# Children with High Perspective-Taking Ability Prefer Sad Music

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## Abstract

Why do we listen to sad music? One reason could be that it generates pleasant emotions as well as sadness. Accordingly, it is necessary to determine what kind of person experiences pleasant affect by listening to sad music. In the current study, we focused on empathy as a personal trait and examined the relationship between trait empathy and emotional response, including liking for the sad music. We targeted children because we considered that this age group is appropriate to highlight individual differences in empathy. Our findings indicated that perspective-taking ability, a sub-component of trait empathy, was correlated with emotional responses to the sad music. In addition, children who experienced pleasant emotions preferred sad music.

**Keywords:** sad music; empathy; pleasant emotion; liking sad music; perspective-taking ability; Grade 6 elementary school children

## Introduction

Among the many current definitions of empathy, a common casual definition of empathy is "sharing the perceived emotion of another" (Eisenberg & Strayer, 1987). This kind of empathy was first introduced by Lipps (1903; 1905) and this is typically considered the origin of the term (Wispé, 1987). Of note, however, is that Lipps did not initially include the interpersonal context in his use of the term. In fact, the concept that he adopted was "einfühlung," which evolved from German aesthetics, and was used to discuss aesthetic cognition. It is, therefore, surprising that, in contrast, the modern usage of the concept of empathy is nearly always reserved for interpersonal contexts. Additionally, the original concept of einfühlung emerged from the study of aesthetics, rather than the field of social human interaction.

The German word einfühlung literally translates as "feel into" in English, and is derived from the verb meaning "to feel oneself in something" (Lee, 1913). According to Wind (1963), the term einfühlung was initially used by Vischer in 1873. Vischer considered that one must project oneself into the object to appreciate its aesthetics. Subsequently, the idea of einfühlung spread widely throughout aesthetics research by the late nineteenth century (Wispé, 1987). During this time, Lipps (1897) and Wundt (1903) both adopted einfühlung into their respective psychological terminologies and furthered its usage in this context (Lee, 1913).

Lipps applied the idea of einfühlung to the aesthetics of visual form (Currie, 2011). For Lipps, einfühlung meant that projecting oneself into a perceived object is the only way in which one may appreciate certain aesthetical aspects of that object (Wispé, 1987). Although today we do not consider empathy to be a way in which we understand inanimate objects, discussion of empathy in the context of non-human objects would have been natural at that time (Currie, 2011). Later, Lipps (1905) extended his usage of einfühlung beyond aesthetic appreciation to explain how a person understands the consciousness of others. Thus, the target of einfühlung expanded from aesthetic objects to people (Chismar, 1988). Titchener (1909) borrowed Lipps's notion of einfühlung, and translated it as "empathy" via the Greek word "empatheia," which means either "in suffering" or "in passion" (en + pathos). This was the first usage of the term "empathy." Subsequently, the concept of empathy was borrowed by many personality theorists during the 1930s and by psychotherapists during the 1950s. At present, social and developmental psychologists use empathy to explain altruistic behavior (Wispé, 1987).

Considering the way in which the term "empathy" emerged, we predicted that empathic ability would be associated with aesthetic emotional experience. This suggests that emotion in art, not just in interpersonal contexts, should be examined from the perspective of empathic ability. In line with this, Garrido and Schubert (2011), and Vuoskoski, Thompson, Mcilwain, and Eerola (2012) showed that in adults, there was a positive correlation between trait levels of empathic concern and the degree to which they liked sad music. One of the reasons that people like sad music could be a pleasure that is induced by sad music. In fact, sad music provokes pleasant emotions as well as sadness in listeners (Kawakami, 2013; Kawakami et al., 2013a; Kawakami et al., 2013b; Kawakami et al., 2014). However it has been unclear what kind of person experiences pleasant affect by listening to the sad music. So to speak, the relationship between trait empathy and pleasant emotion generated by the sad music remains unknown.

The concept of empathy also includes cognitive aspects (Borke, 1971, 1973; Buckley, Siegel, & Ness, 1979; Deutsch & Madle, 1975; Greenspan, Barenboim, & Chandler, 1976). Therefore, in line with Hoffman's (1987) suggested relationship between the development and properties of empathy, the ability to be empathetic would be transformed depending on the degree of development of

cognitive ability. Childhood represents the developmental stage during which empathy emerges; we therefore predicted that studying this age group would highlight individual differences in empathy and allow us to examine its influence.

Hence, we examined whether the trait of empathy was positively related to pleasant emotion as well as liking for sad music in children. If there was such a relationship, we aimed to clarify that what kind of trait empathy contributes to pleasure and liking for sad music. In particular, we examined the mediation effect of the emotional responses linking trait empathy to liking for sad music. Our hypothetical model suggests that sub-components of trait empathy were differently associated with varying emotional responses to sad music, and indirectly affect liking for such music. We conducted an experiment in which participants' emotional responses to sad music and trait empathy were subjectively assessed.

## Method

### Participants

Participants were 42 female children and 43 male children who were enrolled in Grade 6 at an elementary school in Japan. The mean age of the participants was 11.9 years ($SD = 0.32$).

### Materials

**Musical Stimuli.** Excerpts from the following two musical pieces were used: (1) Glinka's La Separation (F minor), played at quarter note = 80; and (2) Granados's Allegro de Concierto (G minor), played at quarter note = 70. We also used these pieces in an earlier study (Kawakami et al., 2013b).

The sound level of the music excerpts ranged from 58.4dB (C) to 72.5 dB (C) for Allegro de Concierto (G minor), and from 46.5 dB (C) to 70.5 dB (C) for La Separation (F minor). Both music excerpts lasted approximately 30 s.

**Interpersonal Reactivity Index Scale.** The modified Interpersonal Reactivity Index (IRI) for use with children, developed by Hasegawa et al. (2009), was used to measure the participants' trait empathy. Hasegawa et al. (2009) translated Davis's (1980) original IRI into Japanese and modified it so that children could understand and answer the items. Since Hasegawa et al. (2009) recommended that this scale be used with children older than Grade 4, the Grade 6 students who participated in our research were considered mature enough to answer the scale. The modified IRI scale for children contains 30 items, representing four sub-components of trait empathy (Empathic Concern (EC): seven items; Perspective Taking (PT): nine items; Personal Distress (PD): seven items; and Fantasy (FS): seven items). According to Davis (1980; 1983), EC assesses other-oriented feelings of sympathy and concern for unfortunate others, PT assesses the tendency to spontaneously adopt the psychological point of view of others, PD measures self-oriented feelings of personal anxiety and unease in tense interpersonal settings, and FS taps respondents' tendencies to transpose themselves imaginatively into the feelings and actions of fictitious characters in books, movies, and plays.

**Emotional State Scale.** This is a self-report scale consisting of 50 emotion-related descriptive words and phrases that are rated on a scale ranging from 1 (not at all) to 5 (very much). After listening to each musical stimulus, children were asked to rate their emotional state using this scale. The descriptive words and phrases were almost the same as the ones we used in a previous study (Kawakami et al., 2013b), with some alterations because the participants in the present study were children. Before creating the questionnaire, we consulted a music teacher at an elementary school to ensure that children could understand and answer the words and phrases.

### Procedure

The experiments were conducted in a music class at the elementary school. The children listened to music coming from a pair of speakers and engaged in two kinds of tasks. First, the participants were asked to report their own emotional state (including their liking for the music) after listening to each music stimulus, on a scale of 1 (not at all) to 5 (very much). Before rating their emotional states in the formal experiment, children completed two practice sessions. For the practice trials, we used two short excerpts of music (approximately 15 s) that were different from the music stimuli used in the rating task. On the basis of the music teacher's advice, we did not distribute the emotional state questionnaire until after we had played the music, so that the children could focus on the music. After all of the students had answered the questionnaire for the first music stimulus, we collected the questionnaire papers and then played the next music stimulus.

After the rating task was completed, participants answered the IRI. We explained to the children that these questionnaires were not associated with their academic results, and that there was no correct answer. We did not ask the children to write their name on their questionnaires because we wanted to obtain honest answers. Though children did not write their names on both emotional state and IRI questionnaires, we numbered the questionnaires and children sat on the same seat throughout the study; therefore, we could match the two questionnaires.

### Statistical Analysis

First, the relationship between trait empathy and liking for sad music was examined. In addition, in consideration of the correlations among IRI sub-components, partial correlations with liking for sad music were investigated for each sub-component. Second, a factor analysis was performed on the data from the emotional state scale to determine possible factors underlying participants'

emotional responses to the music stimuli. The relationships among the identified factors and the study variables were examined. All of the above statistical analyses were completed using IBM SPSS Version 22. Finally, path analyses were conducted to evaluate the model proposed in the present study and to test the hypothesis that sub-components of trait empathy influence liking for sad music through emotional responses to music. The path analyses were performed using IBM AMOS Version 22 with maximum likelihood estimation. Model solutions were assessed using the following fit indices: chi-square, adjusted goodness of fit index (AGFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA).

## Results

### Influence of Empathy on Liking for Sad Music

Correlation analyses were performed to investigate the influence of trait empathy on liking for sad music. Participants' global empathy scores were calculated by averaging the ratings of all IRI items. The scores for the sub-components of trait empathy were calculated as averaged ratings of items representing each sub-component. Liking assessments for the two music excerpts were averaged for each participant to obtain an overall liking score.

Global empathy and two sub-components of trait empathy (PT and FS) demonstrated significant correlations with liking for sad music (Table 1). Further, there were correlations among some of the sub-components of trait empathy. Therefore, partial correlation analyses were performed to assess the association between each sub-component and liking for sad music, controlling for the effects of the other sub-components (Table 2). There was no significant association between any sub-component of trait empathy and liking for sad music.

Table 1: Correlations among Variables.

|        | Liking | EC | PD | PT | FS | Global |
|--------|--------|----|----|----|----|--------|
| Liking | −      |    |    |    |    |        |
| EC     | .20    | −  |    |    |    |        |
| PD     | -.04   | .21* | − |    |    |        |
| PT     | .26*   | .79** | .11 | − |   |        |
| FS     | .25*   | .48** | .30** | .66** | − |      |
| Global | .23*   | −  | −  | −  | −  | −      |

*= $p < .05$, ** = $p < .01$

Table 2: Partial Correlation Coefficients among Empathy Sub-Components and Liking for Sad Music.

|     | Liking |
|-----|--------|
| EC  | .04    |
| PD  | -.11   |
| PT  | .04    |
| FS  | .14    |

### Emotional Responses to Music

Factor analysis, using the principal factor method with promax rotation, was performed on the responses of the 85 participants to the two musical stimuli ($N = 170$ responses) to identify the underlying structure of the 50 items of the emotional state scale. A three-factor solution explaining 53.95% of the total variance was revealed.

The 50 emotion-related descriptive words and phrases with their corresponding factor loadings are reported in Table 3. Twenty-seven words and phrases, such as *tender, fascinated,* and *peaceful,* were included in Factor 1, "Sweet Emotion." Ten other words and phrases, such as *sad, lonely,* and *gloomy,* were included in Factor 2, "Tragic Emotion." In the third factor, "Heightened Emotion," there were eight words and phrases, such as *panache, restless,* and *strong.*

### Model Testing

Path analyses were performed to test the proposed relationship between trait empathy and liking for sad music. The model showed that the indirect effects of the sub-components of trait empathy on liking for sad music were mediated by the emotional response to music.

Figure 1 shows the final model including standardized regression weights. The fit indices were as follows: the chi-square value was not significant, indicating that the modified model was consistent with the data, and the AGFI (.905), CFI (1.000) and RMSEA (.000) were also acceptable.

Path analysis indicated that some sub-components of trait empathy were associated with emotional responses to the music stimuli, which were then associated with liking for sad music. Regarding the relationships among the sub-components of trait empathy and emotional responses, only PT demonstrated an effect on emotional responses, in that it was positively associated with all three emotional response factors. Additionally, sweet emotion and heightened emotion were positively associated with liking for sad music. Though non-significant, the positive effect of PD on tragic emotion and the negative effect of FS on sweet emotion contributed to the amount of variance explained within the model.

Table 3: Factor Analysis of Emotional Responses to Music.

| Emotion-related items | Factor1 | Factor2 | Factor3 |
|---|---|---|---|
| Tender | **.944** | .019 | -.211 |
| Fascinated | **.941** | .056 | -.176 |
| Peaceful | **.939** | .054 | -.299 |
| Serene | **.925** | .039 | -.169 |
| Feel easy | **.904** | .143 | -.224 |
| Relaxed | **.883** | .077 | -.104 |
| Tranquil | **.852** | .042 | .017 |
| Heartwarming | **.810** | -.051 | .071 |
| Warm feeling | **.794** | -.090 | .038 |
| Dreamy | **.777** | .030 | .120 |
| Familiar ease | **.772** | .196 | -.008 |
| State of lightness | **.740** | -.091 | .010 |
| Refreshing | **.705** | -.172 | .131 |
| Nostalgic | **.704** | .064 | -.158 |
| Happy | **.697** | -.175 | .172 |
| Soothed | **.687** | .235 | .010 |
| Generous | **.666** | .189 | -.016 |
| Gorgeous | **.658** | -.076 | .018 |
| Animated | **.648** | .106 | .240 |
| Shining | **.647** | -.023 | .297 |
| Joyful | **.635** | -.196 | .274 |
| Amused | **.597** | -.207 | .280 |
| Cheerful | **.566** | -.253 | .283 |
| Blithe | **.540** | -.061 | .231 |
| Yearning | **.534** | .155 | .239 |
| Feel like dancing | **.533** | .030 | .137 |
| Lively | **.473** | -.231 | .423 |
| Sad | .075 | **.840** | -.192 |
| Lonely | .203 | **.784** | -.197 |
| Gloomy | .033 | **.703** | .117 |
| Cold | .060 | **.697** | .200 |
| Disconsolate | -.231 | **.686** | .009 |
| Fear | -.244 | **.674** | .283 |
| Weird feeling | -.160 | **.674** | .318 |
| Heavy | -.129 | **.654** | .181 |
| Weak | .069 | **.636** | -.051 |
| Fearful | -.188 | **.584** | .315 |
| Panache | -.017 | -.059 | **.670** |
| Restless | -.262 | .277 | **.663** |
| Strong | .190 | .087 | **.582** |
| Bouncy | .463 | -.137 | **.489** |
| Filled with wonder | .083 | .285 | **.461** |
| Leap | .027 | .393 | **.455** |
| Lofty | .278 | .192 | **.439** |
| Jocular | .167 | .351 | **.364** |
| **Correlations among factors** | **Factor1** | **Factor2** | **Factor3** |
| Factor 1 | - | -.189 | .411 |
| Factor2 | | - | .052 |
| Factor3 | | | - |
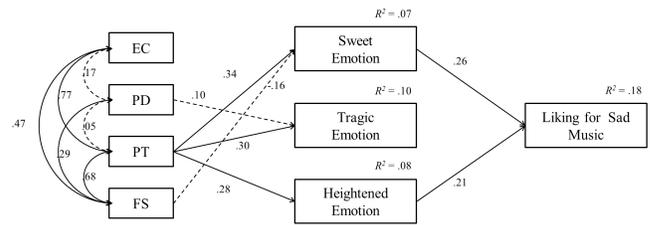


Figure 1: Path analysis of the modified model. With the exception of $R^2$ values, all values are standardized regression weights. Dashed lines indicate non-significant associations.

## Discussion

### Influence of Trait Empathy on Liking for Sad Music

Previous studies found that trait empathy was associated with liking for sad music. For example, Garrido and Schubert (2011) showed a correlation between EC and liking for sad music. Vuoskoski et al. (2012) suggested that the degree of liking for sad music was correlated with EC, FS, and global empathy. In line with previous studies, we found that liking for sad music was significantly correlated with global empathy ($r(85) = .23$, $p < .05$) but its relationship with EC was only marginally significant ($r(85) = .20$, $p = .067$). Furthermore, liking for sad music was significantly correlated with both FS ($r(85) = .25$, $p < .05$) and PT ($r(85) = .26$, $p < .05$). Previous research did not find an association between PT and liking for sad music. The age of the present sample might have affected the results. Notably, participants in the experiments of both Garrido and Schubert (2011) and Vuoskoski et al. (2012) were adults, while ours were Grade 6 elementary school children. The difference in age might account for the differences that emerged in how trait empathy is correlated with liking for sad music.

### The Model of Trait Empathy and Liking for Sad Music through Emotional Responses to Music

Path analysis of the modified model showed that the indirect effects of the sub-components of trait empathy on liking for sad music were mediated by the emotional response to music. That is, we clarified that PT affected liking for sad music indirectly, mediated by one's emotional response to the music (Figure 1). Our findings demonstrated that children with high perspective-taking ability tended to experience ambivalent emotions, such as a combination of sweet and tragic emotions, as well as heightened emotions.

In addition, particularly pleasant emotions like sweet and heightened emotions contributed to a preference for sad music (Figure 1).

The effect of PT on emotional responses to sad music is a new finding obtained in the present study. According to Eisenberg et al. (1991), when participants watched a film that induced sympathy and focused on emotional content, PT was positively correlated with vicarious emotional reactions. If PT is a prerequisite or promotional factor of vicarious emotions, emotional responses in this study were also strengthened by perspective-taking ability.

## Acknowledgments

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