

# Explicit and implicit naïve concept of talent - relations with self-esteem Machiavellianism and self-determined motivation

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## Introduction

In the present study we made an attempt to answer questions concerning the explicit and implicit naïve concept of talent.

This study was conducted to determine:

- if students of different fields - social sciences, arts and natural sciences - differ in explicit and implicit concepts of talent
- if the explicit and implicit concepts of talent are different among people high and low in self-esteem, Machiavellianism and self-determined motivation.

The existence of the folk psychology of talent was proposed by John Sloboda, Jane Davidson, and Michael Howe (1994, cf. Sloboda 2005). They indicated that people find talent as an innate trait responsible for differences among people in their musical abilities. In previous research (Chełkowska & Kałmuk, 2014) we have found that people have their own naïve concepts of talent and perceive it in two general ways – as a result of hard work or as an innate trait. We also found some associations between field of work or study and perception of talent's determinants.

Self-esteem and a specific view on human nature – Machiavellianism, are associated with the intrinsic and extrinsic aspects of motivation (McHoskey, 1999; Deci & Ryan, 2012) and are considered important determinants of success (for review see: Baumeister et al., 2003; Fehr, Samson & Paulhus, 2009).

We hypothesized that the implicit and explicit concepts of talent and their interrelations with self-esteem, Machiavellianism and self-determined motivation would be significant in understanding success, and could have potential application in the area of education, especially in supporting the development of child's and adolescent's abilities.

## Procedure and Sample

### QUESTIONNAIRES

- General Motivation Scale (28 items)
- MACH-IV (20 items)
- Rosenberg's Self-Esteem Scale (10 items)
- Explicit Attitude towards Talent (8 items)

### SAMPLE

- 40 students
- music
- psychology
- education
- science (physics, mathematics, robotics)

All questionnaires and subscales obtained satisfactory reliability measures (Cronbach's Alpha between 0,62 and 0,95).

### IRAP Procedure: Talent is / is not

INNATE	THE RESULT OF A HARD WORK
Genetic* ( <i>genetyczny</i> )	Taught* ( <i>wyuczony</i> )
Biological* ( <i>biologiczny</i> )	Trained* ( <i>wyćwiczony</i> )
Hereditary* ( <i>dziedziczny</i> )	Educated* ( <i>wyszkolony</i> )

\* A translation from Polish language (*Polish words used in the procedure are in brackets*)

Participants were asked to fill in the Rosenberg's Self-Esteem Scale and the General Motivation Scale first, than the IRAP procedure was implemented and at the end the other two questionnaires were filled.  
Two participants did not pass the training part in the IRAP procedure.

## Results - Correlations

Table 1. Spearman's rho coefficient with 95% confidence intervals (in brackets) IRAP and other measures, N = 38

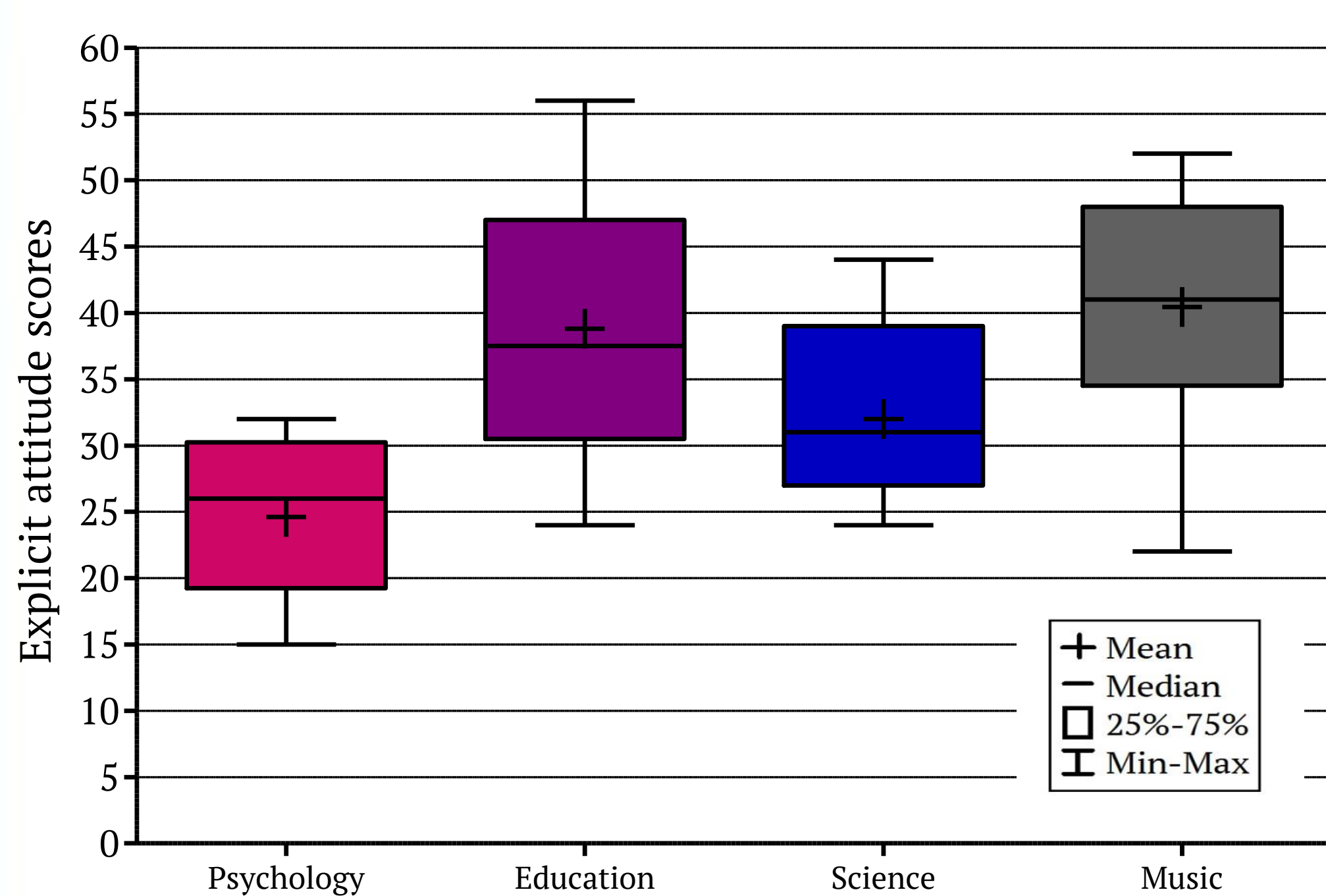
	IRAP	IRAP tt1	IRAP tt2	IRAP Acquired 1 tt2tt4	IRAP Acquired 2 tt2tt3	Explicit
Self-Esteem Scale				,358* (,020; ,588)		
Machiavellianism		-,398* (-,631; -,089)				
IM - to know	-,332* (-,583; -,014)		-,348* (-,595; -,032)			-,334* (-,585; -,016)
IM - toward accomplishment			-,380* (-,618; -,068)			
IM - to experience stimulation			-,470** (-,681; -,175)			
Amotivation			-,331* (-,583; -,013)		-,390* (-,625; -,079)	
General Motivation			-,427** (-,651; -,123)		-,0357* (-,602; -,042)	

IM - Intrinsic motivation  
The rest of the correlations coefficients were non-significant  
\* p<0,05, \*\* p<0,01

The correlations show that an implicit attitude that talent is acquired is related to higher self-esteem.  
Lower motivation among participants is related to an implicit belief that talent is innate.  
All correlations are medium and are not stable regarding the sample size.

## Results Explicit attitudes

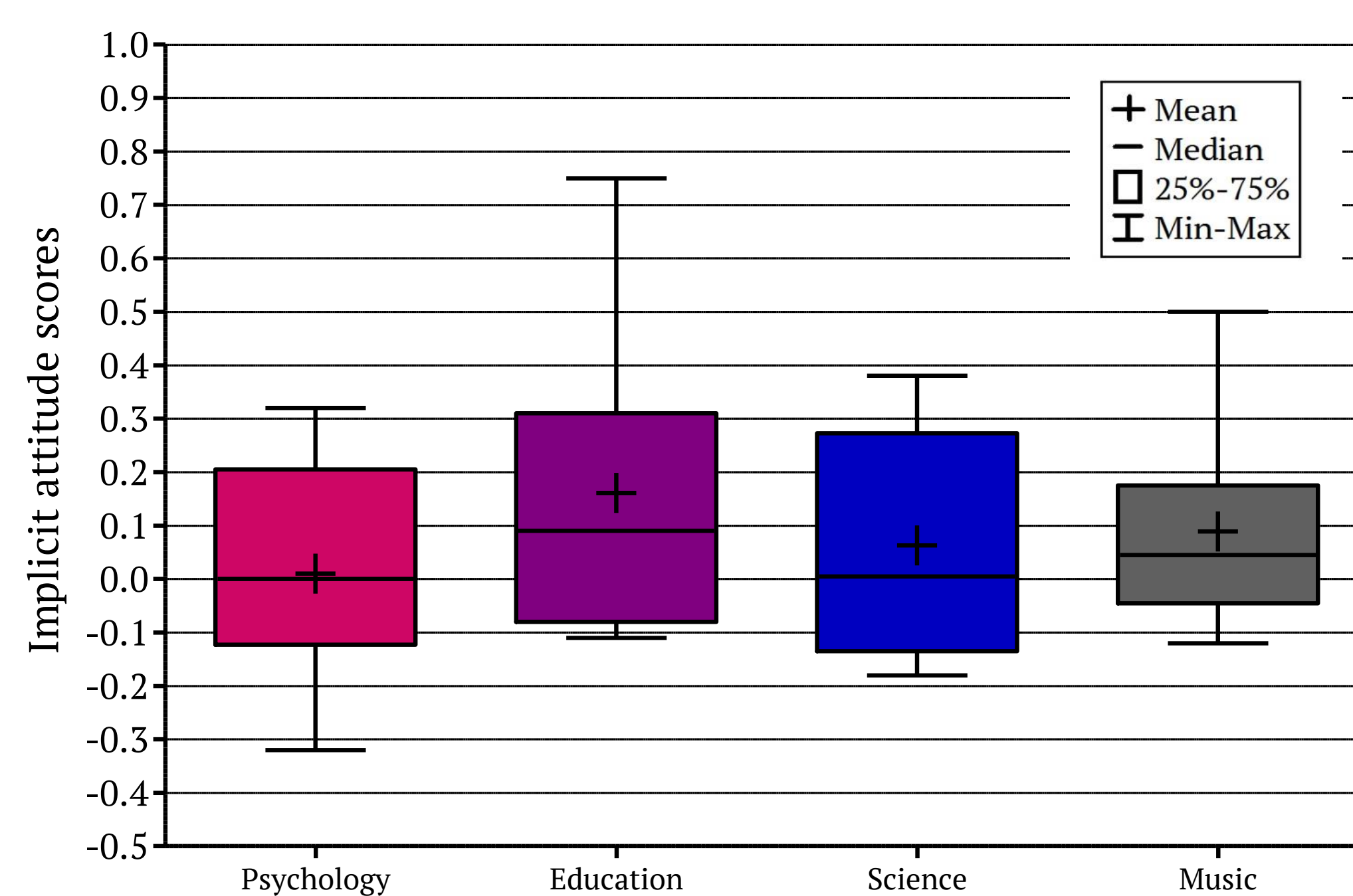
Figure 1. Differences between groups in explicit attitude towards talent



There was a significant effect of a group affiliation on levels of explicit attitude (Fig. 2),  $F(3, 36) = 7,658, p < 0,001$ . Effect size of the group variable was medium ( $\eta_p^2 = 0,340$ ). Significant differences occurred among psychology and - science and music students. Attitude towards innate talent in latter groups was higher than in psychology students group (Tukey HSD:  $p < 0,01$ ).

## Results - ANOVA Implicit attitudes

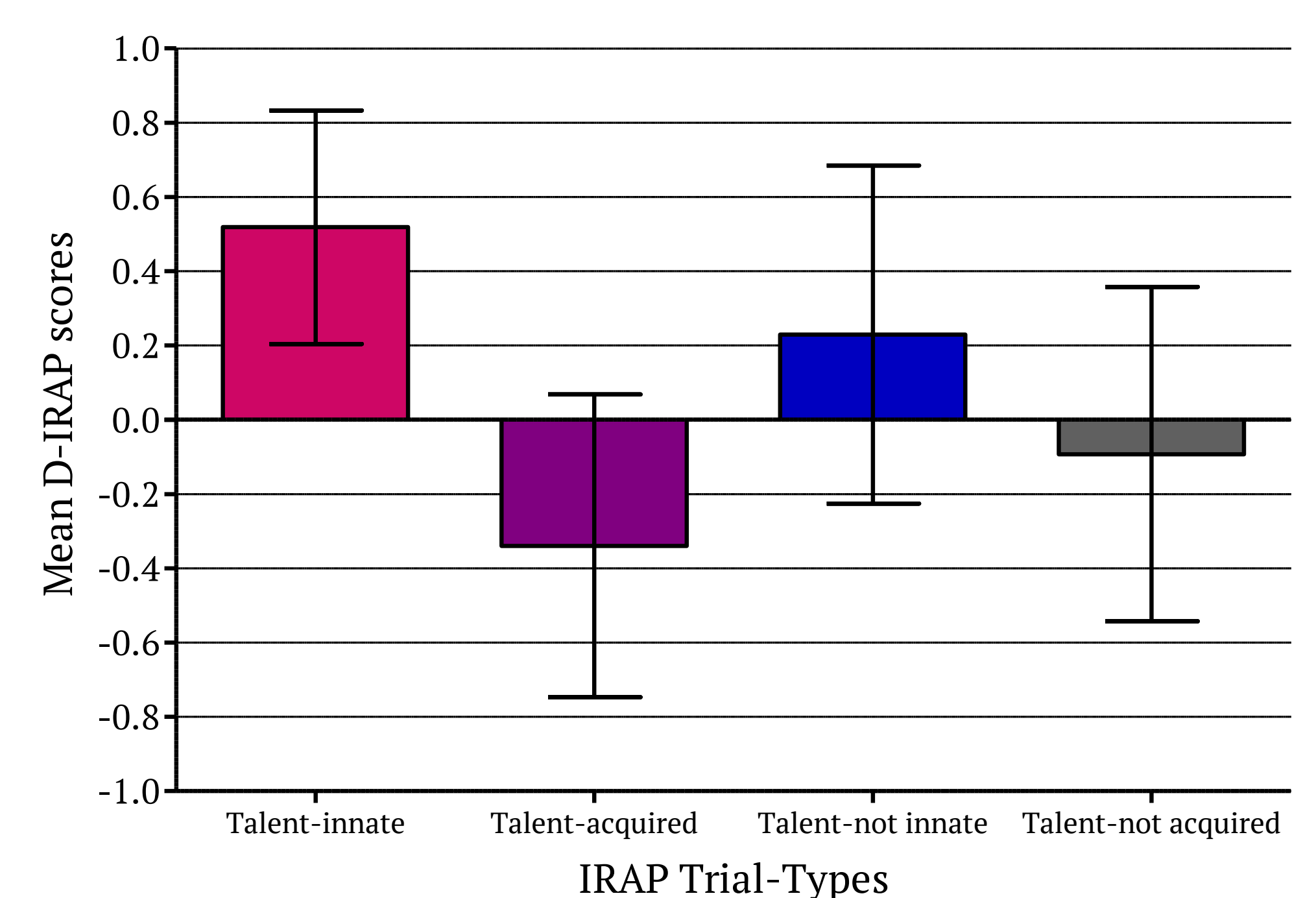
Figure 2. Differences between groups in implicit attitude towards talent



There was no significant effect of a group affiliation on levels of implicit attitude (Fig. 3),  $F(3, 34) = 0,716, p > 0,5$ . Effect size of the group variable was very small ( $\eta_p^2 = 0,056$ ).

## Results - ANOVA ANOVA - D-IRAP scores

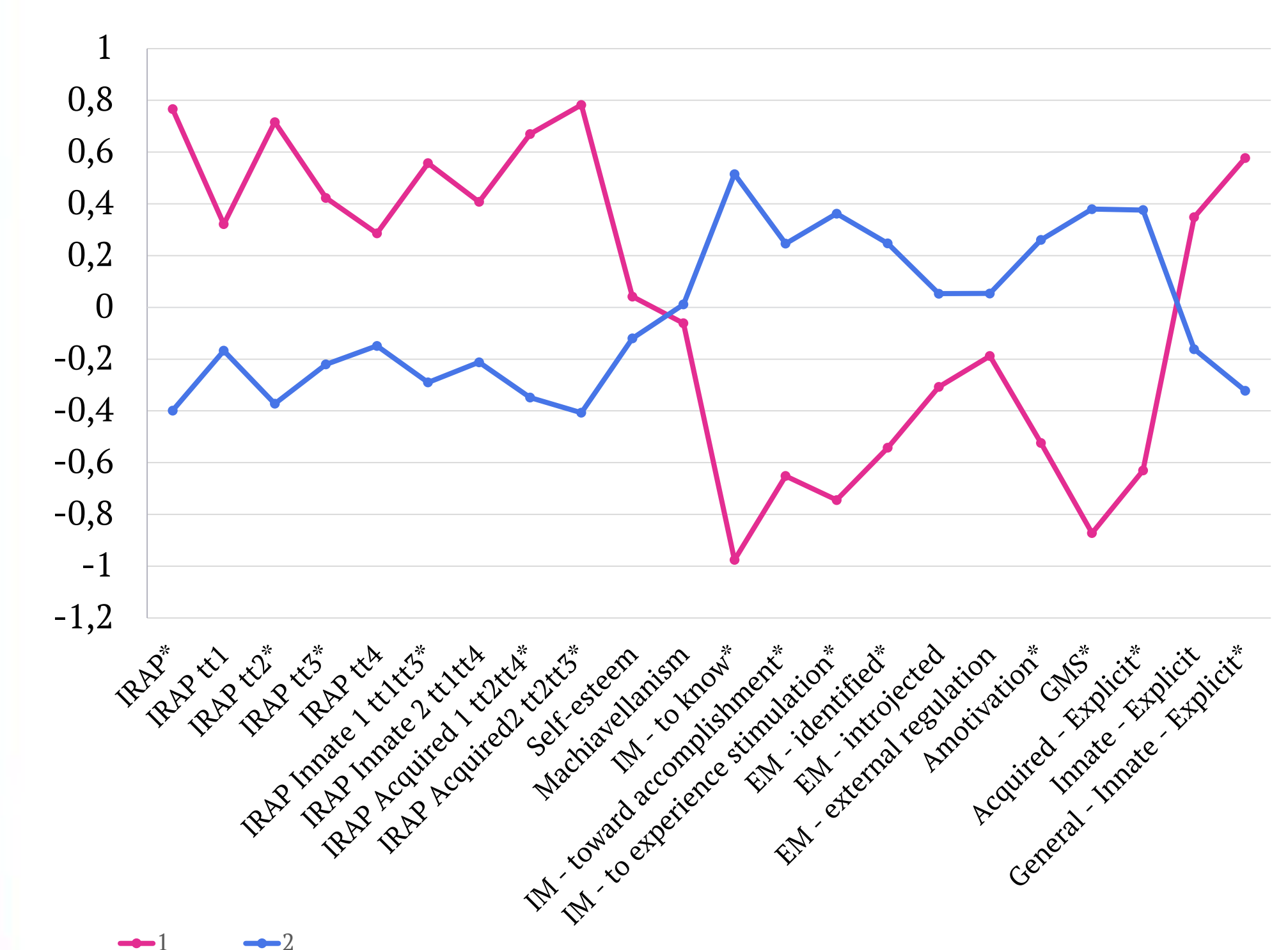
Figure 3. Trial-type D-IRAP scores with standard deviation bars



One-sample t tests indicated that scores for three out of the four trial types (except of trial type four) differed significantly from zero. Significant differences were found between trial types,  $F(3, 148) = 29,05, p < 0,001, \eta_p^2 = 0,37$  - post-hoc HSD comparisons indicated significant differences between all trial types, except of trial type two and four.

## Results - K-means clustering

Figure 4. K-means clustering for all variables, N=38



Differences between two clusters in variables marked with \* are significant

To find more information on possible profiles of people's implicit and explicit attitudes towards talent, motivation and Machiavellianism, a cluster analysis was conducted. Cluster analysis contained all variables measured in the study (along with subscales of General Motivation Scale).

K-means clustering revealed two profiles:

1. Implicit belief that talent is an innate trait went along with lower inner motivation, lower external motivation - identified, lower amotivation, lower general motivation and explicit believe that talent is an innate trait.
2. Implicit belief that talent is an acquired trait went along with higher inner motivation, higher external motivation - identified, higher amotivation, higher general motivation and explicit believe that talent is an acquired trait.

Chi-squared analysis revealed that there is a medium association between **group affiliation** and **cluster affiliation** ( $M - L \chi^2 (df=3) = 7,866, p < 0,05, Cramer's V = 0,443$ ).

Correspondence analysis showed that cluster one was associated with group of education and music students and cluster two was associated with group of psychology and science students.

## Summary

1. According to hypotheses, implicit naïve concepts of talent are associated with self-esteem, Machiavellianism and self-determined motivation, additionally we have found an association between explicit concept of talent and intrinsic motivation to know.
2. Science and music students report greater bias towards belief that talent is innate than psychology students. Also cluster analysis revealed that there are two profiles - and - along with Chi-squared analysis - show that psychology and science students have higher motivation and believe that talent is more a matter of work than of innate capabilities.
3. Two profiles revealed in cluster analysis suggest that in line with the belief that talent is an innate trait goes lower motivation and with the belief that talent is an acquired trait goes higher motivation. Those results indicate that the explicit and the implicit naïve concepts of talent are important aspects of human belief systems and may have impact on their motivation and action.

Results suggest that students from different fields of studies understand the concept of talent differently and may suggest that the choice of career is associated with the person's view on ability to achieve a mastery in the relevant field. The results indicate that there is a need for further research in this field.

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## References

1. Barnes-Holmes, D., Barnes-Holmes, Y., Power, P., Hayden, E., Milne, R., & Stewart, I. (2006). Do you really know what you believe? Developing the Implicit Relational Assessment Procedure (IRAP) as a direct measure of implicit beliefs. *The Irish Psychologist*, 32 (7), 169-177.
2. Baumeister, R. F., Campbell, J. D., Krueger, J. I. & Vohs, K. D. (2003). Does High Self-Esteem Cause Better Performance, Interpersonal Success, Happiness, or Healthier Lifestyles? *Psychological Science in the Public Interest*, 4, 1, 1-44. doi: 10.1111/1529-1006.01431
3. Chełkowska, M., Kałmuk, A. (2014, September). *Implicit theory of talent - empirical research*. Poster session presented at the XXXV Congress of the Polish Psychological Association - Psychology in a Changing World, Bydgoszcz.
4. Deci, E. L., & Ryan, R. M. (2012). Motivation, personality, and development within embedded social contexts: An overview of self-determination theory. In R. M. Ryan (Ed.), *Oxford handbook of human motivation* (pp. 85-107). Oxford, UK: Oxford University Press. doi: 10.1093/oxfordhb/9780195399820.001.0001
5. Fehr, B., Samsom, D., & Paulhus, D. L. (1992). The construct of Machiavellianism: Twenty years later. In: C. D. Spielberger & J. N. Butcher (Eds.), *Advances in personality assessment* (Vol. 9, pp. 77-116). Hillsdale, NJ: Erlbaum.
6. Guay, F., Mageau, G., & Vallerand, R.J. (2003). On the hierarchical structure of self-determined motivation: A test of top-down and bottom-up effects. *Personality and Social Psychology Bulletin*, 29 (8), 992-1004.
7. McHoskey, J. W. (1999). Machiavellianism, Intrinsic Versus Extrinsic Goals, and Social Interest: A Self-Determination Theory Analysis. *Motivation and Emotion*, 23, 4, 267-283. doi: 10.1023/A:1021338809469
8. Sloboda, J. (2005) *Exploring the Musical Mind: Cognition, Emotion, Ability, Function*. Oxford: Oxford University Press