

# **Is There an Emotional Component to Giftedness? The Effect of Cognitive Manipulation on the Emotional Experience of Gifted and Ordinary Children**

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I am not the first to try to shed light on the relationship between cognition and emotion. In this paper I present research whose aim is to assess, on the one hand, the contribution of heightened cognition, that characterizes the phenomenon of giftedness to the emotional experience, and to assess, on the other hand, in what way the emotional experience affects cognitive function as expressed in performance tests.

But first, I need to address two questions:

A. Why should we expect that giftedness include also an emotional component?

What are the grounds for the claim that gifted children differ from ordinary children regarding the emotional experience?

B. What is the basis for the claim that emotion has an effect on cognitive function?

To address the first question: Reviewing the empirical research on giftedness, one sees that the definition of giftedness nearly always centers on high intelligence. The researcher who is attempting to put together a sample, considers the gifted to be those individuals who received the highest score on intelligence tests. Yet at the same time, the theoretical literature contains increasing numbers of models that try to give a multi-dimensional and qualitative expression to the phenomenon of giftedness. For example, Tannenbaum (1983) claims that in addition to high intelligence, the gifted need extra-intellectual traits such as industriousness, the ability to work hard and to invest, and that they also need a unique emotional “springboard”, if you will. Tannenbaum here is referring to a profile of positive emotions that contributes to the fulfillment of the potential of the gifted, without which the gifted will not be recognized as gifted.

The stipulation of the emotional uniqueness of the gifted as a differential component of the definition of giftedness is especially obvious in the speculative model of Piechowsky (1991). According to this model, the gifted have a tendency to experience highly stimulating emotions (such as anger, surprise, fear, and enthusiasm). They also have the tendency to experience emotions very intensively, and the tendency to experience positive emotions (such as happiness, love and wonder).

The empirical research of Sabatini (2003) confirms the existence of emotional differences between gifted and ordinary children. Sabatini compares gifted children to ordinary children with regard to five basic emotions: *happiness, sadness, fear, love, and anger*. She found significant differences between the two populations in the experience of these emotions; the gifted experienced these emotions with greater intensity. Sabatini also discovered that the emotional experiences of the gifted children are more complex and richer.

In sum, there is a theoretical and an empirical basis for the claim that gifted children will experience emotions differently from ordinary children.

Now, let's go back to the second question: What is the basis for the claim that emotion has an effect on cognitive function? In a study by Isen (1999), the results show that the two groups which were manipulated into a positive emotional state, by funny movie or some candies, succeeded on the cognitive tasks significantly better than the other groups. There was no difference between the group that underwent negative manipulation and the neutral groups.

In another study by Feldman and Sullivan, negative emotions were found to hamper cognitive function. The two researchers compared the results of I.Q. tests that the subjects took while they were in a fearful state of mind and again, under neutral conditions, and a gain of twenty to thirty points was found under the neutral conditions

My object was to address these two questions by means of the methodology of emotional manipulation but in a different way. The two sample groups, consisting of two hundred and twenty three gifted children and two hundred and twenty two ordinary children, aged

thirteen to sixteen, boys and girls, filled out a questionnaire which consisted of a report of the emotions that they had experienced in the past few weeks.

Immediately after this, the subjects performed a test patterned after an intelligence test. In this way we received an emotional profile and a level of cognitive proficiency for an ordinary emotional state with no manipulation.

Two weeks later, each subject received feedback from the test patterned after an intelligence test. The written feedback contained a grade, but it was not the true grade. A subject who had done above average on the test received a much higher grade on the feedback. A student who had done below average on the test received a radically lower grade. In other words, on the feedbacks students received results that were extreme, either much higher or much lower than they deserved.

Immediately after the subjects saw their grade, they filled out a questionnaire, reporting on the emotions that they were experiencing at that moment. In addition, the subjects performed a test of cognitive function, in the same format as the test they had performed earlier. The emotional manipulation, therefore, consisted of receiving the extreme grade on the test. Those who had received an especially low grade underwent negative manipulation, and those who had received an especially high grade underwent positive manipulation.

The manipulation indeed affected the cognitive performance. In the analysis MANOVA for repeated measures, significant differences were seen between the performance before the manipulation and the performance after the manipulation. Both of the manipulations, the positive as well as the negative one, caused a drop in the performance of the cognitive task.

It appears that the very occurrence of the manipulation put the subjects in a state containing the characteristics of stress. The defensive patterns of the state of stress disrupt cognitive performance by making the stages of information processing more difficult and by preventing the subject from freeing herself up for cognitive needs that are not directly related to stress. One can also claim that the falsified feedback put the subjects into a state of learned helplessness. Seligman (1975) has proved that this state makes the performance of a cognitive task difficult.

In addition to the direct affect of the manipulation on cognitive performance, the effect of the emotions on cognitive function without the manipulation component was also examined.

In analyses of the multiple regression for the different populations and situations, both with and without manipulation, an effect of between ten and twelve percent was found for emotions on cognitive performance. In an analysis of the hierarchical regression, an addition of five percent was found of emotions, for the explained differences in the second step and in the third step. This demonstrates that there is an emotional effect, for the good (for the emotions of surprise and anger) and for the bad (for the emotions of sadness and fear) with regard to cognitive function.

We need now to clarify the differences that exist between the gifted and the ordinary children.

In an ordinary situation, that is, before the manipulation, the differences were consistent. For all of the emotions, the gifted children scored higher than the ordinary children, but primarily for the negative emotions.

As for the emotions following the manipulation, the emotional intensity among the ordinary children is significantly higher in an analysis of all of the emotions taken together.

In sum, under ordinary condition gifted children have a slightly higher emotional intensity than ordinary children. After the manipulation, the situation is reversed – the ordinary children responded more extremely with a higher emotional intensity.

Does the difference in the emotions of gifted children and ordinary children teach us something about the essence of giftedness?

One could claim that the difference in the emotions stems from the intellectual uniqueness of the gifted children, and one could describe this difference as a characteristic that accompanies high intelligence. In the first instance, the high intelligence of the gifted child affects the emotions via the cognitive component that is present in every emotion, and in the second case, giftedness is defined not only in terms of intelligence but also in terms of an emotional uniqueness, that is not subordinate to

intelligence. This approach reflects the model of Piechowsky. The other possibility, according to which high intelligence is the cause of the difference, receives confirmation from the theory of emotional regulation. This theory deals with emotional manipulation and prompting by means of cognitive evaluation components. The cognitive process upon which the regulation is based, gave rise to the finding that after manipulation into an emotional state more intense than normal, the gifted children will experience emotions of a lower intensity because their emotions are regulated to a greater degree of cognitive efficiency.

Therefore, in contrast to Piechowsky's findings, the high-intelligence gifted children will be emotionally affected to a lesser degree.

**In sum,** in this study the relation between cognition and emotion, became apparent both by means of the effect that manipulation of the emotions has, on the performance of a cognitive task, and by means of the difference in both the mundane emotions and the emotions after manipulation, for those of high and ordinary intelligence. Regarding the significance of the emotions in gifted children, the results I have presented, in my view, support the view that the emotional differences between gifted and ordinary children have their source in their cognitive superiority, and not in a unique emotional makeup.