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| 10 January 2022 |

Dear Editors,

I write to submit a manuscript, “Human capital mediates natural selection in contemporary humans”, to Nature Human Behaviour. My coauthor is Abdel Abdellaoui. We have blinded the manuscript. Our contact details are:

* David Hugh-Jones, School of Economics, University of East Anglia, Norwich, UK; [D.Hugh-Jones@uea.ac.uk](mailto:D.Hugh-Jones@uea.ac.uk) or [davidhughjones@gmail.com](mailto:davidhughjones@gmail.com)
* Abdel Abdellaoui, Department of Psychiatry, Amsterdam UMC, University of Amsterdam; [a.abdellaoui@amsterdamumc.nl](mailto:a.abdellaoui@amsterdamumc.nl)

This paper examines natural selection in contemporary humans. A small set of papers have found evidence for contemporary natural selection (e.g. Beauchamp 2016). However, as yet there is no overarching theory explaining what drives natural selection. Our contribution is to remedy that. We estimate natural selection on 33 polygenic scores, over 2 generations, extending the range and timescale of previous work. We find surprising patterns in the data, with effect sizes being smaller or even reversed among different social groups. We show that these patterns can be explained by the economic theory of fertility, first developed by Becker (1960). And we test the theory, by showing that human capital mediates the relationship between polygenic scores and fertility. Lastly, we show that our results can increase genetic inequality and the unfairness of the “genetic lottery” (Harden 2021).

Some suggested reviewers:

* Jonathan Beauchamp wrote the major paper on contemporary natural selection on educational attainment. He is an economist with interests in genetics.
* David Laibson is a senior economist with serious interests in genetics.
* Augustine Kong is first author of another paper on contemporary natural selection.
* Aysu Okbay has published several important papers in human genomics. She’s also an economist.

Jonathan Beauchamp, David Laibson and Aysu Okbay would all be helpful in reviewing the economic model as well as the empirics. Other possibilities might be Dan Benjamin or David Cesarini. Note that any of these may have reviewed previous versions of this paper.

Here are our acknowledgements, and other information removed for double-blinding:

AA is supported by the Foundation Volksbond Rotterdam and by ZonMw grant 849200011 from The Netherlands Organisation for Health Research and Development. This study was conducted using UK Biobank resources under application numbers 40310 and 19127.

To compute polygenic scores and PCs, the same procedures were followed as described in “Genetic correlates of social stratification in Great Britain”, Abdellaoui et al. NHB 2019.

Yours faithfully,

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David Hugh-Jones  
Associate Professor  
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