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## **Empirical signatures of universality, hierarchy and clustering in culture**

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# *Stellingen*

behorend bij het proefschrift

## *Empirical signatures of universality, hierarchy and clustering in culture*

1. Collections of cultural trait sequences associated with real individuals show structural properties that are remarkably robust across different data sets.

(Chapter 1)

2. There is evidence that empirical sequences of cultural traits are unique, unbalanced mixtures of abstract sequences associated with a small number of omnipresent rationalities.

(Chapter 2)

3. Assuming that social influence under bounded confidence is the main driver of cultural dynamics in the real world, forecasting this dynamics should require little or no explicit simulations.

(Chapter 3)

4. Empirical structure identified by means of random matrix theory should be interpreted with caution, especially in the context of cultural similarity matrices.

(Chapter 4)

5. The properties of the “prototype evolution” method proposed by Stivala *et al.* are highly sensitive to the inclusion of cultural prototypes among the sequences of traits in the output of the method, a choice for which no reasonable justification seems to exist.

A. STIVALA *et al.*, SCIENTIFIC REPORTS **4** (2014) 4870.

6. The work of Poncela-Casasnovas *et al.* provides important evidence in favor of approaches to describing human behavior in terms of multiple rationalities.

J. PONCELA-CASASNOVAS *et al.*, SCIENCE ADVANCES **2** (2016) 8.

7. In the random matrix study of Patil and Santhanam, it would be more informative to compare empirical eigenvector uniformities to the whole distribution entailed by the null model, rather than just with the average of this distribution.

A. PATIL, S. SANTHANAM, PHYS. REV. E **92** (2015) 032130.

8. It is important to investigate the extent to which the structural properties of culture can be explained in terms of the core-periphery mechanism for opinion formation presented by Stolzenburg and Lux.

U. STOLZENBURG AND T. LUX, EUR. PHYS. J. B **84** (2011) 4 521-533.

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Leiden, 24 October 2018