

General Demographic Overview

Background

Demographic research lies at the nexus of social science research and shares much in common with other fields. The overlap between demography and other fields often puts it in a difficult place in terms of solidifying its place as a unique field. This may be especially true in the current era of large scale data production where research concerning “populations” is used by a larger number of research fields. These large N studies allow for more detailed divisions and subpopulations within a particular population to be studied, making the distinction between demography and other fields more blurred. While one could imagine a scenario where this could drain demography of its standing while other fields take over the space it once occupied this seems not to be the case. The expansion of data has come alongside an expansion in those that take a demographic mindset into their analysis and incorporate demographic methods into their respective fields of study. It may be because of this that we have seen a relative growth in the size of institutions in the United States that are associated with demographic research, while at the same time a collapsing down in the size and number of academic institutions that house a proper school of demography Xie (2000). In order to best summarize how we arrived at the current state of demography research I will discuss and review a brief series of papers that cover the history of demographic research in the 20 and 21st century, with particular attention to the development of the field in the United States.

Formal Demography and Population Studies

It is likely impossible to find a credible account of the history of demography in the United States without acknowledging Hauser and Duncan 1959 piece *The Study of Population*. The work attempted to establish demography as a legitimate social science and the particular research domains for which the field holds a special claim to. Though the work spans nearly 900 pages the often most cited passage comes to us as the direct, albeit vague, statement of what constitutes the field of demography. Hauser and Duncan state *Demography is the study of the size, territorial distribution, and composition of population, changes therein, and the components of such change*. While not stated specifically here the elements that constitute population changes in a society can be traced back to the forces of the demographic balancing equation, namely the increase contributed by births and the decreases attributed to death. If we subdivide our population into specific geographic areas then we must also consider how populations move in space and how these spaces may differentially experience births and deaths and thus, the particular focus that is placed on *territorial distribution*. How the age distribution of deaths, and the age of and number of children, predominately, women have are “shaped”, i.e. their age distributions, and how that shape changes are at the heart of what is now considered formal demography. On the other hand we have population process and social demography. This set of demography is more interested in the social drivers that alter the distributions of mortality, fertility, and migration. The distinction between the two fields has seen development of theoretical opposition happen in one field even if it was at the disman of the other, a topic that I will touch on further in this report.

The Demographic Transition: Fertility and Mortality

Changes in Child Mortality

Whether the distinction between these two fields is helpful or not its separation has helped shape the current state of the demographic field. Perhaps one of the most influential aspects from the formal demographic group has been the development of age-specific profiles of mortality and fertility and their relationship to developmental change in what is known as the demographic transition. Briefly the demographic transition states that as a country develops in its technologies and economic infrastructures it experiences a decline in its child mortality and then in its total fertility rate which leads to a period in the disruption of the equilibrium of balancing forces, causing an uptick in population Lee (2003). Child mortality declines are often associated with advances in care but can also be due to greater and more egalitarian access to care, an

increase in the social status of women, increased education of both men and women, as well as better overall access to reproductive health needs Caldwell (1990).

While the original theory was coined in the United States by demographer Warren Thompson around 1930, a number of subsequent articles have been written that expand on the timing, the population effect, and the applicability of the transition on a number of countries. One of the more discussed papers on the topic has been Caldwell's 1986 paper "Routes to Low Mortality in Developing Countries" Caldwell (1986). The paper uses the 1984 World Development Bank report in order to assess how both Infant Mortality Rate (IMR), the rate of death of persons under the age of 1, and Child Mortality Rate (CMR), the rate of death of persons under the age of 5, have varying country level differences and how those differences compare with over all period life expectancy at birth, level of income, as well as some qualitative assessments of investment by a country into the health systems infrastructure of the state, especially in Costa Rica, Cuba, and Vietnam. His primary focus on the analysis was on developing countries, termed third world countries in the original text, and how they ranked on their child health indicators.

In Caldwell's analysis he placed a strong focus on the idea of economic expectation of health outcomes. Whether by intention or not, his focus on the parallel's between economic success and health outcomes helped to cement the role of economic theory into the demographic transition. This is not to say that economics role was not present before this paper, much of the demographic transition research was originally formulated based on increasing economies within countries, however, the sheer influence of this paper has led to the continued use of expectation of health outcomes conditional on economic success even in contemporary work. A prime example of this is the use of the Socio-demographic index (SDI) measure used by researchers such as those from the work of the Institute for Health Metrics and Evaluation (IHME) in their work measuring IMR and expectations of IMR at a country level (???).

In his original work, Caldwell simply ranked countries based on their status for IMR/CMR and then by their GNP. He paid special attention to countries who "performed" higher or lower than expected based on their economic ranking using a criteria of having a health ranking either 25 places above or below their economic ranking respectively. Obviously, this measure was crude and ignored the quantitative differences in both IMR and GNP, however, the focus on strong achievers allowed Caldwell to build a set of hypothesis of the drivers of child mortality reduction that are not necessarily tied to the wealth of a country. Of particular note is Caldwell's focus on the autonomy of woman, education and political systems, as well as the cultural attitudes that may drive health outcomes.

While Caldwell's paper was without a doubt a huge step forward in the discussion of drivers of demographic change, it was met with many rebuttals and reflections from other demographers within the field. A particularly noteworthy revisitation to Caldwell's original piece was Randall Kuhn's 2010 article in Population and Development Review Kuhn (2010). Kuhn made particular care to revisit the limitations of the original article that had been made by himself as well as other researchers since Caldwell's original publication. In particular he focused on the causal language that was used especially related to the impact that religion could play on child mortality outcomes. This was easily refuted in other work by making country comparisons for states that were not included in the original analysis. Nonetheless, the lasting influence of Caldwell's paper led Kuhn to run a similar analysis of countries this time using a perhaps more indicative measure of person level economic standing, the purchasing power parity (ppp). The results led to some similar findings, countries that had high ppp but were primarily oil based economies still lagged behind in health standings related to IMR. The new updated rankings however found the relative lagging of health outcomes by country tend to change over time. This was especially true for Latin American and predominately Arabic countries Kuhn (2010).

despite this more careful attention to details Kuhn's article still places an extreme importance on economic success in the way that we frame health outcomes. Countries in Latin America who have political systems that are more socialist than here in the United States such as Cuba and Costa Rica are seen as exceptions despite both of these countries, as detailed in the paper, spending more on health care infrastructure. In addition the framework presented places a strong importance on average health outcomes and largely neglects variation in health outcomes. This comes along with language that often reflects a causal nature, even though Kuhn himself was critical of Caldwell's causal remarks, and calls into question when exactly a primary focus should

be placed on shifting trends in means of population measures in relation to country level indicators, in economics and beyond Greg J. Duncan (2008).

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