

HABILITATION THESIS REVIEWER'S REPORT

Masaryk University

Faculty

Faculty of Economics and Administration

Procedure field

Economics

Applicant

Ing. Marek Hudík, Ph.D.

Applicant's home unit, institution

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Habilitation thesis

Games and Goal-oriented Behavior

Reviewer

doc. Barna Bakó, PhD

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The habilitation thesis titled 'Games and Goal-oriented Behavior' by Marek Hudik formalizes the Hayekian notion of equilibrium and compares it to different solution concepts commonly used in game theory. The thesis has 14 chapters and three appendices. In the following, I will comment on the main results of the thesis from my point of view before evaluating and concluding with my overall recommendation.

In the first part of the thesis (chapter 2-4) the goal-oriented strategies are formally defined and based on this richer strategy set a new framework together with a new solution concept is introduced. Then, the characterization of this solution concept and its difference from the commonly used solution concepts such as the Nash equilibrium or the Pareto efficiency is presented. This, by itself is an important contribution to the literature. To formally analyze the motivation of the decision makers in a strategic situation is not an easy task, but in my opinion the author's attempt is not just successful but his solution is elegant as well.

The next part (chapter 5-8) focuses on several extensions of the basic model. First, the model is extended to capture random events, then players are allowed to have multiple goals, and finally, an extension is introduced that includes players' beliefs. These generalizations revolve around important and crucial concepts. I do acknowledge that the questions analyzed in this part of the thesis are quite challenging, but would have preferred to see a more explicit motivation and discussion of these new ideas. In my opinion this part of the thesis is a bit short-spoken and a more thorough and detailed analysis would have been appreciated.

The next two chapters present noteworthy results related to OCP and Nash equilibrium. The differences between these two solution concepts are highlighted. Chapter 11 provides an overview of the goal-directedness and it is shown how it can serve as a unifying concept for various behavioral results. This, in my opinion is a rather important result and the author makes an excellent job with the comprehensive presentation.

In chapter 12 a new classification of strategic games based on the players' goals is presented and the difference between the conventional and the suggested classification is discussed. In chapter 13 it is shown how this new framework, centred around the goal-oriented reasoning, can be used to explain empirical phenomena which might look somewhat paradoxical from a classical point of view, such as the feasibility of cooperation in a one shot Prisoner's dilemma game.

The final chapter concludes with methodological remarks and further research suggestions are made.

To sum up, the thesis is well written, the research question is well defined, the analysis is well executed, the method applied is appropriate and suitable for the analysis. The author's reasoning is clear and logical throughout the analysis, the arguments are convincing and well supported. The author presents his results in a comprehensive and sound way in a writing style that was easy to follow and made the reading enjoyable. The relevant literature is well covered and the list of references is impressive.

Overall, the thesis is of high quality, it certainly fulfils the requirement of a habilitation and I would like to congratulate the author for the achievements presented in it.

Reviewer's questions for the habilitation thesis defence (number of questions up to the reviewer)

1. The framework presented in the thesis is static. Would it be possible to include dynamic coordination in it and how might that change the main results?
2. Mixed-strategies are not considered in the thesis. What is the reason to exclude them from the analysis?

Conclusion

The habilitation thesis entitled 'Games and Goal-Oriented Behavior' by Marek Hudik **fulfils** requirements expected of a habilitation thesis in the field of Economics.

Date: August 27, 2020.

Signature:

