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## **Adolescents' musical relaxation: understanding the related affective processing**

### **Abstract**

Music listening promotes adolescents' wellbeing and relaxation in daily life. Relaxation is linked to affective self-regulation, but little is known about the specific affective processes of musical relaxation. The current study aimed to elaborate the affective dimension of adolescents' musical relaxation, through detailed exploration of the related affect regulation goals, strategies, and induction mechanisms.

A qualitative study with 55 adolescents (42 girls, 13 boys), aged 15, was conducted. Participants listened to self-selected relaxation music for 20 minutes, once in a laboratory and once at home, and provided written descriptions of their experience. The total of 110 episode descriptions were analyzed using summative, directed, content analysis for identifying typical patterns and interactions between the underlying concepts.

Three major strategies (processing, distraction, induction) and two mechanisms (musical, mental) were identified. Processing was supported by both mechanisms, while distraction and induction predominantly by the musical mechanism. Change from negative to positive mood was particularly realized through musical distraction, while pure positive emotion induction was equally supported by all strategies and mechanisms.

The analysis revealed clear patterns of how affect regulation strategies and induction mechanisms interrelate and serve different outcomes as part of adolescents' relaxation. The findings provide conceptual clarification and theoretical grounds for understanding how affective processes function in

musical relaxation. The discussion is performed in light of prior research and broader understanding of music as part of adolescents' affective processing and self-regulation.

**Keywords:** relaxation, music listening, adolescents, affect, emotion regulation strategies, emotion induction mechanisms

# **Adolescents' musical relaxation: understanding the related affective processing**

## **Background & Aim**

Adolescents use music as a personal resource of their socio-emotional development and related affective processing, to an extent that it has been proposed that music listening plays a major role in supporting health and wellbeing in their daily lives (Laiho, 2004; Gold, Saarikallio, & McFerran, 2001; Miranda, 2013; North, Hargreaves & O'Neill, 2000; Saarikallio & Erkkilä, 2007). One of the important functions that music serves in this context is relaxation. Relaxation, tension reduction, and revival of new energy appear to be integral features of adolescents' health-beneficial use of music (Saarikallio, McFerran, & Gold, 2015) and daily music listening for relaxation purposes in general has been shown to contribute to the maintenance of psychophysiological health (Kreutz, Murcia & Bongard, 2012; Linnemann, Ditzen, Strahler, Doerr & Nater, 2015; Västfjäll, Juslin & Hartig, 2012). Music has been shown to be effective in alleviating stress response (Knight & Rickard, 2001; Thoma et al., 2013), particularly in the age group of adolescents (Pelletier, 2004).

Relaxation is integrally related to the management of stress and the psychophysiological processing of its concomitant negative emotions (Lovallo, 2005; Pelletier, 2004). Affect is a core element of relaxation, and several affective dimensions are involved both in the states previous to relaxation (e.g., arousal levels, stress) and in the relaxation process itself (e.g., induction of a positive emotion). Therefore, the umbrella term "affect" will be used throughout this paper, aiming to embrace the different tonalities involved in the self-regulatory,

use of music (Baltazar & Saarikallio, 2015, in press; Juslin & Sloboda, 2010; van Goethem & Sloboda, 2010). The umbrella term includes affective states such as emotions, moods, arousal, energy levels, and stress.

Relaxation (van Goethem & Sloboda, 2011) and revival (Saarikallio & Erkkilä, 2007) have been identified as a core element of musical affect regulation. The processes of affective self-regulation relate to an individual's endeavor to – consciously or unconsciously – engage in music to modify his or her affective states, including arousal levels. However, while the linkage of relaxation to affective processing in general is established, there is little knowledge of what are the particular affective processes that are most characteristic and relevant for adolescents' musical relaxation.

As its own field, music-related affective processing is achieving increasing attention, and researchers are rapidly uncovering the psychological mechanisms that underlie the affective impact of music. Detailed elaboration is emerging particularly on concepts of emotion induction (e.g. Juslin & Västfjäll, 2008) and affective self-regulation (e.g. Baltazar & Saarikallio, 2015, in press; Saarikallio & Erkkilä, 2007; Van Goethem & Sloboda, 2011). According to van Goethem (2010), the musical affect regulation can be best understood by looking at its several levels: goals, strategies, tactics, and mechanisms (GSTM framework). In this framework, music listening is a *tactic* (tool) that, through musical *mechanisms*, supports regulation *strategies* aimed at achieving specific affective *goals*. Two of these levels, strategies and mechanisms, are particularly relevant for the understanding the inner processes of musical regulation. The strategies are the specification regarding how the goal is achieved, a pattern of how an affective state is approached to and dealt with (Koole, 2009, p.10). The

mechanisms reveal how music's features and human interaction with music are responsible for the induction and change of the affective states (Juslin & Västfjäll, 2008); van Goethem & Sloboda, 2011).

In music research, some studies apply strategies defined in general coping (e.g., Miranda & Claes, 2009) and emotion regulation literature (e.g., Chin & Rickard, 2014; Thoma, Ryf, Mohiyeddini, Ehlert, & Nater, 2012; Van Goethem & Sloboda, 2011), while some studies have developed specified music-based models, such as Saarikallio and Erkkilä's (2007) model of seven music-based mood regulation strategies, Bishop, Karageorghis and Loizou's (2007) model of situational and emotional intensity mediators of tennis players' emotional use of music, and Van den Tol and Edwards' (2013) model of music selection strategies and self-regulatory goals of sad music listening. Research on the induction mechanisms is also growing, and focuses on explaining why the affective impact of music occurs. The framework presented by Juslin and Västfjäll (2008) represents a prominent presentation of the music-related emotion induction mechanisms, dividing them into brain stem reflexes, evaluative conditioning, emotional contagion, visual imagery, episodic memory, and musical expectancy. Juslin and Västfjäll's framework discusses these mechanisms purely as forms of musical emotion induction, without further linking them with the affective self-regulation framework. At the time, only van Goethem and Sloboda's (2011) study tackle directly the role of musical mechanisms as part of affect regulation, identifying the following mechanisms: emotion of music, type of music, familiarity of music, content of music, "other world", memories, support to music-related activities, and support to music-unrelated activities.

Overall, the knowledge of both emotion induction and regulation processes in musical experiences is rapidly increasing. Yet, while they are closely intertwined with the processes of arousal regulation and relaxation, their particular role as part of adolescents' use of music for relaxation purposes is lacking empirical investigation.

Thus, the current study aimed to establish conceptual understanding of how affective processing, including goals, outcome states, regulation strategies, and induction mechanisms, plays a part in adolescents' musical relaxation.

## **Method**

Qualitative approach was chosen in order to identify the phenomenon's typical patterns from informant descriptions. Conceptual analysis was combined with counting frequencies of the presence and co-occurrence of the conceptual categories in order to identify characteristic interconnections between the affect regulation strategies, induction mechanisms, and resulting affective states.

### *Participants*

Fifty-five adolescents (42 girls, 13 boys), all aged 15 and attending high school, participated in the study. Participants were recruited through their schools, participation was voluntary, and informed consents were acquired from the adolescents, their caregivers, and school officials. Participants were rewarded for the time with movie tickets. The ethical board of the University of Jyväskylä approved the study.

### *Procedure for data collection*

Participants were asked to bring in their own relaxation music to the study. The choice of music was instructed only as “your own relaxation music”, without any other incentives for style or content. During the study, the adolescents were first given the instructions, they then engaged in a relaxation task of listening to their self-selected relaxation music for 20 minutes, and then provided a written description about their experience. For the relaxation task, they were shortly instructed to sit in a comfortable position or lie down, breathe calmly and naturally, to close their eyes if they felt like doing so, and concentrate on listening to the music. For the written descriptions, the adolescents were instructed to think back to the music and its impact on them. In order to activate the adolescents to describe their experience as elaborately as possible regarding the various elements of affective self-regulation they were encouraged to consider the following aspects in their description: a) what were your affect-related goals, b) what were the aspects of the music that impacted you, c) what kind of impact in you was it, and d) what happened in your affective state as a result. A separate space to write was provided after each of these sub-sections of the overall writing task. Conceptually difficult abstract terms like strategies and mechanisms were deliberately avoided in the instruction, but it was expected that information about the regulatory goals would be received particularly from section a), information about the mechanisms from sections b) and c), and information about the strategies from sections c) and d). While this was indeed typically the case, there was also considerable overlap, and each concept (goal, mechanism, strategy) was always analyzed considering the whole description as an entity. The task was completed once in a laboratory and once at home. The laboratory setting enabled establishing clear identical instructions about the task

for all participants while the home repetition allowed additionally accessing an ecologically valid environment for music listening for personal relaxation. Descriptions from both settings were used as the data set for the study, consisting of a total of 110 episodes. The adolescents were additionally asked to provide a short description of the music they chose to listen to (see examples in Appendix 1), which ranged from describing the music as calming/energizing to mentioning artists. However, music descriptions were excluded from the current analysis, which focused purely on the experiential components of the underlying affective processes.

#### *Data analysis*

The written descriptions were analyzed using summative, directed, content analysis (Hsieh & Shannon, 2005) for identifying typical patterns and interactions between the underlying concepts. The analysis was realized through two subsequent phases. In Phase 1, directed content analysis was used to identify categories reflective of the affect-related goals, strategies, mechanisms, and outcome states. The descriptions were generally short, consisting only of 1-2 sentences/comments for each sub-section of the writing task, but they were elaborate enough to provide a comprehensive set of data for identifying repeatedly occurring code categories for each main concept. Following the principles of the directed content analysis (Hsieh & Shannon, 2005), prior theory and research knowledge on the concepts was used as a starting point for the initial code categories (e.g. emotional contagion was considered as a code category for the emotion induction mechanisms). However, the emergence of

novel codes and/or categories based on the data was also allowed. Several iterative rounds of data analysis were conducted to achieve the final categories.

In Phase 2, following the principles of the summative content analysis (Hsieh & Shannon, 2005), the frequencies of particular codes and their co-occurrences were calculated and interpretation of the underlying content made. One strategy, one mechanism, and one outcome state was nominated for each episode by choosing the most prominent one, and if a strategy, mechanism, or outcome state was not clearly identifiable, that episode was not given a nomination regarding the missing/unclear component. Even though some episodes lacked nomination of one or more component, there was enough data to observe patterns and make conclusions about how particular strategies, mechanisms, and outcome states were interrelated.

## **Results**

### *Affect-related goals and outcome states*

The affect-related goals consisted of relaxation per se, but also of other aspects related to moods, emotions and arousal levels. In more detail, six categories of affect-related goals were identified, presented here with some examples from the adolescents' descriptions in brackets:

- 1) Relax (*To relax*). Because the task involved relaxation, many of the descriptions included relaxation as a goal. In order to maintain the research focus on the other affect-related aspects, the descriptions were categorized under the category of *Relax* only when relaxation was the only goal mentioned, while instances in which relaxation was mentioned alongside with another goal were categorized based on the other goal.

- 2) Calm Down/Tranquility (*To be calm. To create a state of tranquility.*). This category consisted of descriptions that were focused on lowering the arousal level, typically combined with a reduction of tension and search for calmness and tranquility, either as a state of mind or body.
- 3) Energize (*The elevation of the energy levels.*). This category consisted of descriptions that focused on elevating one's energy level, typically combined with the experience of reinvigoration and gaining new strength.
- 4) Improve Mood (*Better mood. Improvement of the mood.*). This category consisted of descriptions that contained a shift away from a negative state towards a more positive one. This was typically described as mood improvement or detachment away from negative feelings.
- 5) Positive Emotions (*To achieve joyfulness.*). This category consisted of descriptions of a pure induction of new, positively valenced, emotions. In contrast to the previous category, descriptions of this category did not contain a reference to a prior state or a shift from a negative to a more positive one.
- 6) Mixed (*To be able to rest and that way gain energy and a good mood.*). This category consisted of descriptions that consisted of combinations of the abovementioned goals, and thus not clearly distinguishable into any one of them.

The affect-related outcome states similarly consisted of relaxation per se and of descriptions referring directly (or in combination of relaxation) to other, more specific outcomes regarding arousal, emotions or a mood state. The identified categories were the same as for the goals, with the addition of one category

created for the absence of any change, labeled No Impact. Examples of the descriptions labeled under each of the outcome categories are presented in brackets: Relax (*I relaxed just fine.*), Calm Down/Tranquility (*I dozed off and I was in a tranquil state. Started to feel tired, calm state of mind*), Energize (*I gained energy. I recovered and gained new strength. I cheered up and tiredness disappeared. I gained energy and felt refreshed*), Improve Mood (*The feelings got better. Bad things faded away from my mind.*), Positive Emotions (*I received emotions of joy and happiness and emotional sensations. I got into a good mood and I started feeling ample and happy. I started to feel like dancing. I experienced joy*), Mixed (*My mood calmed down, I started to feel more relaxed and my mood was elevated. I started to feel better and more relaxed, I was feeling more joyful and I felt some kind of emotional sensations.*), and No Impact (*My mood did not really change.*).

A difference was observed between the affect-related goals and outcome states concerning category prevalence: The goals were particularly reflective of the task, i.e. relaxation and calming down, while the outcome states particularly reflected the positive mood impact and experiencing a mixture of different aspects. This is illustrated by the frequencies of mentioning a particular goal or an outcome state, presented in Figure 1.

- Figure 1 around here -

### *Regulation strategies*

Several iterative phases of analysis were required to identify the affect regulation strategies. An example of an early, intermediate stage was a theory-

driven categorization that was influenced by a general emotion regulation meta-analysis (Webb, Miles, & Sheeran, 2012), consisting of attention deployment strategies, cognitive change strategies, and response modulation strategies, with several subtypes. However, the proposed categorization did not fluently fit with the data. Additionally, one challenging aspect was that the adolescents focused more on the impacts of music, in detriment of verbalizing the used strategy. Nevertheless, the analysis finally resulted in identifying three major categories that were still partially reflective of the proposal of Webb, Miles, and Sheeran (2012):

1) Processing. The first strategy was labeled processing, and it represented cases in which the individual used music to focus attention on internal experiences to facilitate processing and reappraisal of personal thoughts, experiences, and related affective states. Examples of the processing strategy include the following:

*I worked on and sorted out my own experiences, I associated my own sensations with the song and I was able to “deal” with certain matters.*

*I started to smile and I was thinking about the good things that happened so far in my life. I also was thinking about things I want to experience in the future.*

2) Distraction. The second category was labeled Distraction, and it represented somewhat opposite cases, in which the individual used music to direct attention away from the internal processing and into the music, to get rid of and forget

about worries, unwanted thoughts, and emotions. Examples of the distraction strategy include the following:

*I did not let the exam of the next day stress me that much. I detached myself from undesired emotions and thoughts.*

*For a moment I forgot everything else and was able to enjoy the music.*

3. Induction. Finally, the third category was labeled Induction, and it fundamentally represented cases of merging oneself with the music, particularly the emotional world represented by the music, and highlighted the positive emotional impact of that merge or allowance of becoming emotionally touched and induced. Unlike the other two categories, the induction category did not contain a clear and definite indication about whether the internal focus of the listener was directed to the processing of personal experiences or rather away from them. Examples of this strategy include the following:

*I identified myself with the emotions expressed by the music. One gets a good feeling and it helps with all kinds of state of mind.*

*The surprising and powerful sounds of the music activated me. I experienced entertainment.*

The frequencies of these three strategies are presented in Figure 2, suggesting a slight prevalence of the distraction strategy.

- Figure 2 around here -

*Induction mechanisms*

The theoretical framework guiding the formulation of the initial codes for the emotion induction mechanisms was the one presented by Juslin and Västfjäll (2008). Instances of each theory-based category were observed, but the distinctively most typical ones were emotional contagion, episodic memory, and visual imagery. Some mechanisms were also hard to disentangle from each other, such as contagion from brain stem reflexes and imagery from memories. After several iterative rounds the mechanisms were collapsed into two broad categories that could be relatively clearly separated and descriptions be placed under one or the other.

1) Musical. The first category was labeled Musical, and it represented instances in which something in the music itself, such as acoustic features or the general emotional character of the song, was considered to produce the emotional impact. Examples of the musical mechanism include the following:

*The melody evoked emotional sensations.*

*I identified myself with the emotions expressed by the music.*

*I was activated by the loud and powerful noises of the music.*

*Music had a soothing function but the tense parts in the music cheered me up.*

2) Mental. The other category was labeled Mental, and it represented cases in which music first activated thoughts of something extra-musical, such as images or memories, which then emotionally impacted the experience. Examples of the mental induction mechanism include the following:

*Some memories were evoked and I was touched.*

*The memories evoked by the music were wonderful.*

*The music evoked some images, it evoked images and cold shivers.*

The two induction mechanism categories were equally present in the descriptions, both being identified 40 times.

#### *Interplay of strategies and mechanisms*

Each affect regulation strategy further showed a distinct profile regarding its linkage to the induction mechanisms. The processing strategy was equally described in connection to both musical (5 episodes) and mental (6 episodes) mechanisms, showing that both types of induction mechanisms supported processing of internal experiences. Examples of the musical mechanism supporting the processing strategy include the following:

*I identified with the emotions expressed by the music. I associated my own sensations with the songs and I was able to “deal” with certain matters.*

*I was reflecting on the thoughts in my head, I aimed at gaining strength and at relaxing. The rhythms, the lyrics, the melodies, enhanced what I was trying to do.*

An example of the mental mechanism supporting the processing strategy would be:

*The music evoked some images and memories. Some emotional sensations were evoked in me and I worked on and sorted out my own experiences.*

Meanwhile, the distraction strategy was more clearly linked with the musical mechanism (9 episodes) than the mental mechanism (4 episodes), suggesting that musical material in particular supports distraction away from personal distress. Examples of the distraction strategy with the musical mechanism include:

*The rhythm and the lyrics calmed me down and I relaxed. Bad things faded away from my mind.*

*I identified myself with the emotions expressed by the music, the melodies, the harmonics. I detached myself from the undesirable emotions and thoughts.*

In contrast, below is an example of the distraction strategy with the mental mechanism:

*I was reminiscing and thinking back the lyrics and their meaning, I got rid of stress, In my mind as well as in my body I was feeling relaxed.*

Finally, the strategy of induction was characterized by strong prevalence of the musical mechanism, with 10 episodes describing the musical mechanism and only 1 involving the mental mechanism. An example of the induction strategy with the musical mechanism would be:

*I identified myself with the music, the rhythms, the melody, the lyrics, I got into a good mood.*

The only episode that was interpreted to represent a case of the mental mechanism supporting the induction strategy was this:

*Some memories were evoked, it relaxed me, images were evoked, I experienced entertainment, joy, I got into a good mood, Cold shivers.*

*Linkages of the strategies and mechanisms with the outcome states*

Regulation strategies and induction mechanisms showed distinct patterns also regarding their linkage with the outcome states. Table 1 shows a frequency cross-tabulation that illustrates how strategies and mechanisms co-occurred with the outcome states. Most frequent combinations (present in more than 5 episodes) are bolded in the table and they particularly involve the outcome states of mood improvement and positive mood induction, i.e. outcomes that were most strongly connected to mood rather than arousal states. Mood improvement (conceptualized here as instances with a clear change from negative towards positive mood) occurred particularly in relation to the distraction strategy and the musical induction mechanism. Many episodes could be characterized as endeavors of moving away from stress and worries towards positive feelings with the help of focusing on music's pleasant elements. Meanwhile, the pure induction of positive emotions (without a particular change away from a negative state) resulted equally from all strategies and from both mechanisms.

- Table 1 around here -

## **Discussion**

This qualitative study aimed at establishing conceptual understanding of the affective processes involved in adolescents' musical relaxation. A particular

interest was placed on the different regulation strategies, induction mechanisms, affect-related outcome states, and the way that these elements interrelate. The main contribution of the study was a conceptual clarification of the prominent elements and their specific interconnections.

The emergent affect regulation strategies – processing, distraction, and induction – represent concepts that partly align with the general emotion regulation strategies of reappraisal and distraction (e.g. Gross & John, 2003; Webb, Miles, & Sheeran, 2012), but also point to a possibility of music itself functioning directly as an inductive regulation process without the presence of a separate regulatory strategy. This is in line with prior research showing that musical mood enhancement is achieved either through strategies of cognitive reappraisal and distraction, or directly through selecting music of high perceived aesthetic value (Van Den Tol & Edwards, 2014) and findings indicating that musical emotion regulation does not occur in full accordance with the general emotion regulation process model but that music rather functions as an independent regulatory resource for achieving emotional goals (Randall, Rickard, & Vella-Brodrick, 2014).

Linkages between regulatory strategies and induction mechanisms suggest that the strategy of processing is supported by both musical and mental mechanisms, which would be expected since the strategy by definition involves mental contemplation of personally relevant thoughts and experiences. Meanwhile, distraction and induction strategies are prominently supported by the musical mechanism. This appears natural for the induction strategy, which may indeed reflect a particularly music-specific and therefore also musical content -specific process, whether based on aesthetic appreciation or other

musical mechanism (Randall et al., 2014; Van den Tol & Edwards, 2014). As regards distraction, the mental material of memories and images may partly involve associations that rise from the very personal content that one is trying to distract away from, while musical material provides a clearer means for distraction. This interpretation is supported by findings of Van den Tol & Edwards (2014) who showed that music selection with the intention of triggering memories was negatively related to the self-regulatory goal of mood enhancement.

The abovementioned is also in line with the findings on affect-related outcomes. The outcome of mood improvement, i.e. change from negative to positive mood, was particularly supported by the distraction strategy and the musical mechanism. This reflects a case in which a person is experiencing negative thoughts or affect, wishes to improve his/her mood, and best achieves this through a distraction that employs musical material not connected to personal memories and associations. Many of the written descriptions were illustrative of this process. The ability to use music for mood improvement through distractive relaxation may also be a crucial element in what makes music listening a health-promoting act: prior research has shown that it is largely the inability to improve mood and distract away from ruminative, repetitive, negative thoughts and memories that links music listening to a proneness for adolescent depression (Saarikallio, et al., 2015).

Meanwhile, all strategies and mechanisms appeared relevant for the positive emotion induction. Several episodes reflected a case in which a person is not in a particularly negative mood, sometimes actually in a quite good one, and music only strengthens the existing state or creates novel, pleasurable

sensations, whether it be through musical or mental mechanisms. This is in line with Saarikallio & Erkkilä's (2007) notion of music-related emotion regulation typically not fitting with traditional coping and negative emotion regulation frameworks but rather serving as a resource for positive emotionality through strategies like entertainment, revival, and strong sensation. Flexible use of all strategies and mechanisms for positive emotion induction (without prior negative state) is in accordance with notions of positive emotions broadening a persons' thought-action repertoire, stressing the fact that when a person is experiencing positive emotions he or she has more resources for more resilient, flexible, and creative selection of various behavioral options (Fredrickson, 2001). Overall, the findings stress the importance of conceptually separating mood improvement - a process of change from negative to positive states, from positive emotion induction - a process of merely creating or strengthening positive emotion without prior presence of a an unwanted state.

The decision to focus on a particular self-regulatory context of adolescents' musical relaxation provides clear framing for the study and is in line with notions of recent research about the relevance of considering the context-specificity in affective engagement with music (e.g. Baltazar & Saarikallio, 2015, in press; Randall & Rickard, 2013). However, the context specificity simultaneously challenges the generalizability of findings. The ways in which the affect-related strategies, mechanisms, and outcome states were found to interrelate in this study may be particularly typical for adolescents using music listening for relaxation, and not directly generalizable to other target groups, musical activities, or regulatory behaviors. For instance, the prevalence of particular elements, like the slight dominance of distraction over the other

strategies may be particularly reflective of the context of adolescents' musical relaxation. Overall, however, the similarities of the current findings with prior research about other contexts and populations discussed above indicate that the current results may explain the underlying features of music-related affective processing also beyond relaxation. At the very least, the study provides an important, pioneering proposition of the interconnectedness of these elements in the relaxation context, possibly testable in other contexts and providing grounds for wider understanding of the interconnections of the main psychological processes underlying the affective and health-relevant impact of music in both daily life and therapeutic contexts.

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## **Appendix 1. Examples of descriptions of the self-selected relaxation music**

- Pop/house
- Calm and slow, more energetic towards the end
- Eppu Normaali
- Melodic progressive metal: Amorphis, Opeth
- All kinds of pop, e.g., Super junior
- Rihanna, Akon, Leona Lewis, etc.
- Radio: NRJ, SPIN FM, VOICE, etc.
- Metal and Rock: Metallica, That Handsom Devil
- Indie-rock, eg. Vampire weekend, Mew, M.I.A., etc.
- Calming and also energizing, such as Raappana
- Pop, hip&hop, and Rap: Bruno Mars, Jason Danilo etc.
- Anna Abreu, Lady Gaga
- Pop, both Finnish and abroad: Usher, Aste, Jare&VilleGalle, BrunoMars
- Peaceful, calming
- Michael Jackson – various pop songs
- Relaxing music, Olavi Uusivirta, Anna Järveläinen, Nuori ja Kaunis
- Madonna: Confessions on the dance floor - album
- Various music (FooFighters, Eminem, Megadeath, Bob Marley)
- Van Halen
- Metal, Dream Hearter, Korn, Avenged Sevenfold
- Pop: Bruno Mars and Justin Bieber
- Kesha, Erik Grönwall
- Quite peaceful music, like the song "Just a dream"
- R'n'B, Rock, Pop, Techno

- Ellie Goulding, quite calming
- Pendulum, Daddy Yankee, Chris Brown, Dead by april
- Bass hunter, Italobrothers, Raappana

**Table 1.**

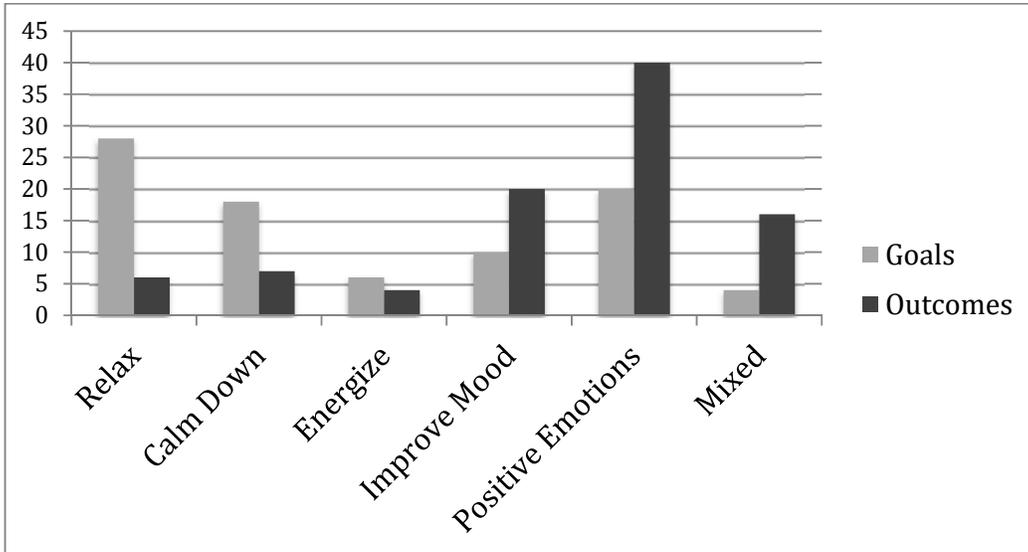
Frequency cross-tabulation illustrating the prevalence of particular co-occurrences of regulation strategies and induction mechanisms with the outcome states

Outcomes	Strategies			Mechanisms	
	Processing	Distraction	Induction	Musical	Mental
Relax	0	1	1	1	3
CalmDown	0	1	2	3	1
Energize	1	0	1	2	0
ImproveMood	2	7	0	<b>11</b>	4
PositiveEmotions	7	6	7	<b>13</b>	<b>13</b>
Mixed	1	1	2	6	4

**Figure captions:**

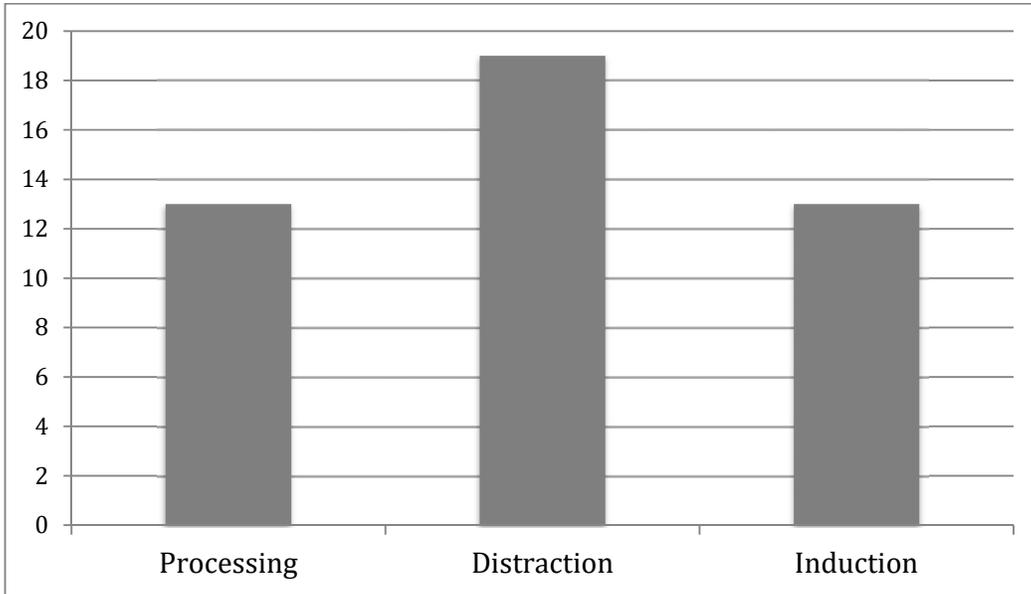
Figure 1. Frequencies of the goals and outcome states

Figure 2. Frequencies of the regulatory strategies



**Figure 1.**

Frequencies of the goals and outcome states



**Figure 2.**

Frequencies of the regulatory strategies