

# STATEMENT

given by **Prof. Dr. Encho Nedyalkov Gerganov, PhD**

concerning the PhD Dissertation of **Ivailo Georgiev Panov**

on topic:

## **COMPARATIVE SCANNING METHOD (cSM) CAPABILITIES IN ANALYSIS, VISUALIZATION, AND PSYCHOLOGICAL INTERPRETATION OF EXPERIMENTAL 'PREFERENTIAL CHOICE' DATA**

Ivailo Panov's dissertation is a thorough scientific study of the problems related to the types of data and their collection and analysis with the most adequate methods. The doctoral student discusses in detail the types of data according to Clyde Coombs' *Theory of Data* and the methods of obtaining them, such as *Preferential Choice Data*, *Single Stimulus Data*, *Stimuli Comparison Data* and *Similarities Data*. For the first time, he introduced the comparative Scanning Method (cSM) for processing, analyzing, visualizing and interpreting of psychological experimental data of the fourth type in Coombs' classification, namely "Preferential Choice Data". He discusses in detail the theoretical rationale for using this method, the algorithms for analyzing data using cSM, and conducts over 10 experimental studies within its framework. By analyzing the data obtained within this method, he demonstrates that it is an innovative technology for designing experiments and for processing, analyzing, visualizing, and interpreting psychological experimental data. He rates this method as one of the most significant scientific contributions to theory. Another important theoretical contribution is the derivation of new measurable, comparable, and interpretable concepts in its own theoretical base, namely: *Internal criterion*; *Reference stimulus* or *reference zone*; *Structured semantic/attributive space*; *Matching Factor /F/*; *Localization* of the Reference zone; *Range*; *Gradient*;

*Uniform (diffuse) idiographic distribution, type I; "Clustering" idiographic distribution, type II, etc.* Another contribution to the theory is the proven possibility of alternatively studying respondents with certain cognitive deficits or young children for whom quantitative self-assessment in an experimental procedure is difficult (or practically impossible).

New knowledge about the "choice-by-preference" as a cognitive process can also be added to the essential contributions, namely:

- Verification of the fundamental construct in the comparative Scanning Method: the *reference stimulus*.

- Revealing the structure and specifics of three-dimensional feature/attributive spaces of visual and acoustic stimuli selected for investigation.

- Ascertaining the stabilization of the "internal criterion" in the process of personal development and growth.

- Discovering a weak correlation between *preference stability* and *anxiety of the subjects*.

- Drawing a psychometric curve explicating the actual preference for a complex visual stimulus whose constituent *diameters* are in the "golden ratio" proportion relative to a stimulus whose constituent *areas* are in the same proportion.

- Experimentally establishing a collective *ideal point* whose "internal criterion" strength is greater than any of the individual ones

- Demonstration of the relationship between the "choice-by-preference" and the manner of subjective viewing of visual stimuli—the subjects' gaze lingered significantly longer on preferred objects.

There are also significant contributions in terms of technological algorithms. The doctoral student has developed computer programs for using the comparative scanning method in psychological experimental research. The

numerous experimental studies described in the dissertation and the resulting data analyzed by the comparative Scanning Method prove the productivity of this method and its potential for a variety of psychological research.

In conclusion, I can make the summary that the dissertation of Ivailo Panov is a scientific work with new methods, theoretical formulations and results, obtained through his method for analysis and visualization of psychological experimental data—the comparative Scanning Method (cSM).

I propose **Ivailo Georgiev Panov** to be awarded with PhD degree.

The Statement is prepared by:

**Prof. Dr. Encho Gerganov:** .....