



H.F.R.I.
Hellenic Foundation for
Research & Innovation

Description of the funded research project
1st Call for H.F.R.I. Research Projects to Support Faculty
Members & Researchers and Procure High-Value
Research Equipment

Title of the research project: Levels of cognitive and linguistic cognizance from preschool age to adolescence: Their interactions with executive and reasoning processes

Principal Investigator: Nikolaos Makris

Reader-friendly title: The development of cognitive and linguistic awareness

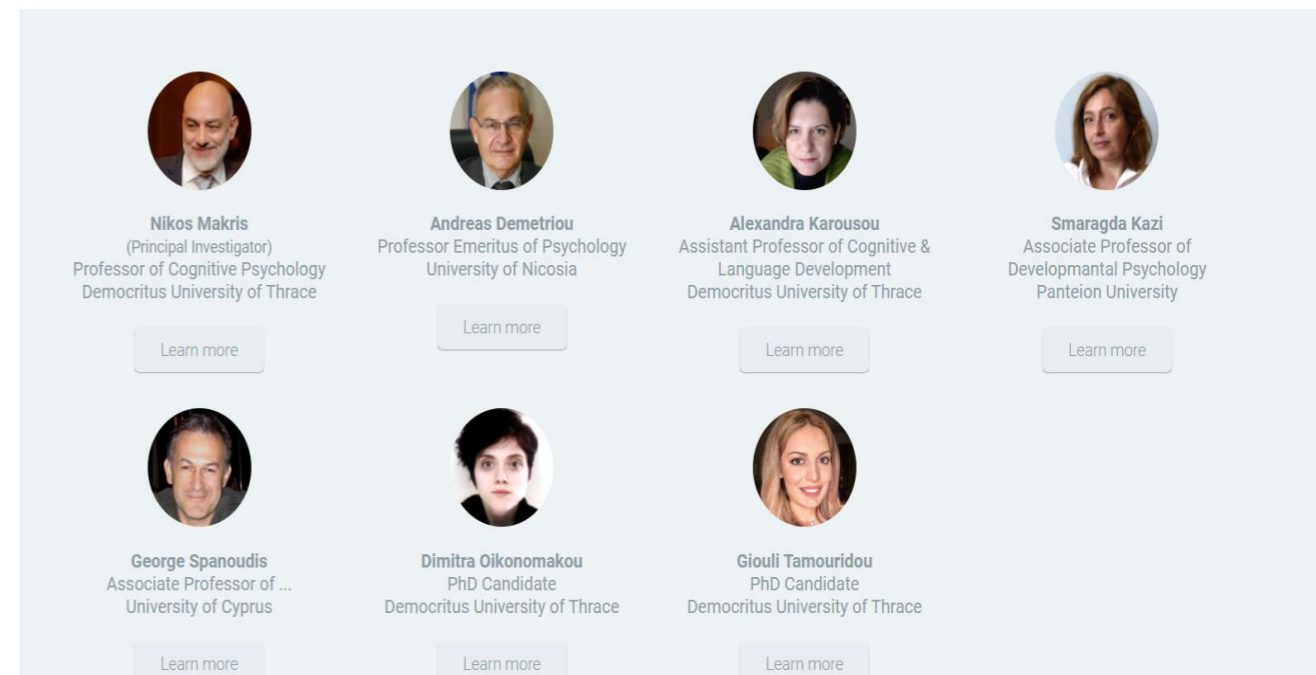
Scientific Area: Social Sciences








Institution and Country: Greece

Host Institution: DUTH

Collaborating Institution(s): Panteion University, University of Nicosia, University of Cyprus

Project webpage: <http://lecogn.eled.duth.gr/>



 <p>Nikos Makris (Principal Investigator) Professor of Cognitive Psychology Democritus University of Thrace</p> <p>Learn more</p>	 <p>Andreas Demetriou Professor Emeritus of Psychology University of Nicosia</p> <p>Learn more</p>	 <p>Alexandra Karousou Assistant Professor of Cognitive & Language Development Democritus University of Thrace</p> <p>Learn more</p>	 <p>Smaragda Kazi Associate Professor of Developmental Psychology Panteion University</p> <p>Learn more</p>
 <p>George Spanoudis Associate Professor of ... University of Cyprus</p> <p>Learn more</p>	 <p>Dimitra Oikonomakou PhD Candidate Democritus University of Thrace</p> <p>Learn more</p>	 <p>Giouli Tamouridou PhD Candidate Democritus University of Thrace</p> <p>Learn more</p>	

Budget: 155.000, 00 €

Duration: 36 months

Abstract

We study the development of awareness and its influence on executive control and reasoning development from 3 to 17 years of age. We examine how lower level executive processes are transformed into reasoning and language ability and vice-versa. These processes develop over four cycles: (1) episodic, (2) realistic mental, (3) rule-, and (4) principle-based representations, from birth to 2, 2-6, 6-11, and 11-17 years, respectively. We predict that (1) each developmental cycle is marked by a specific cognitive profile where mental processes are tuned to the dominating representation type (e.g., control of attentional focus, inferential awareness, and mental self-representation dominate in the three higher cycles, respectively; (2) the mediation of cognizance between executive and reasoning processes is cycle-specific; (3) with development, mediation of cognizance changes from bottom-up to top-down effects. Participants from 3 to 17 years will be examined longitudinally. Batteries will address processing efficiency, executive control, reasoning, language ability and cognizance. Structural equation modelling and graph analyses will specify latent dimensions and their relations. The study is unique in exploring all of these mental processes over a long age period. Also, this is the first study examining the role of cognizance in the development of executive control, reasoning, and language. This approach will resolve major questions in cognitive and differential psychology and provide the basis for innovations in intelligence testing and educational interventions.

Project originality

The study is unique in several respects. First, there is no study, to our knowledge, which examined all of mental processes summarized above through such as long age period. This will generate a unique opportunity to specify and detail the organization of these processes and their change in state and inter-relations from early childhood to adolescence. Second, this is the first study, where the role of cognizance as a major developmental factor is systematically examined. This approach will resolve several major questions in cognitive and differential psychology. For instance, it may highlight a missing factor in our understanding of individual differences in cognitive development and intelligence. Third, it is also useful for the planning of educational interventions by focusing learning on the proper process according to phase. Therefore, the study may have a major impact on the science as it may contribute to the integration of three disciplines of psychology: cognitive, developmental, and differential psychology. As such it may also positively impact society through its implications for education and clinical practice. In principle, it may also affect the economy, through the new diagnostic and teaching technologies that may one derive from it as outlined above.

Expected results & Research Project Impact

The study may have a scientific economic, and social impact.

Scientific impact

The study may have a strong influence on developmental and cognitive science because it contributes to the integration of three disciplines of psychology: cognitive, developmental, and differential psychology. It will provide strong empirical evidence highlighting how central cognitive mechanisms, such as cognizance and executive control, change in development and drive individual differences in reasoning processes underlying intelligence.

Economic and/or social impact

The study may also positively impact society through its implications for education and clinical practice. The findings of the study will have clear implications for educational (e.g., showing how learning to think and solve problems may be improved) and clinical practice (e.g., it has implications for processes associated with self-regulation that suffers in various clinical conditions). This may also have economic implications, because new diagnostic and teaching technologies may be produced that may become available to educational, diagnostic, and clinical organizations. This may come as a result of collaboration with national and international companies that produce psychological/testing instruments. It is of no less importance that graduate and postgraduate students will be trained in high level psychological research in several respects, such as experimental design, technical implementation, and very advanced statistical and mathematical modeling of cognitive processes. In fact, the longitudinal design of the study allows its extension for many years, if well integrated into the graduate studies of the universities to be involved.

The importance of this funding

In Greece, during the last decades, the lack of financing research projects has been noticeable in all scientific fields and especially in the field of social sciences. This shortage of funding, significantly affected both the production and diffusion of new scientific knowledge. Consequently, the contribution of the Greek scientific work is considered limited to a great extent and so is its recognition by the international scientific community. In this respect, the importance of our project's funding is twofold. Firstly, it enables us to carry out a study that should have significant theoretical and practical implications in the field of cognitive development and, secondly, it allows the empowerment of the Greek cognitive –developmental psychology internationally.
Special thanks to HFRI.



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