

Accepted Manuscript

Bounded Depths of Rationality and Implementation with Complete Information

Rene Saran

PII: S0022-0531(16)30039-4
DOI: <http://dx.doi.org/10.1016/j.jet.2016.06.002>
Reference: YJETH 4569

To appear in: *Journal of Economic Theory*

Received date: 13 December 2014
Revised date: 8 June 2016
Accepted date: 15 June 2016

Please cite this article in press as: Saran, R. Bounded Depths of Rationality and Implementation with Complete Information. *J. Econ. Theory* (2016), <http://dx.doi.org/10.1016/j.jet.2016.06.002>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Bounded Depths of Rationality and Implementation with Complete Information*

Rene Saran[†]

Abstract

We move towards a more robust theory of individual behavior in mechanism design by allowing hierarchies of players with varying but bounded “depths of rationality”. Specifically, we study (full) implementation with complete information when players are at least rational and at most k -rational, where $k \geq 2$. We show that the set of implementable social choice functions (SCFs) is independent of the upper bound k . In “independent domain of preferences” (IDP) environments, we obtain a revelation principle: An SCF is implementable if and only if it is implementable by its associated direct mechanism. Two conditions characterize such SCFs: Strategy-proofness and “strong non-bossiness”. For non-IDP environments, we provide a characterization and simple necessary and sufficient conditions. We also analyze the case when rationality is at least mutual knowledge. There is a significant gap in implementation when rationality is mutual knowledge and when it is not. However, it does not make a significant difference whether rationality is mutual knowledge or common knowledge.

Keywords: Implementation; Complete Information; Bounded Depths of Rationality; Common Knowledge of Rationality; Mutual Knowledge of Rationality

JEL: C72; D78; D80

*This paper supersedes an earlier version Saran (2013). I thank the associate editor and two anonymous referees for their insightful comments and suggestions. I have benefited from conversations with Geoffroy de Clippel and Roberto Serrano on a related paper, de Clippel, Saran and Serrano (2014). I thank them for thought provoking discussions and comments. I also thank Dirk Bergemann, Sandro Brusco, Yeon-Koo Che, Pradeep Dubey, Ignacio Esponda, Eduardo Faingold, Johannes Hörner, Navin Kartik, Takashi Kunimoto, Laurent Mathevet, Antonio Penta, Ludovic Renou, Arunava Sen, Tomas Sjöström and seminar audience at Brown, Columbia, NYUAD, Stony Brook, UW-Madison, Yale, AMES 2013 (Singapore), and Econometric Society’s NAWM 2014 (Philadelphia) for their comments and suggestions. I thank Yale-NUS College Start-Up Grant for financial support.

[†]Division of Social Sciences, Yale-NUS College, 16 College Ave West #02-221, Singapore 138527. *Email:* rene.saran@yale-nus.edu.sg; *Tel:* +65 6601 3379

Download English Version:

<https://daneshyari.com/en/article/7359469>

Download Persian Version:

<https://daneshyari.com/article/7359469>

[Daneshyari.com](https://daneshyari.com)