

Project specification

MEi:CogSci 1st year semestral project

TOPIC OF SPECIALISATION

Dual process theories vs. unimodal, psychology, philosophy of science

PHENOMENON & (PERSONAL) GOALS

The aim of the project is to give a closer look at the Default-interventionist model. In the first place, we investigate whether our empirical data support the model. Secondly, we going to compare the above-mentioned model with unimodal (see abstract).

The requirement of interdisciplinarity is fulfilled by the application of results. At the end, we discussed psychological and philosophical consequences of our results.

LEARNING OUTCOMES

Subject specific

- an ability to look for research problem in the broad topic

Methodological

- an ability to approach a phenomenon in an interdisciplinary manner
- improving skills in SPSS, Psyt toolkit

Generic

- Ability to write and follow a project plan
- Self-reflection while working on project

Systemic

- Interdisciplinary work/thinking
- Project-oriented work and organisational skill
- Critical evaluation of approaches & methods
- Quick orientation & navigation in mother and/or novel complex field
- Change of viewpoint/perspectives (intellectual mobility)
- Phenomenon-oriented thinking
- Problem-solving abilities

PROJECT

Project title: Two in one or one in two? A closer look at the default-interventionist model

Short Project Description

The aim of this paper is to test the default-interventionist model. We would like to find out whether people use dual processing when reasoning or there are two types of reasoners. In the other words, whether we have to different processes or there is just one type of process.

Project Plan

In order to achieve the learning outcomes specified for the project I will take the following measures:

Project steps:

- ✓ studying of literature
- ✓ defining a project problem
- ✓ choosing of the specific questionnaires, tests and tasks
- ✓ pre-research
- ✓ data collecting
- ✓ data processing
- ✓ poster

Detailed description of main parts:

I. Literature research

- scientific journals
- is continuing
- about 30 hours of literature research till research problem and specific topic was formulated
- about 10 hours to prepare poster

II. Formulating hypotheses

- H1: There are no significant differences in cognitive reflexive task under time pressure across several professional backgrounds.
- H2: There are significant differences in cognitive reflexive task under and without time pressure.
- H3: Success in cognitive reflexive task correlates with cognitive inhibition and relevance of education to the task.
- about 5 hours

III. Planning of experiment

- about 8 hours

IV. Realisation of the experiment

- programming of internet-based experiment in Psytoolkit
- sharing of the experiment in social networks
- about 30 hours
- <http://www.psytoolkit.org/cgi-bin/psy2.0.8/survey?s=2FJwx>

V. Data analysis & interpretation of data

- testing hypotheses
- using SPSS
- about 20 hours

VI. Documentation of project

- about 10 hours to write the abstract
- about 45 hours to prepare poster

ABSTRACT:

Differences in thinking across cultures and individuals have been a mystery since early human history. Nowadays, it is quite popular to explain that mystery by dual process theories. On the one hand, there are scientists who presume that such theories have a solid foundation. On the other hand, there are scientists who have opposite opinions.

The default-interventionist model is mostly supported by empirical evidence [1]. Basically, it could be described as a model of the interactions between system 1 and system 2. Authors emphasize the role of individual differences. However, Kruglanski [2] considers this evidence to be a proof for single process theory instead of the dual one. He claims that individual differences matters very much. The result of such thinking is that at the end of the analysis, there is no distinction between intuitive and deliberative process.

The aim of this paper is to test the aforementioned model. We would like to find out whether people use dual processing when reasoning or there are two types of reasoners. In our experiment, participants (N = 250) performed a cognitive reflection task and no-go task. There were two conditions in the reflection task – with and without time pressure. Furthermore, we investigate a knowing cognitive style, level and quality of education, and the level of confidence about answers in cognitive reflection task. The core hypothesis is formulated as follows: there are no significant differences in cognitive reflexive task under time pressure across several professional backgrounds. We use various statistical methods to interpret the data.

Our findings maintain the previous supportive evidence for the default-interventionist model. Nevertheless, a closer look suggests that Kruglanski has a point. Results show that respondents working or studying in technical fields are equally successful in solving reflection task in both conditions. We can say that this default reaction is connected with the availability of the particular type of reasoning and probably depends on training. In conclusion, we consider the empirical evidence as the manifestation of two different types of reasoners instead of dual processing.

Acknowledgments

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References

- [1] J.S.B.T Evans and Stanovich, K.E. "Dual-Process Theories of Higher Cognition: Advancing the Debate", *Perspectives on Psychological Science*, vol.8, no.3, pp. 223–241, 2013
- [2] A.W. Kruglanski, "Only One? The Default Interventionist Perspective as a Unimodel—Commentary on Evans & Stanovich", *Perspectives on Psychological Science*, vol.8, no.3, pp. 242–247, 2013

Resources needed:

Psytoolkit, SPSS, Microsoft Visio, Microsoft Power-Point, Image cartoonizer

Notes and reminders:

I have changed the topic of my project at the beginning of May. The main milestone is to have everything done till 15.6.