

FORMAL DEMOGRAPHY

In work using formal demography, Espenshade, Simon Levin (Ecology and Evolutionary Biology), and OPR graduate student Analia Olgiati have initiated a study on population momentum. The purpose of the project is to decompose total population momentum into two constituent and multiplicative parts called “nonstable” momentum and “stable” momentum. Nonstable momentum depends on deviations between a population’s observed age distribution and its implied stable age distribution. Stable momentum is a function of deviations between a population’s implied stable and stationary age distributions. In general, the factorization of total momentum into the product of nonstable and stable momentum is a very good approximation. The factorization is exact, however, if the observed age distribution is stable or if initial fertility is already at replacement. The authors provide numerical illustrations by calculating nonstable, stable, and total momentum for 176 countries, the world, and its major regions. The paper brings together disparate strands of the population momentum literature and shows how the various kinds of momentum considered by researchers fit together into a single unifying framework. A paper on this project was presented in a session on formal demography at the annual meetings of the Population Association of America. A revised version will be published in the journal Demography in November 2011.

OPR graduate student Laura Blue and Espenshade are extending this work by examining population momentum across the demographic transition. Data are drawn from 16 countries around the world that represent various stages of the fertility and mortality transition.