Online Appendix for Are Human Rights Practices Improving?

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Figure A.1.1: Trends in Farris's Scores are Similar to Trends in Latent Scores Estimated Using Only Five Indicators of Mass Killing (as in Figure 4 of the manuscript, but different countries)



Note: Similar trends also can be generated from mass killing events combined with random numbers substituted for the actual values of lesser violations.¹

¹ We generated the random numbers by several distinct algorithms. All methods produced similar improving trends. One algorithm assigned equal probability to random values, restricting the range to the actual values that each indicator could take, i.e. 0, 1, or 2 to each of all four CIRI indicators; 1,2,3, 4, or 5 for the PTS State Department, etc.). Another algorithm assigned random values with probabilities that corresponded to the actual frequencies of each value in the actual data using the frequencies across time and all countries, and using the frequencies across time and within each country.











Figure A.1.4: Trends in Farris's Scores are Similar to Trends in Latent Scores Estimated Using Only Five Indicators of Mass Killing (as in Figure 4 of the manuscript, but different country examples)

Figure A.2.1: Trends in Farris's Scores are often non-intuitive (Soviet Satellite Mongolia and the US)



Figure A.2.2: Trends in Farris's Scores are often non-intuitive (Venezuela and the US)



Figure A.2.3: Trends in Farris's Scores are often non-intuitive (Afghanistan and the US)



Figure A.2.4: Trends in Farris's Scores are often non-intuitive (South Africa and the US)



Figure A.2.5: Trends in Farris's Scores are often non-intuitive (Mexico and the US)



Figure A.3: Declining Frequencies of Mass Killing Records (5 specific variables and their sum)

Note: as in Fariss's data



Figure A.4: Three Predictions of Future trends in Fariss's Latent Human Rights Scores after 2010

As long as the frequency of mass killing does not return to pre-cold war levels, Fariss's model would produce latent scores with an improving trend in the future. Future records of lesser violations of human rights will matter little (see Note 3).



Note 1: The blue line shows that there would be a strong improving trend in Fariss's latent scores if the incidents of mass killing follow the same pattern as it did between 2001 and 2010. The red line shows that there still would be steady improvement in Fariss's latent scores even if the incidents of mass killings after 2010 follow the same pattern as it existed between 1991 and 2000. The black line shows that there will be NO improvement in Fariss's latent scores if the incidents of mass killings after 2010 follow the same pattern as it at existed between 1991 and 2000. The black line shows that there will be NO improvement in Fariss's latent scores if the incidents of mass killings after 2010 follow the same pattern as it did between 1981 and 1990.

Note 2: For this simulation, the dichotomous values for mass killings for all country years were simply replicated for the period 2011- 2020. Then the patterns in dichotomous values were replicated for each succeeding decade until 2050. Thus the structure of the actual data is preserved in the sense that only those countries that had mass killings were expected to have them again in the future. The incidents of mass killings in the simulation were, therefore, restricted to authoritarian and failed states as in real life.

Note 3: Random numbers were used for the values of lesser violations. The algorithm assigned random values with probabilities that corresponded to the actual frequencies of each value in the actual data across time and within each country. Such reshuffling preserves the range and frequencies of the actual values that each indicator could actually take in each country, i.e. 0, 1, or 2 to each of all four CIRI indicators; 1,2,3, 4, or 5 for the PTS State Department, etc.).

Figure A.5.1: A Comparison of the Trends of the Dynamic Latent Human Rights Estimates, 1949-2010 (similar to Figure 2 in the manuscript but using an alternative algorithm for generating random values)

Black Line: Replication of Figure 3 in Fariss (2014: 308)

Blue Line: The values of ALL indicators of Lesser Human Rights violations were replaced by *random numbers*



Note1: Random numbers were used for the values of lesser violations. The algorithm assigned random values with probabilities that corresponded to the actual frequencies of each value in the actual data across time and within each country. Such reshuffling preserves the range and frequencies of the actual values that each indicator could actually take in each country, i.e. 0, 1, or 2 to each of all four CIRI indicators; 1,2,3, 4, or 5 for the PTS State Department, etc.).

Figure A.5.2: A Comparison of the Trends of the Dynamic Latent Human Rights Estimates, 1949-2010 (also similar to Figure 2 in the manuscript but here only values for CIRI indicators were replaced with *random numbers*)

Key: Unfilled Circles: Replication of Figure 3 in Fariss (2014: 308) Filled Circles: Replication of the same Figure 3 when the values of four CIRI Human Rights components are replaced *by randomly generated numbers*



Note: The real values of CIRI indicators are 0, 1, and 2. Thus, the randomly simulated indicators were created as sequences of random numbers taking the values 0, 1, or 2 with a probability 1/3.