Cover Letter: A bibliometric study of research topics, collaboration and influence in the Iterated Prisoner's Dilemma.

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To the editors,

This paper presents a bibliometric study of the field the "Prisoner's Dilemma". It identifies and presents five research topics in the field using a topic modeling technique, and moreover, it explores the collaborative behaviour of its authors using a graph theoretic analysis of the co-authorship network. Our work extends and improving on previous results which include manuscripts appearing in Palgrave Communications.

A bespoke piece of software is used to automatically collect metadata from 2420 articles on the field, from 4 prominent journals, which includes Nature, and the preprint server arXiv. The Latent Dirichlet Allocation technique is used to identify five research topics in the field which are demonstrated to have been relevant over the course of time. The collaborative behaviour of the field is analysed and compared to two other game theoretic fields, "Auction games" and "the Price of Anarchy". Our results demonstrate that the Prisoner's Dilemma is a collaborative field but it is not necessarily more collaborative than other scientific fields, moreover, authors in the Prisoner's Dilemma do not influence or gain much information by their connections, unless they are connected to a "main" group of authors.

This paper offers a strong contribution on two fronts:

- It demonstrates the usage of modern data mining and natural language processing on identifying the topic structure of a subject area which has attracted the attetion of researchers across fields.

- It demonstrates the usage of modern data mining and data analysis techniques on understand the behaviour of authors in game theoretic fields; which in a sense, understanding behaviour, is the aim of the game theory itself.

We feel that our paper is an excellent fit for Palgrave Communications as our paper is within the scope of the journal, as demonstrated by a number of publications in the field. One such example is the work of Youngblood and Lahti: "A bibliometric analysis of the interdisciplinary field of cultural evolution" which in 2018 was published in Palgrave Communications and demonstrated how a bibliometric analysis and co-authorship networks can be used to identify the subdisciplines of an interdisciplinary field and to investigate trends in collaboration and productivity between these subdisciplines.

This work has been carried out with the highest standard of reproducibility: all scripts for collecting data and code for the analysis are not only well described but they are also all open source, archived and made available online. Furthermore the piece of software developed for this work is easily installable for python and available to researchers to carry out similar work.

Thank you for taking the time to consider our work,

The Authors.