

## Cognitive style and gender differences in spatial abilities

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### Introduction

There have been at least two major reviews of perceptual differences among women and men in the past 30 years. Spatial abilities is the area where males usually show better results comparing with the females. Baker (1987) described in his research that visual acuity is greater in men than women. Space perception - shaped reflection of the spatial characteristics of the surrounding world, the perception of the size and shape of objects, their relative position in which is particularly significant taking part visual, motor, and vestibular analyzers. At the cores of perception of the space are measuring distances and angles in the environment, performed by active movements under control exercised by organs of the senses. For the sensual distinction of up and down, forward and back, left and right directions is needed functional asymmetry of the human body.

### Methods

The experiment took place from 20/10/09 to 22/03/10. It consisted of two phases, the first step is the detection of cognitive style and with a strong style of the FI/FI, and examinees were further testing.

- Research methods:
- ✓ "Compass" test is a type 2D Mental Rotation Test (MRT), where participants should find one of the cardinal compass direction.
  - ✓ Method for determining cognitive style FI / FD ACT-70 K.U. Ettrih.
  - ✓ Bem Sex Role Inventory (BSRI).

### Results

As a result of the pilot and main experiment in the analysis of 118 persons were allocated 41 people with the expressed manifestations of field independence and field dependence. Statistical analysis of the data for all indicators revealed the relationship between indicators of field independence/ field dependence and the level of spatial discrimination. The results are shown in the following table.

Table 1 - Value the Pearson correlation coefficient

		Compass	Gender	FI / FD test
Compass	Pearson Correlation		,685(**)	-,340(*)
	Sig. (2-tailed)		,000	,042
	N		41	41
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	Sig. (2-tailed)	,000		
	N	41		
FI / FD test	Pearson Correlation	-,340(*)		
	Sig. (2-tailed)	,042		
	N	41		

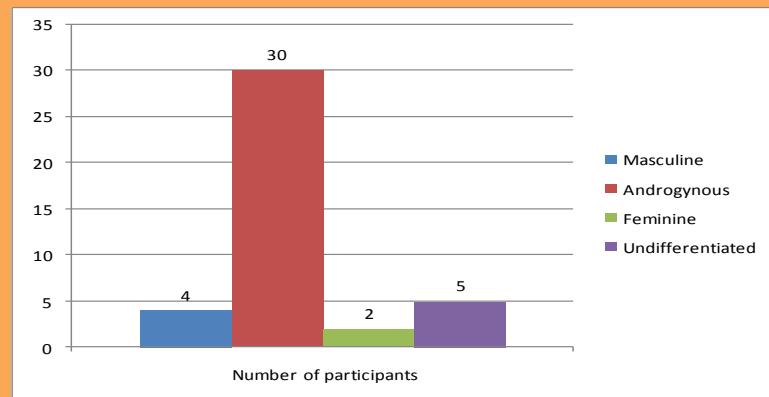


Figure 1. The gender identification.

### Conclusion

Expressed indicators of cognitive style exist only by a limited range of subjects. During the experiment there were found significant differences between men and women in the spatial abilities (mental rotation). So men have higher levels of spatial distinction and higher indicators of velocity in a space perception. During the experiment there were identified differences in the spatial abilities between field independence and field dependence individuals. According to our research the influence of gender identification on spatial task performance in both samples females and males didn't reveal any significance. Gender characteristics influence on sex-related behavior of participants. Androgyny as a result of combination of masculinity and femininity would be a best strategy.

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