulus Evaluation Checks. From K. R. Scherer (1987).

In 2002 a group of researchers from Geneva Emotion Research Group proposed a questionnaire based on Scherer's Component process model asking questions addressing different SECs such as "At the time of experiencing the emotion ... did you think that the event happened very suddenly and abruptly?" (Addressing novelty/suddenness SEC) or "At the time of experiencing the emotion ... the actions that produced the event were morally and ethically acceptable?" (#10 addressing the compatibility with external standards SEC)

Even thought Scherer has some interest on the biological foundations of the processes, the built-in hints of some kind of hierarchy of the motives is the theory's main benefit when reflecting its ideas to the process of composing. This is a bit similar to those of the theory of Maslow (1943), even thought they differ by their evaluation criteria. At least the early theories of emotion have tended to be more focused on the basic level of the phenomenon and have been seldom paying attention to emotions related to higher cognitive processes such as composing. Maybe the lack of unanimous agreement on the fundamental elements of the concept itself has something to do with it.

2.4 Different variables and dimensions of emotions

Emotions are shorter in duration than moods and therefore they are two different phenomena, albeit they are related to each other. Emotion is a shorter state where as a mood can last days (Frijda 1994). Mood can thus be seen as a long-term valenced bias on emotion, and it does not occur without "biochemical, psycho-physiological, and cognitive components as well as subjective reactions" (Thayer 1989). According to Frijda an emotion, affect (pleasant or unpleasant emotion) and appraisal (evaluation of the event) can all be seen in relation to objects. Mood lacks that dimension and can thus occur without an object relation.

Sentiments and disposition (sometimes called emotional attitudes) are similar in their relation to emotions. Frijda sees these as individual biases to experience certain emotions. Sentiments are even longer in their duration and can persist over a lifetime. Although sentiments and disposition are not emotions, they can also be seen related to objects or agents and the appraisal of these.

Similar intrapersonal phenomenon is meta-emotion (emotion on emotion), which can also be seen as a form of personal disposition. It is colouring the overall emotional experience in a

similar fashion than moods. Meta-emotions can be considered actual emotions, and are differing only by their intrapersonal nature. They can be seen as a biasing element. If a person has an emotion on a certain emotion, it can seem in a first person point of view as avoidance or preference of a certain emotional state. Another kind of concept is empathy. It is an emotion related to the emotion perceived or imagined in others. It is considered as an *automatic cognitive and affective tuning to another person* (Baron-Cohen 2004). A bit similar way of functioning can be seen in the case of anticipated emotions. In this case the reference point is ones own past experience, not another person as in the case of empathy. It is related to empathy in the sense that the emotion is based on expectation or prediction (Harré & Parrott 1996).

2.5 Non-conscious emotions

The concept of emotions may have its origin somewhere in fight or flight response or have some other kind of connection to the bodily functions (Cannon 1939). There has been a long division to the cognitive and emotional processes of the brain, but also some progress of integrating these (LeDoux 2000). They are connected even though the exact mechanism is not known. Emotions serve as a crucial information processing function, and this mechanism can be either conscious or non-conscious (Ortony et al. 1990). As a phenomenon, non-conscious or subconscious emotions will lead in an individual's subjective experience to a kind of automated behaviour, where only the action can be seen but the cause (emotion) for it is invisible. Non-conscious emotions can thus feel like an automated action without a clear cause. This broadens the role and importance of emotions to another level, even when there may of course be another non-conscious causes for action such as reflexes, routines or other automated patterns of behaviour. It is therefore not possible to label all unknown causes or intermediators for action as non-conscious emotions.

2.6 Psychology and the process of composing

Psychological theories and models as such are not easily adapted to the practical process of composing. Many of the models succeed in describing a certain phenomenon and they offer important labels addressing many demands, but offer little help related to practical processes. There are however few possibilities to use as the basis of development. Cognitive theories on emotion may offer a way to function as a frame of emotion recognition. Also the Scherer's

emotion differentiation model is a good candidate for use as a background of the emotion differentiation done in the composing process.

3 EMOTION AND MOOD IN MUSIC

3.1 Emotion–music relation

Many of the earliest attempts to understand the relation between music and emotions has hold an assumption that there are certain musical elements which have a certain meaning, and that an emotion is transferred from the composer to a listener in a somehow fixed way (Cooke 1959). Even if it may seem like that in a narrow intersection of culture and time, this cannot be the case. A piece of music can be interpreted in many ways depending on the individual. To be transferred perfectly, both the composer and listener have to share the same cultural understanding.

Music is often seen as a language, medium, consisting a set of codes that need to be interpreted in attempt to fully understand the meaning. This analogy is useful in the sense that it emphasizes the cognitive elements and therefore acknowledges the role of the culture. It also reveals the fact that music can, and has to be learned in order to understand it, proven by the fact that different cultures interpret the music in different ways. The level of understanding its subtleties increases over time under exposure, in a similar fashion as with actual languages.

The musical understanding is not however only cognitive by its nature. The study made by Perez et al. (1998) for patients with brain damage showed that the ability to understand music remains intact even after a brain damage causing amusia, a condition where the understanding and remembering of the musical pitch is impaired. According to Perez's et al. findings, musical understanding is highly consistent among individuals within the same culture and determined by the musical structure. If the musical understanding is not affected, it cannot be located entirely in the prefrontal cortex where the damage has happened, and is thus involving deeper parts of the brain. Although this clearly indicates that music is more than "just" cognition and that it is possible to enjoy music even if the music recognition and expressive abilities are severely impaired, it does not deny the existence of cognitive factors in non-impaired individuals (Peretz et al. 1998).

Musical experience can be directed by the descriptive discourse that surrounds music (Sloboda 1991). Musical experience has its origins rooted in the culture, individual growth and exposure of certain patterns of music (for example the internalisation of tonal relationships). In addition to musical elements, it is also influenced by non-musical information available from a piece of music. For example its status in the field of culture and the "informal sharing of experiences" between other people have an influence on the overall experience. The music not only communicates thorough sounds, but also contains other semantic information. It can for example be a connection to a style of music, a reference to some known cultural classes or some other semantic information. It is contextual and interpreted according to the given cultural context, and may require certain knowledge of the preceding history of culture, for example when including references to pre-existing musical pieces. The musical meaning is not limited to what actually is perceived, but also includes aspects such as "why" is that something there, and "how" does it relate to other existing pieces of music.

On top of this, also misinterpretation of the cultural qualities may have an impact of the emotional judgement of a piece. Summing all these together ends up to a highly complex, culture and time-sensitive semantic network, and when the countless sub cultural musical domains are added it becomes even more complex. This semantic expressiveness quality is an aspect present also in the process of composing, and it raises a lot of emotionally influential themes that are far more complicated if compared to a piece of music looked only in the light of a music theory.

In relation to emotion differentiation in the process of composing, it is not necessarily crucial to differentiate what is the actual path of emotion; is it because music is eliciting real emotions (emotivists) or is music only expressing or representing emotions (cognitivists) (Scherer & Zentner 2001). Scherer and Zentner proposed an adapted model of emotional communication based of Scherer’s earlier emotion induction model. The adapted model takes both the direct and mediated effects into account (Figures 3.1 and 3.2). The model is crafted based on the classical music, but it also sheds light to the multidimensional nature of emotion elicitation in general.

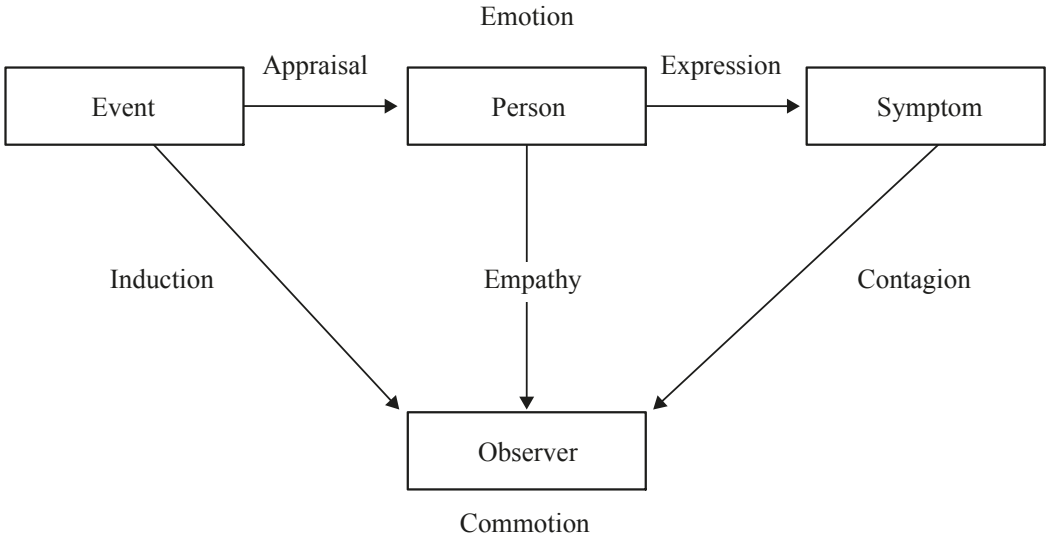

Figure 3.1 Model of *normal* emotion induction via appraisal (upper part) and mediated *commotion* due to empathy or other mechanisms of emotional communication (lower part). From K. R. Scherer and Zentner (2001)

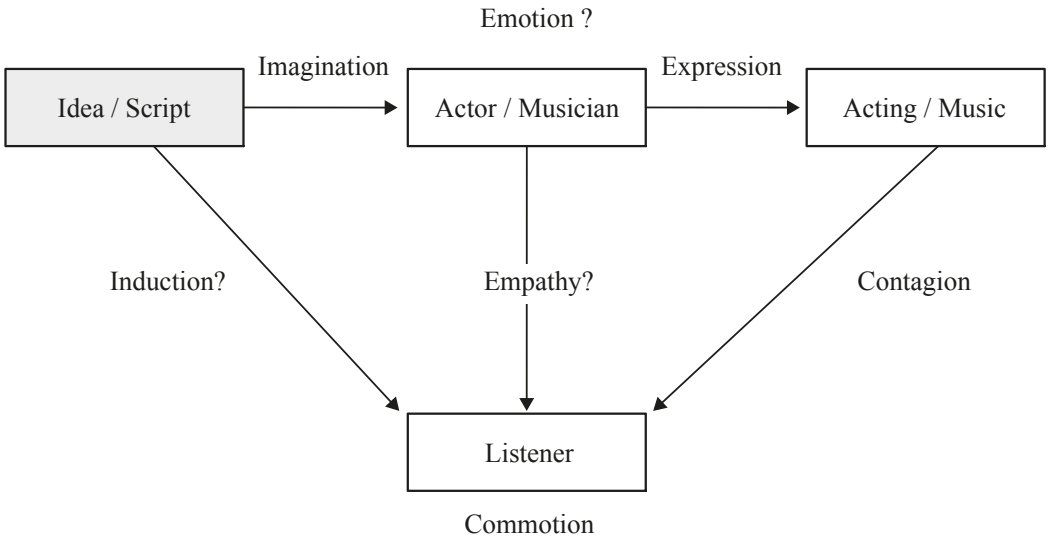

Figure 3.2 Adaptation of the commotion model in Fig. 3.1 to the case of listening to emotionally expressive musical performances. From K. R. Scherer and Zentner (2001).

3.2 Music and memory

Music has a big role in relation to memory. It often functions as an emphasizing component and a piece of music can evoke long-term memories and contain references to ones autobiographical and episodic information (Jäncke 2008). These are present not only in relation to the composer's own memory but also on a cultural level. For example a well known historical event can function as a reference point between the composer and listener if there is an existing link to a piece of music. The song being composed could for example contain a sequence of notes reminding a style of music associated with a historical period.

3.3 Music and mood

Music can be seen working as a change agent modifying mood state and also affecting emotions, either intensifying or releasing them (Sloboda 1992), or as a "framework which promotes the cognitive processing of emotional experiences" (Saarikallio & Erkkilä 2007). In Saarikallio & Erkkilä's study on the role of music in adolescents' mood regulation they found that music *"almost always improved the adolescents' mood and made them feel better (valence), it often intensified the existing affective experience and focused the adolescents' attention into their inner feelings (attention and intensity), and could sometimes help the adolescents increase their understanding over their experience (clarity)".* They also divided the psychological functions of music into four categories: identity, agency, interpersonal relationships, and emotional.

Based on the 2-dimensional model of emotion by Russell & Barrett (1999), mood optimization would bias the emotional state to desired direction (Figure 1). Assuming that an individual cannot fully exclude the effect of mood in the emotional appraisal process, it can be regarded as a possible component affecting the overall cognitive appraisal of emotions. The mood optimization effect of music has thus arguably an effect also in the process of composing, possibly biasing judgements and evaluations made during the process.

3.4 Music's relation to the emotion differentiation

In relation to the subjective emotion differentiation process, perhaps the most important effect of music is its own emotional effect. If the emotions related to the composing process and emotions induced by music are kept as separate concepts, the latter may have a distracting effect on the composer. The possible emotions induced by music may disturb by any of the ways mentioned earlier. It may alter your mood, bring non-process related memories or disturb by some other way. It may also be that the Scherer and Zentner's mediated effects may not be evident in the subjective emotion differentiation process and they can thus cause interference (Figures 3.1 and 3.2). This kind of distraction may clutter the composer's emotion differentiation process by causing excess and unwanted cognitive noise.

4. COMPOSING AS AN EMOTIONALLY INFLUENCED PROCESS

4.1 The process of composing

Here the term composing is used to refer to a sound-related and emotionally influenced creative process. This includes decisions based on complex appraisal processes in which the emotions have an important role. This process model does not take into account whether the composer tries to express emotions *per se*. In this context the composing does not mean the technical skill of composing a piece of music. It is not related to the theory of music or any other form of mechanical, inexpressive production.

According to Huron (2006) the intuition alone is not sufficient for creating novel ideas and that it is not useful due to its nature of being based on the previous and already known information. In this model intuition is a phenomenon in between emotions and decisions. It has to be kept in mind that the model is describing composing in a first person point of view, so the locations and labels are not describing the actual dynamic processes, but the experienced processes as they appear to the composer during the process.

Composing is fundamentally quite similar to other creative processes if not taken into account a few distinct features. First one is the music's effect on a mood, and the other the possible feedback-effect, where the composed music is having an effect to the emotional state when turning into a physical from. It is possible for a composer to work only in their mind without playing any instruments or getting involved with any sounds. In these cases the relation between actual and imagined music needs perhaps some further investigating. The physical dimension arguably brings additional means of functioning, even though the effect of imagined music can be surprisingly similar in relation to the physically perceived music.

Whether taking a *cognitivist* or *emotionist* approach to music–emotion relation, music can affect the emotions in a composing process. If the relation were by its nature more cognitivist, music would not have necessarily such a different effect when compared to other creative processes. If taking the emotionist view, the case would be different. Emotionist view has the emphasis on the low-level processes and it acknowledges the exclusive effect of

music over emotions, for which there is already some evidence (Levitin 2006). If this is the case, and if the emotions influenced by the music *cannot* be differentiated or are not different enough from the emotions related to other stages of the process, the composing process could form a feedback loop where the composition is gradually directed to a certain direction. Then the music is affecting the emotional stage, which is then affecting the decisions made in the composing process.

In psychology the term *locus of control* is used to refer whether a person perceives that success or failure as contingent on his own behaviour or independent of it (Rotter 1966). In practice this can be seen whether a person sees the results of his or her actions depending more on skill or chance. It is often thought that it is better for a person to be motivated internally than externally (Strudler Wallston & Wallston 1978).

Figure 4 draws connections between some of the emotionally influential elements. The act of composing is pictured as a dynamic non-linear process, and therefore all stages of the composing process (data production, evaluation, etc.) are not visible in the model. It differs by its aim from some of the classical design processes, such as Wallas (1926).

In the figure, the circle is representing both the locus of control, and the division between internal and external halves. In the composing process they are both present and are not mutually exclusive. There is still often a stronger emphasis on either one of them. The actual emotional connections from the circle can occur from either of the halves. The internal half contains personally important themes, and the external half contains for example social factors, which according to Leman (1999) depend on global, cultural, economical and political tendencies within a society.

From the output (composition) there are two pathways back to internal side. First there is a feedback loop to mood, which could possibly affect via mood regulation in a same manner than when listening to music (Saarikallio & Erkkilä 2007). There could also be a similar mechanism straight to emotion, but it is impossible to say at this point whether there is a direct link or is the link via mood sufficient.

Different elements affecting emotions in a process of composing

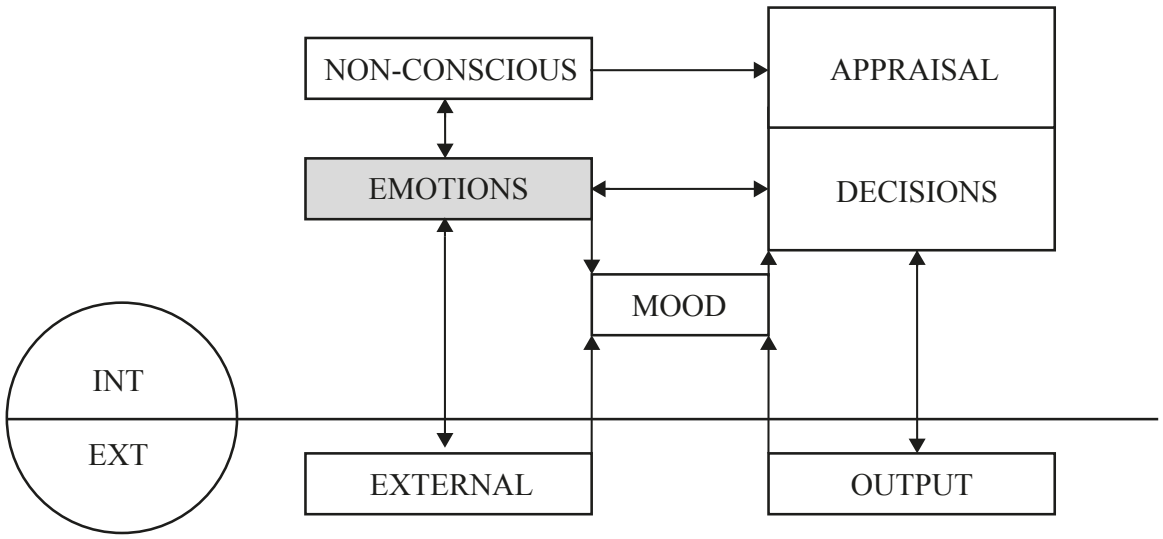

Figure 4. Different elements affecting emotions in a process of composing

4.2 Composing as a self-related emotionally influenced process

4.2.1 Motivation

There are several possible links between the composing process and emotions. One possibility is motivation. It is often divided into two categories based on the locus of control (Rotter 1966). Figure 5 shows types of motivation with their regulatory styles. A person with *internal locus of control* is motivated and thus rewarded by the process of working on the task itself, whereas a person with *external locus of control* is motivated from the external goals (DeCharms 1968). Ryan and Deci (2000) argue that there are three main innate psychological needs, all of which are intrinsic by their nature: *competence, autonomy, and relatedness.* Satisfaction of these needs lead to enhanced self-motivation and mental health. They argue that these are essential "*for facilitating optimal functioning of the natural propensities for growth and integration, as well as for constructive social development and personal well-being."* When compared, people with self-authored or endorsed motivation have more interest, excitement and confidence which manifest performance, persistence and creativity. This works also the other way around: extrinsically motivated person involved with *"excessive control, nonoptimal challenges, and lack of connectedness"* disrupts the innate tendencies, and this may lead to distress or even psychopathology (Ryan & Deci 2000).

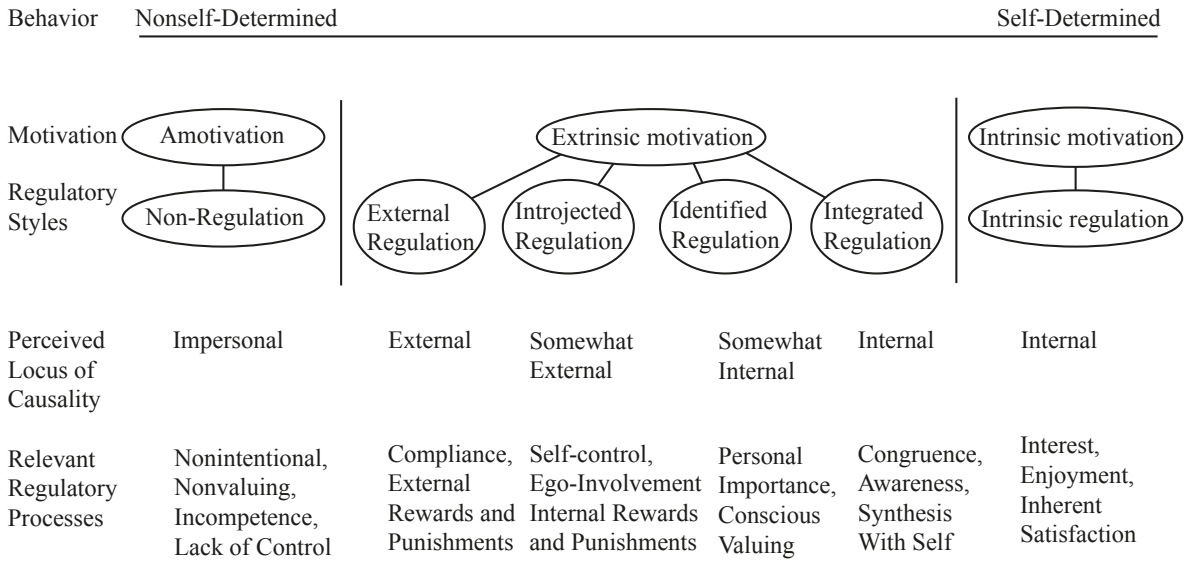

Figure 5. The self-determination continuum showing types of motivation with their regulatory styles, loci of causality and corresponding processes. From Ryan and Deci (2000).

4.2.2. Self-regulation

According to Mowrer (1960), people can regulate themselves by anticipating future pain (fear) or pleasure (hope). Similar ideas were later proposed by Atkinson (1964), who divided self-regulation between "hope of success" or "fear of failure", and Kahneman and Tversky (1979) who in their prospect theory distinguished between experiencing future pleasure or pain.

Higgings et al. (2003) compiled a table from different possible self-regulatory principles underlying hedonic regulation and they opened the different possible combinations. Regulatory anticipation is not related to the specific expectation of a particular outcome. People can avoid fear (anticipated pain) even if their general expectation of failure is not high (Table 3). The anticipation is not thus related to the level of expectations. Regulatory reference (II) is related to the approach principle relating desired end-state, so two people can have both a same desired end-state but their regulative principle can be either avoiding the undesired end-state or approaching the desired end-state. Regulatory focus (III) divides certain behaviours to two classes relating to the type needs it is related. According to Higgins

et al. for example when a child learns to regulate his or her behaviour, in a child–caretaker interaction the nurturance-related regulation involves a *promotion focus* and security-related regulation a *prevention focus*. The psychological elements and possible emotional elements related to this division of focus can be seen at Figure 6.

Self-Regulatory Principles Underlying Hedonic Regulation		
I. Regulatory anticipation	-Avoid anticipated pain	-Approach anticipated pleasure
II. Regulatory reference	-Avoidance regulation in reference to undesired end-states	-Approach regulation in reference to desired end-states
III. Regulatory focus	-Prevention -Strategically avoid mismatches to desired end-states (and matches to undesired) -Ensure correct rejections -Ensure against errors of commission	-Promotion -Strategically approach matches to desired end-states (and mismatches to undesired) -Ensure hits -Ensure against errors of omission

Table 3. Self-Regulatory principles underlying hedonic regulation. From Higgings et al. (2003).

This division between prevention and promotion can be applied to almost any human functioning. In relation to composing process this can be for example seen as related to the social outcomes, strategically approaching a desired end-state or avoiding an undesired effects in a social context. In an emotionally related context it is perhaps a bit more complex issue, because the desired emotional end-state is not always easy picture. In an ideal process

the end state would perhaps be an approach type principle, whether related to mood-regulation or the actual or imagined emotionally functioning effects of the final composition. Then the desired outcome is achieved by rather approaching the desired end-state than by avoiding the undesired one. In a reality they are not mutually exclusive and perhaps are both active. It is also possible that the desired end-state is not actually an end-state. The aim could also be the maintaining of the positive mood or to avoid the negative mood categorically.

Psychological variables with distinct relations to promotion focus and prevention focus

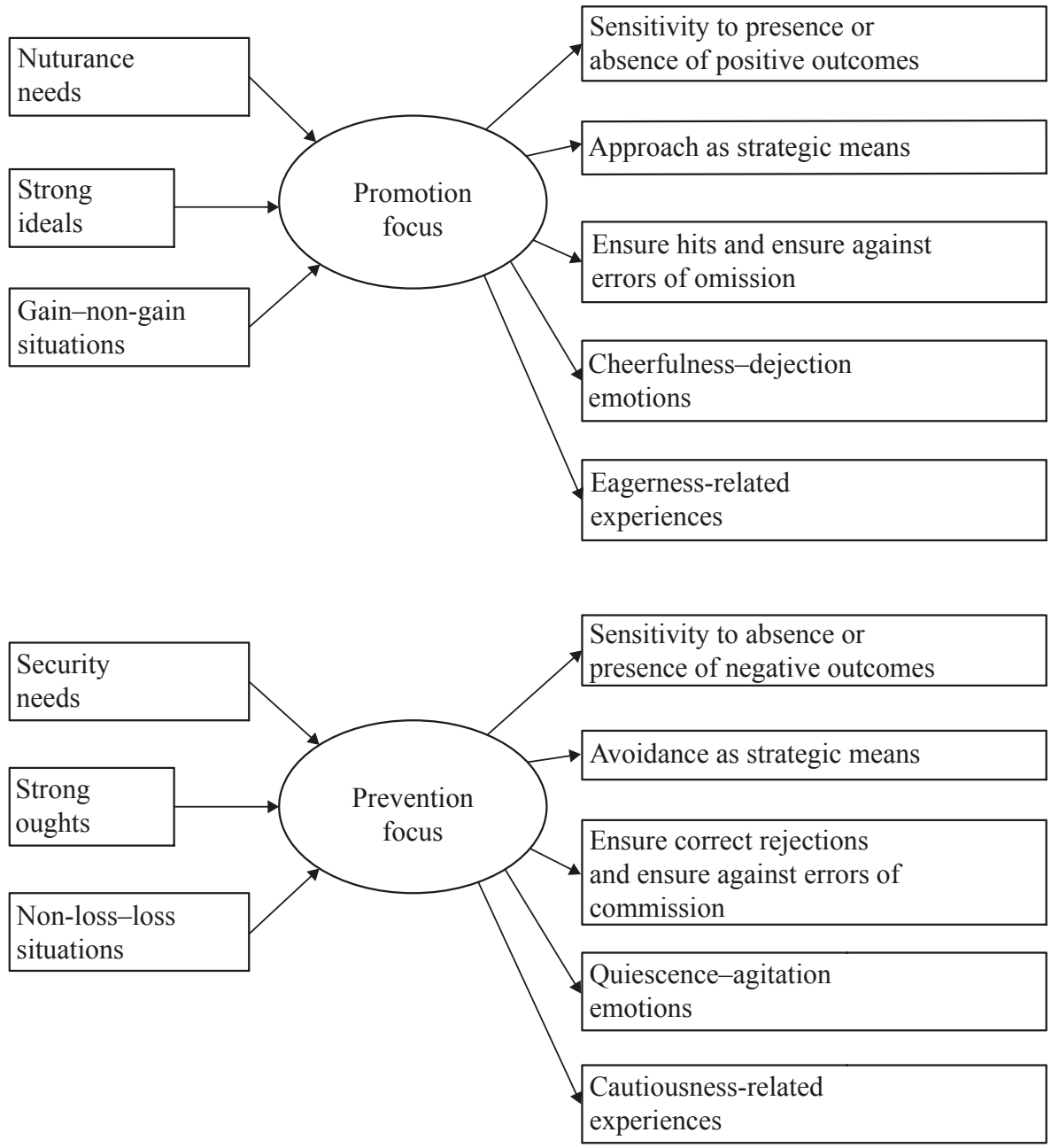

Figure 6. Psychological variables with distinct relations to promotion focus and prevention focus. From Higgins et al. (2003).

4.3 Self-actualization and mood

Self-actualization is a term often associated with the hierarchy of needs theory by Maslow (1943), but as in Maslow's theory, it is often kept more of a state or a stage of a process than an actual dynamic process. Self-actualized person is in the theory regarded as being on a highest level of needs when the low level needs are fulfilled. It is counter-intuitive in the sense that self-actualization can happen also by people on the lower levels of Maslow's steps. Creativity is not occurring only on a highest level of needs but it is integrated to all human functioning.

It is often stated that mood and mood disorders are closely related to creativity however misty the relation may be (Jamison 1989, Janka 2006). In a meta-analysis study by Baas et al. (2008) on mood-creativity research it was concluded that *"Creativity is enhanced most by positive mood states that are activating and associated with an approach motivation and promotion focus (e.g., happiness), rather than those that are deactivating and associated with an avoidance motivation and prevention focus (e.g., relaxed). Negative, deactivating moods with an approach motivation and a promotion focus (e.g., sadness) were not associated with creativity, but negative, activating moods with an avoidance motivation and a prevention focus (fear, anxiety) were associated with lower creativity, especially when assessed as cognitive flexibility."* It is however a bit more unclear how this works the other way around, how creating itself affects mood and how the mood–creativity link works as a dynamic structure. At this point it is safe to say that subjectively the creating process has an effect on mood, and this effect can be either positive or negative.

4.3 Emotions as a tool

Emotions can also be used as a tool in a process of composing, perhaps functioning thorough empathy as a reflecting platform. In relation to the composing process, an empathic or musical form of an emotion is perhaps a bit different than an *actual* emotion. An emotion in empathic or musical form has a different motivation for activation, and it is a mechanism that may be exploited in a composing process. It is important to distinguish between these different forms because they differ by their function and significance. If a *fear* for example is in an empathic form and thus has an external locus of origin, it is not exactly the same fear as experienced when one is actually being afraid of something. While composing, one might

fear of plagiarising someone else's composition and therefore avoid certain notes. The fear could also be seen as a musical mood in a composition, or seen as a possible end reaction for someone listening the composition. The musical and empathic forms of fear are a bit similar by their intensity and relation to true fear. They are a bit more safe and harmless to the individual, but nevertheless in close relation to the original emotion. Emotion is in these cases functioning as a reflection tool. This happens partly by playing with the idea of what it might be needed to induce a particular emotion in a given situation. If while composing the desired end result is imagined, but not experienced, the act is sympathic and purely cognitive without an emotional component. The same applies when related to the emotional content of music. If there is a desired emotional end-state or goal in the process, the empathy (emotion-as-a-tool) helps to guide to the right direction.

4.4 Composing and emotion differentiation

The composing is as a process involving a vast range of psychological elements and it is impossible to say a single need or function that the act of composing is related to. It is also evident that this is not a subject widely studied in the field of psychology, and that there is a need for adaptation of ideas from different fields. It may be a bit unclear how the composing is precisely affecting to emotions. It is however clear, that composing as such is affiliated with complex, emotion inducing topics and therefore it adds to the emotional diversity experienced during the composing process.

5 FOUR STAGES OF EMOTION DIFFERENTIATION

The emotion differentiation is a complex task, which is difficult to do accurately. There are number of emotions involved in composing process. Some of them could be useful and help to guide the process to right direction, and some of them are perhaps distracting or irrelevant. One possible approach of emotion differentiation could be the aim to try to exclude distractive or irrelevant emotions and assuming that the remaining ones are relevant to a given task.

There are several premises as the basis of this approach. Some of the emotions are useful in rapid decisions, but they may also occur for some other reason (Scherer 1987). In order to utilize this potentiality of emotions, it could be useful to correctly recognize and assesses them. This means that the emotions that contribute to the giving task are given more significance whereas the emotions resulting from some other reason are given less weight. Failure to achieve this can end to the emotions function as distracting elements. This is of course based on the idea of having useful and not useful emotions, and it does not take the role of chance into account. It is also assumed that a person can analyse one's emotions and is capable of either enhancing or suppressing them at least to some extent by cognitive interference. The ability to do this varies naturally between individuals.

The emotion differentiation is here divided into four stages: Recognition, Assessment, Meta-Evaluation and Regulation (RAMR) (Table 4). The model is not linear, so each stage can occur at any time. There still is a loose natural causation between the stages. The model offers a way to divide the emotion differentiation in the composing process. It differs from other emotion differentiation approaches, such as Scherer's five different Stimulus Evaluation Checks in his Component process model. The Scherer's (1987) emotion differentiation model contains a sequence of results of five stimulus evaluation checks on three levels, and contains links to the central nervous system processing. The RAMR model is not aiming to explain how the emotion differentiation is precisely achieved. Its aim is to take a look at how the emotion differentiation is achieved in practice during the composing process. It assumes that it is purposeful to try to differentiate between emotions and that it is possible to try to emphasize the role of useful emotions. Achieving this by no means results a good

composition. Its aim is a better application of individual resources. Where Scherer's model is psychological and scientific, the RAMR model is focused on the intrapersonal and task specific differentiation process.

Four stages of Emotion differentiation in a process of composing

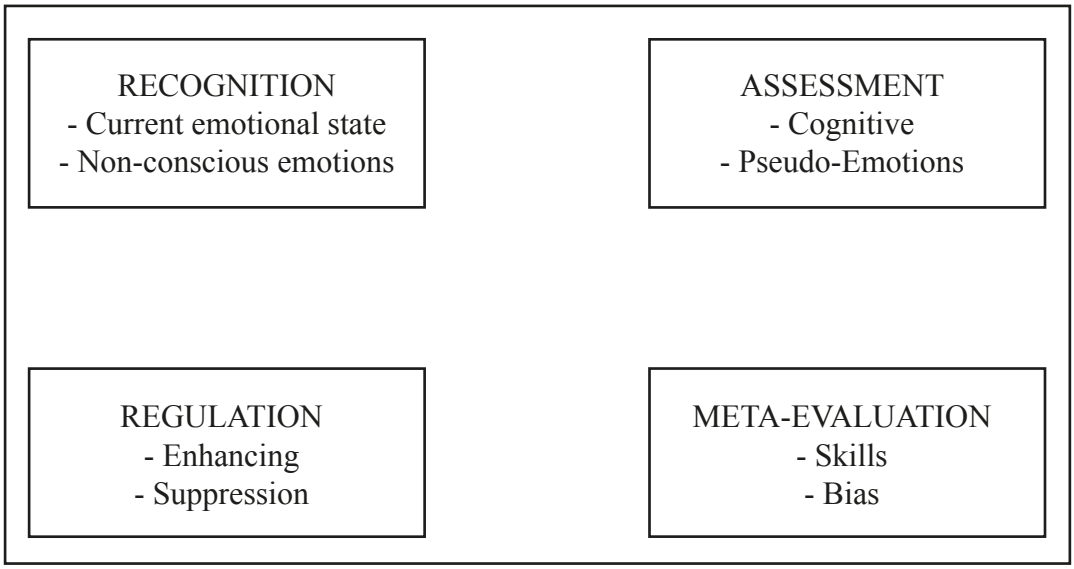

Table 4. Four stages of emotion differentiation in a process of composing

5.1. Recognition

5.1.1. Focusing on the current emotions

The emotion differentiation process starts by the defining the current emotional state. There are a few ways of trying to achieve this. One is by focusing on the current emotion signals and compiling a picture of the current emotional state. Recognition happens in relation to the limitations set by many elements. Cognitive emotional differentiation happens to some extent in the context of language. Therefore the functionality of the language and emotional labels provided by it sets a certain amount of limitations. Another problem related to the labelling is the abstract and gradient nature of the emotion classes. It is often not evident in which class an experienced emotion falls to and therefore it is a field of many possible recognition failures or misconceptions.

The ability to recognize emotions is related to the intensity and one's sensitivity to them. An emotion to be sensed and recognized has to be intense enough to pass the personal emotion detection threshold. The ability to recognize one's emotions is thus related heavily to the intensity of the emotion and sensitivity of the observer. This can be a dispositional feature or altered for example by the current mood. Sensitivity enables also the minor emotional signals to be taken into account and thus broadens the emotional scope. Even though it seems that it would therefore be easier to make decisions based on emotion, this is not necessarily the case. However beneficial the sensitivity might appear, it could also be possible that the excess amount of emotion(s) could cause a state of emotional saturation, where an intense emotional signal is overshadowing weaker signals.

5.1.2 Cognitive tracing

Another possible way of recognizing the emotions is to try to cognitively trace them. This could for example happen by adapting the ideas presented by Ortony et al. in the *Cognitive structure of emotions* (1990). Cognitive tracing is a process of drawing the possible cognitive agents and causations to the current emotion, and trying to find possible links between the agents and current emotions. In practice this is a bit similar to asking questions of one's emotions. This is not a new idea and it is also seen in Scherer's Component model questionnaire (Scherer 2005). In the questionnaire emotions are referred with questions such

as "How likely is it that E (event) would not be consistent with the person's image of him-herself)?" or "How likely is it that E violated laws or social norms)". As a method this could easily be adapted to a composing process.

It is of course always possible to misattribute the emotions, and it is often stated that people try to explain things in a preferable way. Therefore the cognitive tracing can also be harmful by giving false, but in a personal context preferable explanations to a given emotion. An example of this could be when a false emotion explanation acts as an excuse to not change the direction of a composition process. This can be misleading in terms of the progress of the process. In a similar fashion than that in James-Lange theory, it can be discussed whether the agent always precedes the emotion, and could it be that sometimes the agent explanation is applied to an emotion which itself is caused by some hidden agent. So when in cognitive emotion theories the question is what could be the cause *preceding* the emotion, in Neo-Langian fashion the explanation is *subsequent* to the emotion. The explanation or emotion label is added or given after the bodily state or actual emotion.

5.1.3 Non-conscious emotions

A more difficult subject is that of non-conscious and subconscious emotions. They are by definition not conscious and thus invisible from an intrapersonal point of view. It can be argued that they are by definition impossible to recognise, but there may be some ways to try to recognize these and to try to bring them closer to the consciousness. The first one is related to the cognitive tracing, where possible reasons for emotions are searched, and if strong, potential agents are found the emotions possibly resulting from these are observed and tried to bring to awareness. The other way is to try to find wrongly attributed strong emotions, where the current emotional agent is insufficient of producing an emotion of such intensity. This theme is related to the Assessment and Meta-evaluation stages.

5.2 Assessment

5.2.1 Cognitive assessment

After an emotion is detected, it has to be assessed by its relevance to a given task. This happens in relation to the cognitive tracing, because it needs some kind of cognitive labelling

or significance for the basis of this evaluation. Emotions are not always correctly attributed, so it is possible to make mistakes. It is however possible to try to eliminate the amount of wrongly assessed emotions by looking at an emotion and their cause agents in as neutral and objective manner as possible. This may be achieved by determining which emotions are a result of relevant cognitive patterns to the ongoing task and which are not. Relevant and irrelevant cognitive patterns are of course hard to determine, but it can be assumed that if the underlying motives and cognitive elements are considered important, the resulting emotion may hold some significance to the given task.

There are of course unlimited amounts of emotion–cognition links. And it is anything but clear which agents are in the end irrelevant to the task and which are not. Among possible irrelevant causes for emotions are fear and hope, which can both lead to the biasing of ones emotional state and to conclusions based on irrelevant assumptions concerning the process. One similar theme is meta-emotions. This kind of *emotion on emotion* could occur when a person is for example afraid of some emotion. This assessment is more of an emotional labelling and differs from the previous recognition stage. It is aiming to give the emotion a cognitive significance rather just trying to recognize them.

Many factors biasing emotional assessment are related to external sources, including social, cultural and financial themes (external locus of control). Maybe due to the multidimensional and complex nature, the assessment can be biased or mixed. This can alter the assessment process by favouring decisions made on the basis of possibly irrelevant motives. Many external themes, such as culture, are of course highly important in the composing process. It is nevertheless possible in many circumstances that these are functioning as distracters in relation to the composing process.

On a more general level, the assessment is about what significance a person gives his or her emotions. If an emotion is assessed as irrelevant, the assessment can be right or wrong depending of the true relevance. And because the true relevance is a vague term, it is hard to make exact judgements about the emotions. The right assessment means that an emotion is given the weight it needs and the possible potentiality of it is fully harnessed. This means also that the possible effect of misleading information is prevented.

5.2.2. Pseudo-emotions and denial

Besides wrongly assessed emotions, other possible distracting factor is pseudo-emotions. These are imaginary emotions that are not necessarily *real* emotions at all. These are emotions that are cognitively labelled or experienced as being an emotion but in fact are not. As a phenomena it is opposite of the denial of an emotion. A pseudo-emotion may result from a will to have a certain emotion. These could be related to fear and hope, and can include a want or need to feel in a certain way. There could for example be a hope as a background emotion resulting an imagined pseudo-emotion. It shares only the cognitive label of a real emotion lacking other emotional features. This is mostly based on the bad emotional reading skills and in practice is a wrongly attributed emotion in a first person point of view.

5.3.Meta-evaluation of assessment

5.3.1 Evaluation skills

The intrapersonal point of view of the emotion differentiation includes a strong meta-evaluation component. Due to the difficulties to achieve an objective assessment of one's emotions, it is beneficial to evaluate one's own evaluation. The assessment and recognition of one's emotions has to be evaluated on basis of one's personal evaluation abilities and this meta-evaluation factor has to be applied to the assessment done in the second stage. This happens by looking at the assessments in the light of the personal evaluation skills. This of course is not a simple process, and it feels that it even holds a paradox – how can a person with poor emotional evaluation skills correctly evaluate his or her skills of emotion evaluation? The emotional evaluation skills and ones *evaluation* of own emotion evaluation skills are however two different things. If a person feels that he or she is bad at evaluating emotions, the evaluations should not be given too much weight and these should perhaps be critically analyzed.

5.3.2 Evaluation bias

There are various issues affecting to the evaluation bias. Among the possible evaluation bias factors are questions such as "are there known or possible reasons for misevaluation", lack of information for example, or "is there a want to evaluate self in a certain way". There are also biases occurring from offsets of self-confidence.

In an intrapersonal context the mood could also play a role biasing the evaluation. Could a high mood resulting from music's mood optimization effect bias the judgment and thus affect the decisions made during the composing process? Sometimes excitement or heightened mood during the composition process can bias the judgment being too positive, whereas frustration or lack of self-confidence can bias the judgment to being more negative. To avoid the bias it is important to stay as neutral as possible in relation to ones emotions and to minimize the meta-emotions (emotions on emotions). The aim of avoiding the generation of too many cognitive thought patterns could lessen the excess amount of meta-emotions or other possible distracting factors.

5.4 Regulation

The emotion regulation is a vague term and it is used to describe a lot of things. Here it is used to describe the regulation of emotions in reference to an intrinsic regulation process: *regulation in self* (Gross 2008). According to Gross the regulation process many times has a hedonic tone and is used to refer to down-regulation of negative emotions. The maintaining or increasing of emotion can however be either on positive or negative emotion. Gross and Thompson (2007) draw a process model of emotion regulation, which highlights five different families of emotion regulation strategies (Figure 7). One of its key benefits is that it draws a picture of event or situation modification and relates it to emotion regulation process. It offers a mechanism of regulation. This kind of regulation can happen on many levels, and in a composing process it could be more vaguely related to the actual composing situation. It is still perhaps good to restrict it to only happen on a note-selection level.

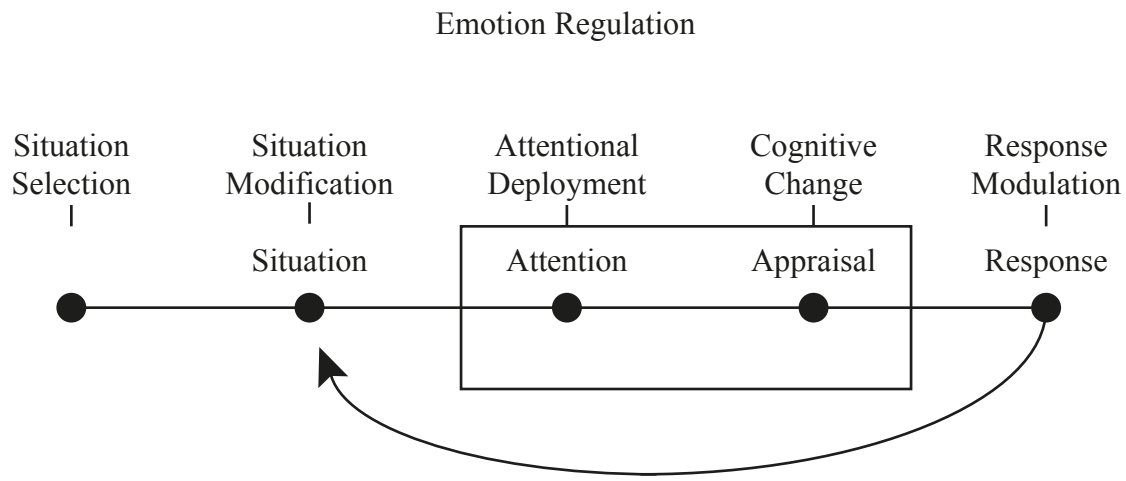

Figure 7. A process model of emotion regulation that highlights five families of emotion regulation strategies. From Gross and Thompson (2007).

5.4.1 Enhancing and suppressing an emotion

When the emotions are recognized, assessed and the personal assessment skills have been evaluated, the result is a situation where there are a number of emotions with some kind of label or meaning attached to them. These labels include a cognitive assessment of their relevance in relation to composing process. The negative category contains the detected and not useful emotions in relation to the process.

It is challenging to think of means for selective emotion enhancement, but the assessment done in second stage of RAMR model functions as one candidate. By giving a positive or negative assessment, one also gives a personal value and a significance account for the emotion. The act of suppressing an emotion is not any easier than that of enhancing them. It is nevertheless possible to suppress unwanted thoughts to some extend (Wegner 1994). The act of suppressing is an active way of emotion inhibition. How this suppression is precisely achieved in the composing process is of course a different question. In Table 5 there is one option of possible connections between the stages of the differentiation process. Here the Regulation is connected to the Recognition and Assessment, meaning that the Regulation does not act only by itself but is in a close connection to the other stages.

Emotion differentiation connections between different stages in the RAMR model

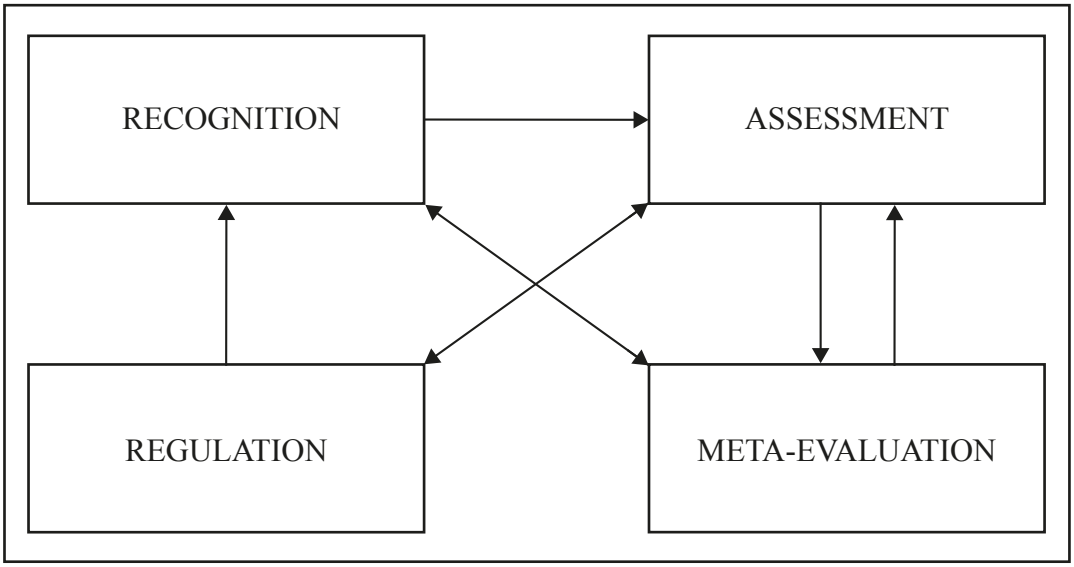

Table 5. Emotion differentiation connections between different stages in the RAMR model

6 PRACTICAL APPLICATION OF THE RAMR MODEL

6.1 The beginning of the composing process

The process of composing starts with some kind of starting state, from which it goes forward to a some kind of end result or an abortion of the process. If the starting point of the composing process is for example a single note, the following step is either one of the 12 notes or a pause. These kinds of decisions are not always made according to pure logic, although it is possible to compose completely based on mathematics. The question is not whether the composing is based more on logic or emotions, because it is clear that the composition process can involve an emotional component.

The emotional triggers in a composing process are not always easy to find out. Therefore a lot of information used as the basis of these decisions remains unclear. It can be argued that for example a cultural context, musical understanding and social factors can all have an effect on them. It seems that the affecting factors relating to the emotions are diverse and broad. Sometimes the reasons for the decisions may come clear afterward. It may for example occur that a composed piece of music is similar to some pre-existing piece, even if it has not been clear in the initial stage of composing.

6.2 Recognition and Assessment

The first stage in the RAMR-process is Recognition, where the composer tries to read the emotional input. When moving forward from the first note, we can try to read the emotions by asking questions such as what is the note that that *feels* most right for the next choice. This works also the other way around by asking is there a note or notes that feel wrong. In practice this selection of notes is not necessarily even appearing as an emotionally induced process. It may seem that the composition just came out of nothing. Because of this, often the emotional analysis happens after the actual process. It can therefore also be asked that what were the emotions that led to the result, or were there some emotions that guided away from some other decisions. If it is not obvious that there has been an emotional component, it can be asked what are the possible emotions that could relate to the actions taken.

If the selected option, instead of feeling good, rather feels *not* bad, there could be an avoidance inducing emotion on the background. An example of an emotion resulting this kind of behaviour could be *fear*. The fear may also blend to another emotion and therefore be disguised. Fear is a negative and avoidance inducing emotion, so therefore it may not seem to be playing a role if the composer is paying more attention to the positive, approach-related emotions. This means that if there is a signal suggesting to move forward to a certain note, it is not necessarily that the note itself has an approach related emotion, because there could also be an avoidance-related signal affecting to some other notes.

It is difficult to correctly attribute between these signals. Only thing the composer can do is to try to take all the possible emotion sources into account, and try to recognize and differentiate between the relevant and irrelevant emotional elements. This is even more complex in the case of non-conscious emotions which by their nature are invisible and almost, if not impossible, to recognise. If there is for example a strong non-conscious fear emotion, the composer can try to detect this by thinking of possible causes for this, and to try cognitively trace them. In the case of non-conscious fear, the emotion itself would be invisible, but the desire for avoidance and the cause for it could still be seen.

In practice, I usually test the decisions by reading the emotional state while trying out the musical ideas. I vary between different notes and try to recognise if there are emotions attached to some of them. It is important to distinguish between the musical "emotions" and the ones related to the composing process. The resulting emotion can be analysed for example in relation to the Russel & Barret's two-dimensional scale (Figure 1). In the figure, the Larsen & Diener's core-affect labels are perhaps the ones most easily adapted to the musical domain; a musical idea can be analysed on scales of activation (high or low) and pleasantness (pleasant or unpleasant). In the light of cognitive emotion theories, the analysis includes more complicated labels and questioning. Based on the cognitive structure of emotions presented by Ortony et al. (1990) in Figure 2, one possible route could be the approving or disapproving of agents. After that the valenced reaction, which is at the basis of the theory, would be examined focusing on the self. Here the related emotions are *pride* and *shame*. Continuing the route even further, the notes may have an emotion related to the well-being and attribution compounds, resulting either *gratification* or *remorse*. This kind of analysis is of course often difficult to execute while composing, but it may offer also some insight when reflected to the decisions in past composing processes.

This emotionality related to the decisions is easily mixed with the musically induced emotional effect of the note. The question is not about does the note *sound* good or bad. It is about the emotionality of the *decision* attached to the note. It is sometimes difficult to differentiate this emotion from the emotional effect of the music. Of course in many cases it is preferable that the musical decision sounds good, and this differentiation may seem counter-intuitive in the sense that a "right" decision is not related to the note sounding good. There are however many different, good sounding options when composing, and necessarily all of them do not have the positive, approach related emotional component attached.

6.3 Meta-evaluation

Prior to the composing process, many people have formed some kind of picture of themselves as personal emotion evaluators. This picture of personal emotional assessment skills is an important coefficient, which has to be applied in the cognitive weight one gives to ones own assessments.

If there is a recognised emotion resulting avoidance over a certain note, but the personal emotion evaluation skill is low, this assessment should perhaps be given a lighter weight. If it is unclear how to assess one's emotions, it is perhaps more safe to leave them untouched. This stage is simply telling how much importance a person should give to own emotional assessments.

Besides poor personal emotion evaluation skills, there are other factors causing biased judgements. For example a tendency to see oneself in a certain light can bias the decisions. If the composer for example has self-confidence issues, they may cause a bias in the emotional assessment. A lack of self-confidence can end up showing up in the decisions made during the composing process. It may function for example as an additional source of fear relating to certain notes. The musical decision may appear in the first person point of view as *too bold.* This shows up often as too safe and dull decisions. It could also result an imitation of other people’s compositions by trying to minimize the need for self-confidence by relying on already validated decisions.

When a composer is selecting notes, and not sure about the related emotional signals or assessments, they should perhaps be dismissed. In my work, on the meta-evaluation stage I'm

mostly lightening the weight of my emotion recognitions or assessments if I am not completely sure about them. Besides being related to the personal emotion recognition and assessment skills, this stage can also be seen as a single event parameter, which is determining how successful the individual emotion recognition and assessment has been in a given case.

6.4 Regulation

The final stage, Regulation, is perhaps the most difficult one to master. What to do with the emotion once it has been detected. If there is a fear from a source labelled as irrelevant, and it is resulting an avoidance action in relation to a certain note, how can one suppress this emotion? The personal importance that the composer gives to the emotion in the first stage can function as a personal importance coefficient. Besides that, there are perhaps not too many tricks one can actually do to suppress or enhance an emotion. In many situations the actual emotion regulation itself is not even necessary. One can leave an unwanted or irrelevant emotion signals unregulated, but can still ignore the actions these emotions induces one to do.

In practice the regulation stage is often done during the composing process. However, I have noticed that it is sometimes easier to ignore complicated or disorganised emotional signals while composing than to try to do something to regulate them. At the most basic level this stage is quite simple. Among the detected emotional signals, there are useful and not useful emotions related to the composing process. From these there are two kinds of actions that could be done: to give an emotion more significance or try to neglect it. This is a bit trickier than it may sound, and this stage needs to be examined further and reflected more closely to the actual real life composing processes to fully utilise the potential of emotion differentiation.

7 DISCUSSION

7.1 Conclusion

The aim of the RAMR model is to act as a starting point of the discussion related to the emotion differentiation in the process of composing. This thesis aims to clarify the complex subject by offering one possible way to look at it and to get started, and to sketch out the different possible elements affecting to the emotion differentiation process.

There are various psychological models on emotion and emotion differentiation, but they are as such not easily adapted to the composing process. The main idea was to look at the composing process and see if there are some findings in the field of psychology that could be adapted to the practical work. The most useful findings are perhaps how the cognitive emotion theories on emotion open up the relation of thought patterns and emotions. This cognitive tracing is one alternative to act as tool for differentiation and to detect one's emotions. Other interesting concept is Scherer's emotion differentiation model, which could perhaps be taken even more into account in the RAMR-stages.

The aim of this thesis is to compile the emotion differentiation knowledge gained from a vast amount of practical composing work, and to reflect it against psychological background. There is no single project or projects as the basis of the model. They are included in the form of a personal generalisation of the emotion differentiation concept achieved during a long period of time and multiple projects. It is of course a bit difficult for a reader to find out where and how precisely the experience as the basis of the model has come from, and how exactly it has affected to the concept. One further point of development could be to tie the model more tightly to a real world composing processes or to test the idea among other composers.

All the applications of the model are not necessarily interchangeable between individuals and especially if a person who is not familiar with the intrapersonal emotion processing, the model can be too abstract and vague. Also, due to the subjective nature of emotional

experience, it is hard to compare the cognitive emotional processing between individuals. The need to use the language as a medium adds to the complexity of comparison even more.

The differentiation stages succeed in my opinion to work as a starting point to look at the differentiation process, but it is clear that it is not a fully functional or a complete model. It can be argued that the four stages presented here are not necessarily the most descriptive ones, and they should be examined further. Also the term "stage" is not necessarily the best one to describe the nature of the phenomenon. However, with development and some kind of practical adaptation the differentiation stages could offer some kind of help in understanding how emotions could be differentiated from each other, and what kind of role they play in the composing process.

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