
This is an electronic reprint of the original article.
This reprint *may differ from the original in pagination and typographic detail.*

Author(s): Fachner, Jörg; Erkkilä, Jaakko; Brabant, Olivier

Title: On Musical Identities, Social Pharmacology, and Intervention Timing in Music Therapy

Year: 2017

Version:

Please cite the original version:

Fachner, J., Erkkilä, J., & Brabant, O. (2017). On Musical Identities, Social Pharmacology, and Intervention Timing in Music Therapy. In R. MacDonald, D. J. Hargreaves, & D. Miell (Eds.), *Handbook of Musical Identities* (pp. 682-701). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199679485.003.0037>

All material supplied via JYX is protected by copyright and other intellectual property rights, and duplication or sale of all or part of any of the repository collections is not permitted, except that material may be duplicated by you for your research use or educational purposes in electronic or print form. You must obtain permission for any other use. Electronic or print copies may not be offered, whether for sale or otherwise to anyone who is not an authorised user.

Chapter 37

On musical identities, social pharmacology and timing in music therapy

Fachner, J. *, Erkkila, J. ** & Brabant, O.**

* Anglia Ruskin University Cambridge, UK

** University of Jyvaskyla, Finland

*„....- when I was smarter, younger, cooler, braver, and on 150 mg of Effexor“
In „The medicated me“ from C. Norris*

Abstract

How do antidepressants or recreational drugs influence the music experience in the context of therapy or during music performance and listening? Using drugs to enhance performance we can describe a complementary interaction between lifestyle, personal identity and drugs, influencing musical identities in creative processes. Treating depressed clients with individual psychodynamic music therapy (MT) worked well with those also taking anti-depressants, but also initiated a process in which the need for medication started to decrease. While antidepressants may help to keep anxiety, energy loss and rumination within limits, MT induces a process in which emotional limitations are likely to become the target of change, mediated via work on the musical identity of the client, as exemplified in a case example. Research on chronobiological mood bias suggests that chronobiological conditions, drug profiles and musical identity should be taken into account. This chronobiological conditions, drug profiles and musical identity into account may help to identify performance peaks and optimise treatment schedules.

Keywords

music therapy, complementary medicine, antidepressants, recreational drugs, lifestyle, identity, emotion, performance, change, timing, chronobiology,

In this chapter we discuss the issues of musical identities from the stance of music therapy and social pharmacology. Social pharmacology focuses on the usage of drugs as a social and cultural behaviour. The aim of this approach is to understand or describe patterns of use and possible risk behaviour (Montagne 2004). However, in this chapter we are not interested in drug policy or economic conditions of drug markets, nor do we need to discuss the harms and stigmata of drug abuse. We want to discuss how drugs (in a wider sense all psychotropic substances), will influence processes of musical identities in different contexts, especially in music therapy, while interacting with the performance or perception of music.

One of the key ideas of music therapy is that music symbolically represents mental contents such as emotions, images, metaphors, associations and

memories (Erkkilä et al 2012). Musical experiences in music therapy are typically spontaneous and authentic, and many agree about the ability of music to permeate defense mechanisms (e.g. Summer, 2002). Thus, musical experiences in music therapy often reflect deeply personal qualities of a client including qualities caused by illness. Musical identity is therefore not separate from one's other identities or personal qualities in general. Musical identity is an important source of data when learning to know a person and the various factors that affect a person, including the factors behind their pathology.

In music therapy, it is important to create a context that enables the client to be as open, authentic, spontaneous and creative as possible. Winnicott (1968) parallels this kind of ideal therapeutic context to children's play and calls it "potential space". In this space of play, fantasy and imagination take place and "everything" is possible. In terms of illness, one's innate creative competences can be used for finding solutions for recovery and for gaining insights about the mechanisms behind illness. Music as an abstract, emotional and highly symbolic medium offers an ideal forum for fantasy and imagination, and is therefore very useful for therapeutic work as well (Erkkila et al 2012).

Here we see some parallel aspects to the use of recreational drugs. One of the reasons why musicians like to use recreational drugs -as for example demonstrated in Eric Clapton's statement below- is to stimulate creativity, to facilitate associative and divergent thinking, enhance emotions, memory retrieval and intuition. In short, to alter normal conscious processing in order to create new perspectives on artistic material (Fachner 2006). Here drugs act as a complement to music processing in order to expand the potential space of creativity. This process has also been utilised in a former version of Guided Imagery and Music, where certain pieces of mostly classical or jazz music were conducted in a thematic therapeutic sequence. LSD was used to stimulate emotions, evoke peak experiences, uncensored responses and associations and to open a path to the inner world of the client's unconscious (H. L. Bonny & Pahnke, 1972). In this context the specific drug action was utilised as a complement, and as a catalyst of therapeutic endeavours. For these reasons, all the factors that hide or colour aspects of one's [musical] identity are important to take into account in music therapy. Illness, such as depression, affects identity and may make sad music more sad, fearful music more fearful, and joyful music less joyful (Punkanen, Eerola, & Erkkilä, 2011a; Punkanen, Eerola, & Erkkilä, 2011b). This way music can reveal much about the client's current state, albeit that state is provisional and illness-dependent.

Musical identities in a continuum of conflicting drug effects

Medication, such as antidepressants, can also colour the client's way of being, in particular from an emotional perspective. These drugs may flatten or they may balance, but they affect the client and therefore have an influence on one's identity. However, the issue is not whether medication is a good or bad component of the overall treatment. Rather, it is to understand its effect on one's identity, as well as on the therapeutic work. Drugs such as psychedelics may totally change our musical experience and open up new levels of consciousness,

while antidepressants are meant to level and balance emotional activity. Typically, antidepressants will dampen intense emotional dynamics and sudden peak experiences connected to altered states of consciousness and lessen insights into one's unconscious. In short, we may ask, do antidepressants intrinsically hinder the occurrence of elements which are central to therapeutic processes in music therapy? What kind of influence do they have on the musical identity of a person?

A possible answer might be found in the processing on music and emotion in the brain and how musical identities, emotion and drugs interact. Music and drugs are sometimes linked together in that each change our emotions. Not only the manifold use and misuse of recreational drugs and alcohol in popular music culture has indicated this (Fachner, 2006; Shapiro, 2003; Van Havere et al., 2011); recent brain research shows that preferred, pleasing music is processed in the same areas as recreational substances (Blood & Zatorre, 2001). This has the effect of increasing cascades of dopaminergic interactions in cognition and reward systems (Menon & Levitin, 2005; Salimpoor et al., 2011) helping to distinguish where and when to place attention, including what in this particular moment is of personal importance and which current selection of perceptual and emotional content is consciously processed. What is processed in particular is of course depending on the musical identity of a person, i.e. on what in the music somebody is focusing on and what keeps or catches his or her attention, accordingly.

Music therapy reduces or complements medication

The partly similar brain activation of pleasure induced by drug action and listening to beloved music may point into two directions that music therapy may take when considering an accompanying use of medication: 1.) Music therapy may reduce the need for medication or 2.) Music therapy may complement the effect of medication.

First, activating brain circuits inducing pleasure gives rise to the hope that the right music therapy intervention, stirring up the emotions of the individual client at the right time, may *decrement medication* prescribed for mental health issues, as music can take over desired drug effects. For example, in a study with depressed clients comparing treatment with Indian 'relaxation' music or hypnotics the authors discussed that "*the effects of music could be equivalent to 10 mg of Chlordiazepoxide or 7 mg of Diazepam*" (Deshmukh et al., 2009, p. 76). However, when working with music in music therapy we are not simply replacing the medication with music, and prescribing certain music instead of pills, as we will discuss later.

Decrements have been demonstrated in music medicine employing music for example as an adjunct to anaesthetic medication (Ralph Spintge, 1991; R. Spintge, 2012). For example, sedatives are regularly administered before surgery to reduce patient's anxiety. However, sedatives often have negative side effects (drowsiness, respiratory depression, etc.), and may interact with anaesthetic agents, prolonging patient recovery and preventing discharge. Therefore, increased attention is being paid to the introduction of music to reduce medication during (Harikumar et al., 2006) and reducing anxiety before

(Bringman et al., 2009) surgery. These few examples may indicate that there is hope that we can use music as a decrement of medication.

Second, studying the interaction of music and pharmacological substances may help to identify music (therapy) as *a complement of medication*. There is evidence that musicians use drugs to stimulate the creation of music (Boyd, 1992) or to perceive the music differently, i.e. the drug adds something to the creation and perception of music (Fachner, 2006). For example, one prominent influence is on time perception, i.e. the passage of time seems to be perceived from an altered metric frame of reference (Fachner, 2011). How this is related to musical identities in a cultural context will be discussed later in this chapter.

However, the word ‘complementary’ means ‘in addition to’, as ‘allied to’ and is seen as an addition to standard care. For example, treating chronic pain with music therapy indicated that “music therapy is an effective adjuvant intervention for patients suffering from chronic non-malignant pain, doubling the effects of pharmacological treatment” (Nickel. et al 2005, p. 287).

Our own research into the treatment of depression with music therapy indicates that a complementary interaction between improvisational music therapy and antidepressant medication may facilitate standard care. Clients receiving music therapy and standard care significantly decreased in depression and anxiety symptoms compared to those receiving only standard care (Erkkilä et al., 2011). Later in this chapter we will take a closer look at this research study and a selected case to exemplify how the interaction between music therapy, the client’s musical identity and antidepressant medication may work in order to explore how music therapy reduces or complements medication.

Performed identity, individual treatment and timing

Both a decrement (reduction) and a complement of medication are desirable from the stance of personalized medicine. Prescriptions are ideally based on the bio-psycho-social identity of a particular person and not on a diagnostic classification only. Personalized medicine hopes to address the right medication based on genotypes and biomarkers reflecting the client’s biological condition (Holsboer, 2008), aiming to administer an individualized combination. While an antidepressant may be adequate for a moderate or severe depression it may not be the right choice for a first episode of mild depression. However antidepressant prescriptions are on the rise (Lönnqvist, 2009) and once the proposed ‘chemical imbalances’ are treated with antidepressants, it “*may reduce sense of self and soul into dopamine, serotonin, neurons, milligrams*” (Norris, 2011).

Further, there is increasing knowledge about the chronobiological component of drug action and the importance of determining the right time for drug administration (Smolensky & Peppas 2007). Depressive clients may feel worse in the morning than in the afternoon or evening, further we know about seasonal influences on depression. EEG measures taken in the morning exhibit different patterns of lateralization than in the afternoon, moreover, summer days would differ from recordings in late autumn (Passynkova & Volf, 2001; Peterson & Harmon-Jones, 2009). According to Aldridge (1989) we are “*patterned frequencies in a matrix of time*” and music resonates with these patterns that

became our identity. Therefore chronobiological perspectives on how deregulations of biological rhythms influence affect and emotion, how this relates to music (Tucek, 2006) and how this interacts with medication will be taken into account.

A healthy person's identity may fluctuate but may reveal a coherent structure of responding to varying contexts, while a person experiencing mental illness like depression, may be restricted in his/her choices of responding cognitively and emotionally. We may hear this in the way that this person would improvise. Improvisation in music therapy can represent one's 'free-floating' and healthy or a restricted and unhealthy musical identity, i.e. in the improvisation we can sense the impulses and hear the potentials and resources how this person could play if healthy and not hindered by the disease (Gold et al 2005, Nordoff & Robbins 1977). A free-floating, healthy identity might be understood as a flexible and dynamic use of musical opportunities while performing the self and creating music with a coherent and personal form of play. Instead, when under the influence of the disease one can hear restrictions that somehow represent the unhealthy form of a musical identity (Aldridge 1989/1996). However, when someone has lost his/her original healthy identity, one can hear when change is happening, or when it is the right time for the therapist to act. The influence of daytime and seasonal change is a known issue in depression, thus we are interested in the role of chronobiological aspects. In other words, if we are not in the right mood, when being drowsy or exhausted we may not be able to improvise in a creative way in music (therapy), to show our real, or appropriate identity. Although music therapy is adaptable to situations and individual circumstances, biological predispositions have an influence on our actual behaviour.

Performed identity I: Culture and drug use

Music and drugs may be linked, as we have already seen, and in this part of the chapter we discuss the importance of an appropriate context, a demand and interest for the interaction and a process to learn how to utilise this interaction for music-related purposes. Further, we will explicate how preferences for musical styles and how a corresponding drug use preference may reflect musical identity of persons.

A strong argument against any psychotropic substance including alcohol is that it may temporarily open up capacities for relaxation or agitation, it may help to focus or un-focus attention, in- or decrease distance to own emotions, amongst other things. In short, psychotropic substances may show the individual what is possible if the hurdles are overcome and point out what has not been recognized before (Blätter, Fachner, & Winkelman, 2011; Fachner, 2010). Baudelaire (1860) described that the state experienced 'under the influence' of drugs may suggest that this is not much different from moments of bliss in which all seems to go well (without the pills). However, depending on the pharmacokinetic and dynamic of the substance and its habituation involved, the danger arises of finding one-self on slippery ground, as a "*medicated me*" and a "*false sense of well-being*" (Norris, 2011). Nevertheless, drugs are tools that humans have developed

or discovered for various purposes and like all tools they can be used or misused (Moore 2008).

„To begin with, drink is very baffling and cunning. It's got a personality of its own. Part of the trap [of drugs and alcohol] is that they open the doors to unreleased channels or rooms you hadn't explored before or allowed to be open. A lot of my creative things came out first of all through marijuana. I started smoking when I was about eighteen or nineteen, and that would let out a whole string of humorous things as well as music. Then drink allowed me to be very self-piteous and opened up that whole kind of sorrowful musical side of myself. Unfortunately after that, the booze becomes more important than the doors it's opening, so that's the trap“ (Eric Clapton in Boyd, 1992, p. 199).

Neuro-enhancers, creativity and situational context

With the development of Prozac in the 1970s antidepressants became '*lifestyle agents, tools for unlocking potential and fine-tuning the self*' (Norris 2011). In recent years so-called 'Neuro-Enhancers' have become a means of boosting the brain's activity. Rolipram, Donepezil, Modafinil or Ritalin are discussed to help focusing and concentrating attention, improve memory function and maintain wakefulness. Although risk assessment of long-term use is in its infancy Neuro-enhancers are utilized widely and one common observation is that, although some results indicate an additive effect to cognitive abilities (Turner et al. 2003), a proof has not been satisfactorily shown (Moore 2008).

However, users report their subjective effectiveness, i.e. they have experienced and are convinced that these drugs would act as an enhancer. A similar observation -Weil (1998) refers to this as an 'active placebo'- has been made with psychotropic drugs that do not have a context-independent, solid internal assessment like for example opiates. In other words, Heroin will be the same independent of context, whereas drugs with a contextual bonding (Cannabis, psychedelics, etc.) are related to situational and personal matters. Drug effects cannot be separated from the situation in which the drug is taken. The rituals that accompany use and addiction are important elements in continued use and show the important ritualistic aspect of use and dependence (Blätter, Fachner, & Winkelmann, 2011).

Lifestyle and identity

In his book entitled "Waiting for the man", Shapiro (2003) advocates the thesis that each popular music style in the last decades was also the expression of a certain lifestyle, to be seen as related to the preferences in drug consumption on the part of the artists and the scene around them, who coined this style. From a socio-pharmacological view, the preference of a subculture for a certain drug has always been a kind of fashion to "turn on", i.e. to put them into certain physiological conditions in order to experience ordinary and extraordinary events, occurrences and moods more intensively and from a different perspective.

How are these physiological conditions shared in music appreciation and how does this relate to musical identities? In drug cultures and drug therapies it is a well-known tradition that drug effects may be influenced by a combination of set (physiological and psychological constitution), and setting (social and physical surroundings), and may be shaped with regard to the experience and

interpretation of sensual stimulation by drugs and context (Weil, 1998; Zinberg, 1984). The effect profile of drugs induces a temporarily similar socio-physiological effect of mood and cognition, for example the 'contact high' as described by Weil (1998) or the 'synch'-experience (Wolfe 1989) and a corresponding preference for external stimulating combinations. Jill Jonnes (1999, p. 119ff) describes the emergence of a 'lounge' setting of carpeting, dimmed blue light, armchairs etc. in the Harlem Tea-Pads (tea rooms) and jazz clubs in New York in the 1930s, which is also common in the chill-out area of rave parties. Musicians and dancers using marihuana in New York in the 1930s preferred a setting as described in a newspaper article in 1936:

"While whites often buy reefers in Negro night clubs, planning to smoke them elsewhere, sometimes they manage to gain entrance to a mixed-colour party. The most talked of reefer parties – excluding those of Hollywood – take place in Harlem. Early in the morning, when night club singers, musicians and dancers are through work, they gather informally – these affairs apparently are never arranged – and have a few drinks.

With their uncanny power for wheedling melody out of even the worst pianos, it isn't long before the crowd is humming, softly clapping hands or dancing in sensuous rhythms that have never been seen in nightclubs. There is little noise; windows are shut, keeping the smell of smoking weeds away from what might be curious nostrils.

Nor there is any of the yelling, dashing about, playing of crude jokes or physical violence that often accompany alcoholic parties; under the influence of marihuana, one has a dread of these things." (Anonymos, 1936, p. 8)

The question is whether such socio-pharmacological aspects of set and setting are to be considered as part of the drug culture, or rather as a socio-physiological, commonly shared and preferred sphere of regeneration, relaxation and conversation at dance events; as a place where people sit down or lie down in relaxed positions in order to regenerate or reflect, to chat or just dream away.

Playing Jazz music, smoking cannabis and talking in jazz slang "can also be interpreted as a 'way of life' characterized by specific identity postures and social performances of the artist's world, bohemians, the 'night people' etc."

concluded Curry (1968, p. 238) in his participating observations of jazz musicians and their audiences.

What becomes obvious in these lines is that there is a connection between a certain lifestyle, identity, time and place of listening to and creation of music. Personal history and lifestyle lead to an individual form of performed identity expressed in the preference of a certain music marking passages of personal experience (Aldridge, 1989). Thus, we may even identify a typology of drugs and their influence on the creation of a certain sound and musical genre associated with the drug, indicating an interaction of drug effects and music appreciation (Shapiro, 2003; Fachner, 2010).

Performed Identity II: Individualised treatment and medication use in music therapy

Now that we have sketched a model of how music appreciation under the influence of drug reward may work when embedded into a certain lifestyle and identity context, we shall try to understand how the effect of antidepressants is experienced.

'Antidepressants didn't change me much at first. They brightened mornings, softened edges, padded landings, tilted my horizon by just one or two degrees ' ... 'and keeping a whole mushy, messy part of life at a cool distance.' said Norris (2011) about his experiences.

What will happen in a therapeutic framework with clients habituated to antidepressant medication? In our study on individual music therapy for depression (Erkkilä et al., 2011) we found that about 70% of the participants (N=79) had medication, typically different types of antidepressants. Compared to standard care only, in the MT group (N=29) symptoms of depression and anxiety significantly decreased after 3 months of treatment, while global function increased (Erkkila et al., 2011).

From the 22 out of 29 music therapy clients receiving antidepressant medication 9 decreased, 9 maintained and 4 increased the amount of medication taken after 3 months of music therapy. An in- or decrease was evidenced in the amount of the psychoactive ingredient as reported from the clients. For example, one client received 120 mg Duloxetine, a selective Norepinephrine reuptake inhibitor (SNRI) before, but only 60 mg after Music Therapy. From those responding to music therapy, i.e. their symptoms decreased more than 50 % on the Montgomery Åsberg Depression Rating Scale (MADRS), 5 showed a decrease, 4 maintained and 2 clients increased medication after music therapy. Thus, about 60% of the 22 MT clients improved their depression status, while keeping the same level or increased their medication. The other 40% of clients decreased in their amount of medication.

This may indicate that music therapy worked well for those medicated, but also shows that it initiated a process in which medication started to decrease. We are looking at a paradox of decrements and complements of medication after music therapy. We may speculate that those maintaining the level of medication have not consulted their psychiatrist during treatment, but unfortunately we have not asked them systematically about this. Nevertheless, clients were becoming emotionally highly engaged in therapy, several issues of suppressed anger and frustration, loss of will and power were identified and turned into conscious processing (Fachner et al., 2010; Erkkilä et al., 2012). Although this is part of the therapy it may well be that the emotions, memories and cognitive processes evoked during therapy frightened some, and increased medication was one way of coping with it.

Clients' views of the effect of the antidepressants vary. Some said that they help in getting rid of overwhelming negative emotions and anxiety, which is a relieving experience. However, others started to complain about the flattening of their emotions as a result of medication. For some, this was an unpleasant experience whereas others felt that anything is better than the overwhelming hold of negative emotions. Some clients felt that antidepressants affect their personality. Feelings of being a different person are typically experienced as unpleasant. Depression is a long melancholic search for a lost identity and sense of self. The search takes a lot of energy, it causes withdrawal from activities that were part of the self, and anxiety becomes the leading emotional force hindering communication and work (Fachner et al., 2010).

However, there is convincing evidence that a combination of psychosocial support (such as psychotherapy) and medication together is the best treatment in the setting where psychotherapy acts as the initial treatment (Greenberg &

Goldman, 2009). A striking example of the dominance of medication in depression treatment is a Finnish study (Honkonen et al., 2007) that explored the treatments offered to people who were retired prematurely because of depression. That study revealed that 89% of the retired individuals during 1993 to 2004 never received any form of psychosocial treatment. Without a doubt, a better balance between the treatment choices could be achieved.

Antidepressants and musical identity - Maria's case.

It is important to emphasize here that the question is about a better balance, not about a mission that medication, such as antidepressants, is useless. For instance, in Maria's case, which will be introduced later in this chapter, an interesting finding was that the dosage of antidepressants was increased at the same time as the client's depressive disorders decreased. In this case we think that the decision to increase medication was right. Anyway, there is a need to increase psychosocial support, in particular psychotherapy related treatments, and to focus on finding an ideal interaction between chemical and psychosocial treatments. This is important not only because of the better overall effect but also because antidepressants are not harmless. Side effects such as sexual problems, insomnia and agitation, sedation, weight gain and loss, restlessness, agitation and nervousness are typical for antidepressants (Brambilla, Hotopf, & Barbui, 2005). Although side effects, and even the overall effect of the antidepressants, vary between individuals, it is easy to conclude that psychosocial help is needed not only for maximizing the effect of the treatment but also for special support when facing possible, intolerable side effects. Furthermore, a known problem of antidepressants is that it can take several weeks until the favourable effects take place and a better balance is achieved. However, during these weeks depressive disorders are also severe and thus weaken the patient's tolerance for additional side effects. Previously (Erkkila et al 2012; Fachner et al 2010), through describing Maria's case, we have illustrated, from the angle of creativity and brain states how music therapy improvisation can reflect healthy or unhealthy identities and lead to new insights on them. We also illustrate here how psychosocial treatment can vitally improve the client's condition, and how in Maria's case interaction between psychosocial treatment and medication (antidepressants) is exceptional.

Maria started music therapy at the age of 30 in a music therapy research trial, which offered 20 bi-weekly music therapy sessions, 60 minutes each. She had been suffering from depression since the beginning of her studies at university over ten years ago. She could study, and even work in her family business occasionally between severe depressive episodes. Her illness had postponed her graduation. She had received cognitive psychotherapy too but reported that it had not really worked out well for her. She liked music therapy because it was something more active also from the therapist's side, which she appreciated. Maria saw that her biggest problems were an inability to throw herself into situations and be spontaneous in social contexts. She also had difficulty in expressing negative emotions, something she was aware of before the music therapy process. She had problems in separating from the family, which she had recognized by herself earlier also. She had medication (antidepressants) for

depression before and during her music therapy process. Interesting in the context of this chapter is the interaction between music therapy and medication. She improved during music therapy from severe depression to no depression after 20 sessions, as seen in the MADRS, (Montgomery & Åsberg, 1979). However, the dose of antidepressants was increased from 100 to 150 mg Sertraline per day during the same period. One could assume that if the therapy works well, also the dose of antidepressants can be reduced, which was the case with 40 % of those clients who improved significantly in our study.

Perhaps the relationship between therapy and medication in a successful treatment does not always follow positive correlation. Maria, who evidently was benefiting from the combination of music therapy and medication, was very active in music therapy and really worked hard. Relatively quickly she understood how free improvising with the therapist was loaded with symbolic meanings often connected to her own psychological history, personality, relations, and to the aspects of her illness, in other words, to her healthy and unhealthy identities. Although at the beginning of the process Maria was rather avoidant, in particular regarding negative emotions, and not too energetic, this rather quickly changed. Towards the end of the therapy process, she worked through painful experiences accompanied with strong (negative) emotions such as anger and fear. On the other hand, Maria also became more energetic and more frequently showed her humorous side also. Not only was Maria hard-working in music therapy, when feeling better, she became more social and started to spend more time with her friends and relatives. Perhaps the most intense episode was a dramatic confrontation with her father to whom she had never before been able to speak about her real feelings, in particular early disappointments and pent-up anger. In a way she tested a new, or repressed identity in real life, after first dealing with it in music therapy. At the same time when feeling better, she also spent a lot of mental energy and was often confronted with negative emotions. Perhaps the increase of medication helped to balance the new dynamic life-style, where various exhausting situations and emotions now also existed? Maybe we can also conclude that sometimes medication (antidepressants) may also equalize the effect of intense therapeutic progress, which can include burdening and overwhelming aspects too?

From literature on depression we know that depression is typically related to the problems in expressing and regulating negative emotions (Joormann & Gotlib, 2010), even including a tendency to turn negative emotions against the self (Blatt, 1998). This was evident in Maria's case, in particular at the beginning of the music therapy. Depressed individuals have also been found to be avoidant towards stimuli, which represent high energetic arousal because they are suffering from a lack of energy (e.g. Beck & Brown, 1996). Maria often spoke about her life in the tight grip of depression, when she stayed at home with not enough energy to participate in many normal everyday activities, in particular if they included any kind of social activities.

Maria's way of expressing herself within free improvisation reflected her identity both as an individual with unique personal qualities and as an individual suffering from depression. Needless to say, these two identities can be very

different depending on the severity of illness. In an improvisation at the beginning of the process, the therapist took the role of Maria's relative who had been mean and dominating to her. Maria had just told the therapist how she often would have liked to speak out to that person about how she feels in these situations, but she did not have enough courage (or energy) to do it. In improvisation Maria stayed very cool and did not much change her musical expression although the therapist tried to play in a dominant and aggressive way. After the improvisation Maria said: "*This is just how I am. I was totally incompetent to change my expression 'though I recognized your provocative expression*". So, symbolically the improvisation offered a context to Maria for investigating aspects of her identity – this time those aspects affected by her illness. At the later stage of the music therapy, Maria could easily recognize the overall mood of an improvisation and connect it to her current state of being in illness. After a very 'dark' solo improvisation by Maria she said: "*I did not plan to play this dark way but it just happened*". The discussion ended up with Maria concluding that she is not totally healthy yet, and the darkness in a way reminds her of the possibility to become worse again. Maria's music therapy was very much based on investigating the 'sick' identity, and on developing and training the 'healthy' identity. Music therapy improvisation offers an excellent milieu for such a work.

How much of this identity development in therapy has been fostered or ceiled by medication, i.e. medication creating emotional borders that were helping her to develop a distance to her 'depressive identity' and to focus on the healthy potentials can only be speculated. However, she seemed to have the right medication at the right time to support music therapy (or vice versa). On the contrary, the 40 % of our clients that decreased their medication (see above) seemed to have realised that it was about time to reduce medication.

Performed identity III: Chronobiology, or why timing is of the essence

There are two important lessons that can be learnt from chronobiology (Palmer, 2002; Smolensky & Lamberg 2001): the symptoms accompanying a disorder usually manifest in a cyclical way, and the effects of a treatment vary depending on the moment of administration. This is not only true for somatic disorders, but also for psychological disorders, clinical depression being a very good example. Indeed, it is well known that people who suffer from depression experience their worst symptoms in the morning, with a gradual improvement as the day progresses. Eventually, in the evening, the mood of people with depression is almost identical to the mood of healthy individuals (Peeters et al., 2006). In addition to this circadian pattern, a seasonal effect has also been demonstrated, with mood being lowest in the autumn and winter, and highest in the summer. This difference applies to everybody, but it is much more pronounced among people suffering from depression, especially its seasonal form (Harmatz et al., 2000).

Since chronotherapy has already proven very beneficial in biomedicine, it stands to reason that a similar approach could successfully be applied to music therapy. As we have seen, improvisational psychodynamic music therapy encourages

clients to explore their thoughts, memories and emotions through musical expression. Therefore, applying the principles of chronotherapy to music therapy requires an understanding of the possible temporal fluctuations existing in mood states, music perception and the perception of self.

We just mentioned the cyclical mood changes that characterise depression. However, the existence of a diurnal pattern in mood fluctuation is also present in healthy individuals. Indeed, mood researchers using the Positive Affect (PA) - Negative Affect (NA) paradigm to describe positive and negative moods have repeatedly shown the existence of a daily cycle for PA and the absence of such a cycle for NA (e.g., Clark, Watson, & Leeka, 1989; Hasler et al., 2008; Murray, Allen, & Trinder, 2002). PA typically follows a bell-shaped curve, with low levels in the morning and in the evening, and a peak during the afternoon. There is strong evidence to suggest that this diurnal fluctuation is the result of endogenous rhythms, because the PA cycle is only minimally affected by idiosyncratic habits and lifestyle factors (Watson, 2000). On the contrary, in the absence of external stressors, NA tends to remain constant and low throughout the day, thus displaying no specific circadian rhythmicity.

The case in favour of using a chronotherapeutic approach in music therapy becomes even stronger if we consider that our mood states noticeably influence the way we perceive emotions. Indeed, numerous studies have demonstrated that our current mood creates a bias in our perception and assessment of emotions. Furthermore, this perceptual bias seems to be mood-congruent, meaning that it leads to an amplification of emotions matching our current mood and/or a minimisation of emotions having a different valence.

To take a few examples, Surguladze et al. (2004) concluded that compared to healthy volunteers, people with clinical depression were perceptually less sensitive to pictures of faces expressing happiness. In another experiment, when presented simultaneously with sad and neutral faces, people with depression tended to pay more attention to sad facial expressions (Gotlib et al., 2004).

Unsurprisingly, this phenomenon also applies to music perception. In a study about the role of mood and personality in the perception of emotions in music, Vuoskoski and Eerola (2011) found positive correlations between vigour (positive mood) and the ratings of happiness in the music, as well as between depression (negative mood) and the ratings of sadness. Punkanen, Eerola, and Erkkilä (2011) came to a similar conclusion in a study on emotional recognition and depression. They asked a group of participants with depression to rate the emotional content of musical excerpts and compared the scores to the ratings of healthy participants. The results indicated that participants with depression were having a judgement bias towards negative emotions.

Furthermore, Brabant and Toiviainen (2014) used the same approach as the two previous studies, but controlled for the time factor by testing participants at two different moments of the day (9 am and 4 pm). They discovered that sad and tender clips were rated higher in sadness and tenderness in the morning

compared to the afternoon. In other words, participants were more sensitive to musically-expressed sadness and tenderness at 9 am.

Interestingly enough, a bias similar to the one reported by Punkanen, Eerola, and Erkkilä (2011) has been observed by memory researchers. There appears to be a selective effect of emotions on memory, whereby people more easily retrieve memories when affective valence is matching their mood at the moment of retrieval. One of the recurrent findings is that people who currently feel happy recall more positive events and fewer negative events than people feeling sad (e.g., Bullington, 1990; Madigan & Bollenbach, 1982; Miranda & Kihlstrom, 2005). Obviously, the fact that our mood influences how we remember and perceive autobiographical elements has direct implications for our sense of self and our outlook on life.

To summarise the findings presented above, we know that some components of our mood states follow a predictable circadian rhythm, and that this is true for both healthy and depressed individuals. We also know that our current mood affects our perception of musically-expressed emotions and the retrieval of autobiographical memories.

The logical conclusion is that the efficacy of music therapy could be increased even further by combining all these elements and developing a chronotherapeutic approach. In this new approach, interventions could be adapted to the time of day and the seasons. Furthermore, sessions could be scheduled to take place at moments deemed optimal for the client's needs and the achievement of the therapeutic goals. In addition, knowledge of the time factor could help music therapists modulate their interpretation of the various events occurring in a session. Lastly, a better understanding of chronopharmacology, mood cyclicity and music perception can only be extremely beneficial for a successful combination of medication and music therapy.

Final remarks

Discovering and unfolding the musical identity of the client is part of the music therapy process. Various factors affect highly sensitive music therapeutic expression and interaction. Medication is one of them. Considering how the effect of antidepressants in the context of music therapy is experienced, we discussed that a decrement and increment may be part of therapeutic process, depending on the needs and the musical identity of the client.

There is a predictable rhythm behind the intensity of depressive symptoms, and this rhythm is both diurnal and seasonal. Furthermore, people's sensitivity to emotions fluctuates in a circadian manner, which affects not only music perception but also the sense of self through selective memory recollection. In other words, one's identity manifests differently – more melancholic, more positive – depending on the state of our chronobiological cycle at the moment of therapy. The effect of illness – which may take away part of our energy – and the effect of drugs – which may make us sleepy or cause insomnia – are additional factors that may also affect musical experiences and the therapeutic process.

Music and drugs seemed to be appreciated as a complement in several musical activities (Fachner 2006) in (predominantly) popular music culture and identity (Manning 2007). We have presented a model of how music appreciation may work alongside the positive stimuli and influence of drugs when embedded into a certain lifestyle and identity context. We discussed that this process needs an appropriate context, a demand and interest for the interaction and a culture in which to learn how to utilise this complementary interaction for music-related purposes.

The reason why music therapy may successfully replace medication is because it is able to substitute itself to both the drug effect and the placebo effect. These two elements are inherently present in the therapeutic response to any medication. Indeed, the overall treatment effect is always the result of the drug effect combined with psychosocial factors (Benedetti, 2009). The latter is directly connected to the placebo response, which could be defined as the activation of a person's innate ability to correct an imbalance and restore health. Music is able to trigger neurophysiological mechanisms similar to the ones activated by drugs (Salimpoor et al., 2011). Furthermore, music therapy can obviously be a strong activator of the placebo response as we defined it above. This last aspect is not to be neglected, since in the case of antidepressants for example, the psychiatrist effect has been shown to be at least as important as the drug effect in treatment outcome (McKay, Imel, & Wampold, 2006).

Drugs may in- or decrease the intensity of emotional moments and cognitive processes, although drug's pharmacokinetic effect varies according to the time-point of intake and phase of biological rhythms. Music therapy acts on kairotological principles of pivotal moments aiming for (emotional and cognitive) peak experiences to evoke change. Preferred music listened to at the right time itself may act like a drug and induce trancing, daydreaming, recharge, etc. (Herbert 2011). The difference for music is that it has no known side effects and is less likely to become addictive. In the light of the history of drugs, such as acting as different mind-enhancers, this quality of music shows its very potential. In particular, because psychotherapy, especially music psychotherapy, emphasizes phenomena that are considered beneficial for therapeutic work, such as the creation of 'potential space' and altered states of consciousness (Erkkila et al., 2012). This has been successfully employed in addiction treatment where, for example, vibro/physio-acoustic relaxation-induction and creative work on recall of addictive states and motivation helped to overcome gambling (Erkkilä & Eerola, 2010). Exposure to slow pulsations and monochrome sound induces a relaxation response, shifting attention focus and altering consciousness (Fachner & Rittner, 2011; Lee et al., 2012). If music can enhance the mind and change the state of consciousness, it must have a huge potential to uncover one's real identity.-It is perhaps also one of the relatively unique qualities of music therapy.

References

- Aldridge, D. (1989). A phenomenological comparison of the organisation of music and the self. *The Arts in Psychotherapy*, 16(2), 91-97.

- Aldridge, D. (1996). *Music therapy and research in medicine - from out of the silence*. London: Jessica Kingsley Publishers.
- Anonymous. (1936, 24th October). Topics of the day - facts and fancies about marihuana. *The Literary Digest*, pp. 7-8.
- Baudelaire, C. (1860). *Les paradis artificiels: opium et haschisch*. Paris: Poulet-Malassis et de Broise.
- Beck, A. T., & Brown, G. K. (1996). *BDI-II, beck depression inventory manual* (2nd ed.). San Antonio: Harcourt.
- Benedetti, F. (2009). *Placebo effects: Understanding the mechanisms in health and disease*. Oxford; New York: Oxford University Press.
- Blatt, S. J. (1998). Contributions of psychoanalysis to the understanding and treatment of depression. *J Am Psychoanal Assoc.*, 46(3), 723-725.
- Blätter, A. E., Fachner, J. C., & Winkelman, M. (2011). Addiction – Dynamics and Relations to Altered States of Consciousness. In E. Cardenas & M. Winkelman (Eds.), *Altering Consciousness: A multidisciplinary perspective* (Vol. 2 Biological and Psychological Perspectives, pp. 167-187). Santa Barbara: Praeger.
- Blood, A. J., & Zatorre, R. J. (2001). Intensely pleasurable responses to music correlate with activity in brain regions implicated in reward and emotion. *Proc Natl Acad Sci U S A*, 98(20), 11818-11823.
- Bonny, H. L., & Pahnke, W. N. (1972). The use of music in psychedelic (LSD) psychotherapy. *Journal of Music Therapy*, IX(Summer), 64-87.
- Boyd, J. (1992). *Musicians in tune - Seventy-five contemporary musicians discuss the creative process* (1 ed.). New York: Fireside, a Simon & Schuster imprimatur.
- Brabant, O., & Toivainen, P. (2014). Diurnal changes in the perception of emotions in music: Does the time of day matter? *Musicae Scientiae*, 18(3), 256-274.
- Brambilla, P., Hotopf, A., & Barbui, C. (2005). Side-effect profile of fluoxetine in comparison with other SSRIs, tricyclic and newer antidepressants: A meta-analysis of clinical trial data. *Pharmacopsychiatry*, 38(2), 69-77.
- Bringman, H., Giesecke, K., Thörne, A., & Bringman, S. (2009). Relaxing music as pre-medication before surgery: a randomised controlled trial. *Acta Anaesthesiologica Scandinavica*, 53(6), 759-764.
- Bullington, J. C. (1990). Mood congruent memory: A replication of symmetrical effects for both positive and negative moods. *Journal of Social Behavior & Personality*, 5(4), 123-134.
- Clark, L. A., Watson, D., & Leeka, J. (1989). Diurnal variation in the positive affects. *Motivation and Emotion*, 13(3), 205-234.
- Curry, A. (1968). Drugs in rock and jazz music. *Clinical Toxicology*, 1(2), 235-244.
- Deshmukh, A. D., Sarvaiya, A. A., Seethalakshmi, R., & Nayak, A. S. (2009). Effect of Indian classical music on quality of sleep in depressed patients: A randomized controlled trial. *Nordic Journal of Music Therapy*, 18(1), 70-78.
- Erkkilä, J., & Eerola, T. (2010). Gambling addiction: Evaluation of a multimethod treatment programme including music therapy In D. Aldridge & J. Fachner (Eds.), *Music Therapy and Addictions* (pp. 140-155). London and Philadelphia: Jessica Kingsley Publishers.

- Erkkilä , J., Punkanen, M., Fachner, J., Ala-Ruona, E., Pöntiö, I., Tervaniemi, M., et al. (2011). Individual music therapy for depression - Randomised Controlled Trial. *British Journal of Psychiatry*, 199(2), 132–139.
- Erkkilä, J., Ala-Ruona, E., Punkanen, M., & Fachner, J. (2012). Perspectives on creativity in improvisational, psychodynamic music therapy. In D. Hargreaves, D. Miell & R. MacDonald (Eds.), *Musical Imaginations: multidisciplinary perspectives on creativity, performance and perception* (pp. 414-428). Oxford: Oxford University Press.
- Fachner, J. (2006). Music and drug induced altered states. In D. Aldridge & J. Fachner (Eds.), *Music and Altered States - Consciousness, Transcendence, Therapy and Addictions* (pp. 82-96). London: Jessica Kingsley.
- Fachner, J. (2010). Music therapy, drugs and state-dependent recall. In D. Aldridge & J. Fachner (Eds.), *Music therapy and addictions* (1 ed., pp. 18-34). London: Jessica Kingsley.
- Fachner, J. (2011). Drugs, altered states, and musical consciousness: reframing time and space. In E. Clarke & D. Clarke (Eds.), *Music and consciousness* (pp. 263-280). Oxford: Oxford University Press.
- Fachner, J., Gold, C., Ala-Ruona, E., Punkanen, M., & Erkkilä, J. (2010). Depression and music therapy treatment - clinical validity and reliability of EEG alpha asymmetry and frontal midline theta: three case studies. In S. M. Demorest, S. J. Morrison & P. S. Campbell (Eds.), *Proceedings of the 11th International Conference on Music Perception and Cognition (CD-ROM)* (pp. 11-18). Seattle: University of Washington - School of Music.
- Fachner, J., & Rittner, S. (2011). Ethno therapy, music and trance - An QEEG investigation into a sound-trance induction. In D. Cvetkovic & I. Cosic (Eds.), *States of Consciousness: Experimental Insights into Meditation, Waking, Sleep and Dreams* (pp. 233-254). Berlin: Springer.
- Fachner, J., Gold, C., & Erkkilä, J. (2013). Music therapy modulates fronto-temporal activity in the rest-EEG in depressed clients. *Brain Topography*, 26(2), 338-354.
- Greenberg, R. P., & Goldman, E. D. (2009). Antidepressants, psychotherapy or their combination: Weighing Options for depression treatments. *J Contemp Psychother*, 39, 83-91. doi:DOI 10.1007/s10879-008-9092-2
- Gold, C., Fachner, J., & Erkkilä, J. (2013). Validity and reliability of electroencephalographic frontal alpha asymmetry and frontal midline theta as biomarkers for depression. *Scandinavian Journal of Psychology*, 54(2), 118-126.
- Gold, C., Rolvsjord, R., Aaro, L. E., Aarre, T., Tjemslund, L., & Stige, B. (2005). Resource-oriented music therapy for psychiatric patients with low therapy motivation: protocol for a randomised controlled trial [NCT00137189]. *BMC psychiatry*, 5, 39. doi: 10.1186/1471-244X-5-39
- Gotlib, I. H., Krasnoperova, E., Yue, D. N., & Joormann, J. (2004). Attentional biases for negative interpersonal stimuli in clinical depression. *Journal of Abnormal Psychology*, 113(1), 127–135.
- Harikumar, R., Raj, M., Paul, A., Harish, K., Sunil Kumar, K., Sandesh, K., et al. (2006). Listening to music decreases need for sedative medication during colonoscopy: a randomized, controlled trial. *Indian Journal of Gastroenterology*, 25(1), 3.

- Harmatz, M. G., Well, A. D., Overtree, C. E., Kawamura, K. Y., Rosal, M., & Ockene, I. S. (2000). Seasonal variation of depression and other moods: A longitudinal approach. *Journal of Biological Rhythms*, 15(4), 344–350.
- Hasler, B. P., Mehl, M. R., Bootzin, R. R., & Vazire, S. (2008). Preliminary evidence of diurnal rhythms in everyday behaviors associated with positive affect. *Journal of Research in Personality*, 42(6), 1537–1546.
- Herbert, R. (2011). Consciousness and everyday music listening: trancing, dissociation, and absorption. In D. Clarke & E. Clarke (Eds.), *Music and consciousness* (pp. 295-308). Oxford: Oxford University Press.
- Holsboer, F. (2008). How can we realize the promise of personalized antidepressant medicines? *Nature Reviews Neuroscience*, 9(8), 638-646.
- Honkonen, T., Aro, T., Isometsä, E., Virtanen, M., & Katila, H. (2007). Quality of treatment and disability compensation in depression: Comparison of 2 nationally representative samples with a 10-year interval in Finland. *Journal of Clinical Psychiatry*, 68(12), 1886-1893.
- Jonnes, J. (1999). *Hep-Cats, Narcs and Pipe Dreams* (1 ed.). Baltimore: John Hopkins University Press.
- Joormann, J., & Gotlib, I. H. (2010). Emotion regulation in depression: Relation to cognitive inhibition. *Cogn Emot.*, 24(2), 281-298.
- Lönnqvist, J. (2009). Stress ja depressio (Stress and depression). Retrieved January 19, 2009, from http://www.terveyskirjasto.fi/terveyskirjasto/tk.koti?p_artikkeli=seh00020
- Madigan, R. J., & Bollenbach, A. K. (1982). Effects of induced mood on retrieval of personal episodic and semantic memories. *Psychological Reports*, 50(1), 147–157.
- Manning, P. (2007). *Drugs and Popular Culture – Drugs, media and identity in contemporary society*. Cullompton: Willan Publishing
- McKay, K. M., Imel, Z. E., & Wampold, B. E. (2006). Psychiatrist effects in the psychopharmacological treatment of depression. *Journal of Affective Disorders*, 92(2-3), 287-290.
- Menon, V., & Levitin, D. J. (2005). The rewards of music listening: Response and physiological connectivity of the mesolimbic system. *Neuroimage*, 28(1), 175-184.
- Miranda, R., & Kihlstrom, J. (2005). Mood congruence in childhood and recent autobiographical memory. *Cognition & Emotion*, 19(7), 981–998.
- Montagne, M. (2004). Social Pharmacology: Integrating Pharmaceutical and Social Science Research on Drug Effects. *Drug Information Journal*, 38(4), 315-320.
- Montgomery, S. A., & Åsberg, M. (1979). A new depression scale designed to be sensitive to change. *British Journal of Psychiatry*, 134, 382-389.
- Moore, P. (2008). *Enhancing me : the hope and the hype of human enhancement*. Chichester, England ; Hoboken, NJ: Wiley/Dana Centre.
- Murray, G., Allen, N. B., & Trinder, J. (2002). Mood and the circadian system: Investigation of a circadian component in positive affect. *Chronobiology International*, 19(6), 1151–1169.
- Nickel, A. K., Hillecke, T., Argstatter, H., & Bolay, H. V. (2005). Outcome research in music therapy: a step on the long road to an evidence-based treatment.

- [Randomized Controlled Trial]. Annals of the New York Academy of Sciences, 1060, 283-293.
- Nordoff, P., & Robbins, C. (2007). *Creative music therapy: A guide to fostering clinical musicianship* (2 ed.). Gilsum NH: Barcelona Publishers.
- Norris, C. (2011, 2011). The medicated me. Retrieved 17th October, 2013, from <http://chrismorriswordsandmusic.com/pages/stories/medicated.php>
- Palmer, J. D. (2002). *The living clock: The orchestrator of biological rhythms*. Oxford ; New York: Oxford University Press.
- Passynkova, N. R., & Volf, N. V. (2001). Seasonal affective disorder: spatial organization of EEG power and coherence in the depressive state and in light-induced and summer remission. *Psychiatry Res*, 108(3), 169-185.
- Peeters, F., Berkhof, J., Delespaul, P., Rottenberg, J., & Nicolson, N. A. (2006). Diurnal mood variation in major depressive disorder. *Emotion*, 6(3), 383-391.
- Peterson, C. K., & Harmon-Jones, E. (2009). Circadian and seasonal variability of resting frontal EEG asymmetry. *Biological Psychology*, 80(3), 315-320.
- Punkanen, M., Eerola, T., & Erkkilä, J. (2011a). Biased emotional recognition in depression: Perception of emotions in music by depressed patients. *Journal of Affective Disorders*, 130(1-2), 118-126.
- Punkanen, M., Eerola, T., & Erkkilä, J. (2011b). Biased Emotional Preferences in Depression: Decreased Liking of Angry and Energetic Music by Depressed Patients. *Music and Medicine*, 3(2), 114-120.
- Salimpoor, V. N., Benovoy, M., Larcher, K., Dagher, A., & Zatorre, R. J. (2011). Anatomically distinct dopamine release during anticipation and experience of peak emotion to music. [Research Support, Non-U.S. Gov't]. *Nature Neuroscience*, 14(2), 257-262.
- Shapiro, H. (2003). *Waiting For The Man - The Story of Drugs and Popular Music* (2 ed.). London: Helter Skelter Publishing.
- Smolensky, M., & Lamberg, L. (2001). *The body clock guide to better health: How to use your body's natural clock to fight illness and achieve maximum health*. New York, NY: Henry Holt and Company.
- Smolensky, M., & Peppas, N. (2007). Chronobiology, drug delivery, and chronotherapeutics. *Advanced Drug Delivery Reviews*, 59(9-10), 828-851.
- Spintge, R. (1991). Die therapeutisch-funktionalen Wirkungen von Musik aus medizinischer und neurphysiologischer Sicht - Musik als therapeutische Droge. In H. Rösing (Ed.), *Musik als Droge? Zu Theorie und Praxis bewußtseinsverändernder Wirkungen von Musik* (Vol. 1, pp. 13-22). Mainz: Villa Musica.
- Spintge, R. (2012). Clinical Use of Music in Operating Theaters. In R. MacDonald, G. Kreutz & L. Mitchell (Eds.), *Music, Health, and Wellbeing* (pp. 277 - 286). Oxford - New York: Oxford University Press.
- Summer, L. (2002). Group music and imagery therapy: Emergent receptive techniques in music therapy practice. In: *Guiged imagery and music - the Bonny method and beyond* (pp. 297-306). Gilsum: Barcelona Publishers.
- Surguladze, S. A., Young, A. W., Senior, C., Brébion, G., Travis, M. J., & Phillips, M. L. (2004). Recognition accuracy and response bias to happy and sad facial expressions in patients with major depression. *Neuropsychology*, 18(2), 212-218.

- Tucek, G. (2006). Traditional oriental music therapy – a regulatory and relational approach. *Music Therapy Today* 7(3), 623-647.
- Turner, D. C., Robbins, T. W., Clark, L., Aron, A. R., Dowson, J., & Sahakian, B. J. (2003). Cognitive enhancing effects of modafinil in healthy volunteers. *Psychopharmacology (Berl)*, 165(3), 260-269.
- Van Havere, T., Vanderplasschen, W., Lammertyn, J., Broekaert, E., & Bellis, M. (2011). Drug use and nightlife: more than just dance music. *Substance abuse treatment, prevention, and policy*, 6, 18.
- Vuoskoski, J. K., & Eerola, T. (2011). The role of mood and personality in the perception of emotions represented by music. *Cortex*, 47(9), 1099–1106.
- Watson, D. (2000). *Mood and temperament*. New York, NY: The Guilford Press.
- Wolfe, T. (1989). *The Electric Cool Aid Acid Test*. New York: Bantam Books.
- Weil, A. (1998). *The Natural Mind* (3. ed.). Boston: Houghton Mifflin.
- Zinberg, N. E. (1984). *Drug, set, and setting : the basis for controlled intoxicant use* (1 ed.). New Haven: Yale University Press.