

# The Theory of Epidemiologic Transition: the Origins of a Citation Classic

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**ABSTRACT:** In 1971 Abdel R. Omran published his classic paper on the theory of epidemiologic transition. By the mid-1990s, it had become something of a citation classic and was understood as a theoretical statement about the shift from infectious to chronic diseases that supposedly accompanies modernization. However, Omran himself was not directly concerned with the rise of chronic disease; his theory was in fact closely tied to efforts to accelerate fertility decline through health-oriented population control programs. This article uses Omran's extensive published writings as well as primary and secondary sources on population and family planning to place Omran's career in context and reinterpret his theory. We find that "epidemiologic transition" was part of a broader effort to reorient American and international health institutions towards the pervasive population control agenda of the 1960s and 1970s. The theory was integral to the WHO's then controversial efforts to align family planning with health services, as well as to Omran's unsuccessful attempt to create a new sub-discipline of "population epidemiology." However, Omran's theory failed to displace demographic transition theory as the guiding framework for population control. It was mostly overlooked until the early 1990s, when it belatedly became associated with the rise of chronic disease. **KEYWORDS:** epidemiologic transition, demographic transition, population control, family planning, World Health Organization, public health.

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Abdel Omran's "The Epidemiologic Transition," published in the *Milbank Memorial Fund Quarterly* in 1971, is one of the more frequently cited papers dealing with the historical demography of populations.<sup>1</sup> As of early June 2009, Web of Science listed 570 instances of citation since its publication, while Google Scholar lists 1090. Although comparing article with book citations is problematic, it is worth mentioning that citations for this article are in a similar range as Thomas McKeown's far more influential and controversial books of the mid-1970s: *The Modern Rise of Populations* and *The Role of Medicine*.<sup>2</sup> Omran's article has been reprinted twice as a "classic." In 2001, it was reproduced in the section of the *Bulletin of the World Health Organization* devoted to "ground-breaking contributions to public health."<sup>3</sup> In 2005 it was again republished in a special edition of the *Milbank Quarterly* celebrating the Milbank Memorial Fund's one-hundred-year anniversary.<sup>4</sup>

Omran's article is usually understood as an argument about "the increased burden of chronic disease" as countries industrialize.<sup>5</sup> In this paper, we argue that Omran's theory of the epidemiologic transition had little to do with chronic disease but rather emerged out of the population control movement of the 1960s and 1970s that was responding energetically to a purported population "explosion." Like the earlier demographic transition theory, it posited three evolutionary stages. The first was the "age of pestilence and famine," characterized by high mortality and no population growth. Then came the "age of receding pandemics," when mortality declines and population growth becomes exponential. In

1. Abdel R. Omran, "The Epidemiologic Transition: A Theory of the Epidemiology of Population Change," *Milbank Mem. Fund. Q.*, 1971, 49, 509–38.

2. Thomas McKeown, *The Modern Rise of Population* (London: Edward Arnold, 1976); Thomas McKeown, *The Role Of Medicine: Dream, Mirage or Nemesis* (London: Nuffield Provincial Hospitals Trust, 1976).

3. Abdel R. Omran, "The Epidemiologic Transition: A Theory of the Epidemiology of Population Change," *Bull. World Health Organ.*, 2001, 79, 161–70.

4. Abdel R. Omran, "The Epidemiologic Transition: A Theory of the Epidemiology of Population Change," *Milbank Q.*, 2005, 83, 731–57.

5. Daniel M. Fox, "The Significance of the Milbank Memorial Fund for Policy: An Assessment at Its Centennial," *Milbank Q.*, 2006, 84, 5–36, 21. Also see Jean-Marie Robine, "Life Course, Environmental Change, and Life Span," *Population Devel. Rev.*, 2003, 29: 229–38; Mervyn Susser, "Epidemiology in the United States after World War II: The Evolution of Technique," *Epidemiol. Rev.*, 1985, 7, 147–77.

the third stage, the “age of degenerative and man-made diseases,” mortality continues to decline until it stabilizes at a low level. Nonetheless, Omran’s predominant concern was not disease but the transition from high to lower birth rates and how to promote it. His work was closely associated with the entry of the World Health Organization (WHO) into the domain of international family planning and with the inclusion of population control issues into the curricula of American schools of public health. The theory was also part of Omran’s effort to create a new sub-discipline of epidemiology—“population epidemiology”—meant to replace demography as the central scientific tool for international family planning. Omran’s work thus sheds valuable light on the not unproblematic entry of health institutions into the domain of population control during the 1960s and 1970s.

#### OMRAN’S CAREER

Abdel Rahim Omran (1925–1999) was born in Cairo, Egypt. In 1952, he graduated with an MD from Cairo University and married Khairia F. Omran (née Yousef Fawzy), who would also become a physician and birth-control researcher. Omran traveled to the United States, where he received an MPH (1956) and a DPH (1959) from Columbia University. He spent seven months among the Navajo of Many Farms, Arizona, field-testing an inexpensive skin test that could be used on children to detect tuberculosis cases.<sup>6</sup> Many Farms then represented one of the few places in the first world where experts were examining what were predominantly third world diseases.<sup>7</sup> Omran especially admired the “anthropological” approach the team was developing through the work of members like John Adair. Omran told an American-Arab periodical: “If the same approach of respecting local culture and understanding the people is used in other underdeveloped areas of the world, the formidable barriers to health progress based on cultural

6. Abdel R. Omran, “Use of the “Epidemiological Approach” in Evaluation of Tuberculosis Case-Finding by Tuberculin Testing of Young Children in an Area with Underdeveloped Resources.” Doctor of Public Health thesis, Columbia University, 1959.

7. David S. Jones, “The Health Care Experiments at Many Farms: The Navajo, Tuberculosis, and the Limits of Modern Medicine, 1952–1962,” *Bull. Hist. Med.*, 2002, 76, 749–90.



Fig. 1. Omran among the Navajo. The archival caption reads: "At Window Rock, the headquarters of the Navaho Reservation with Mrs Annie Waunika, the Chairman of Health Committee of the Tribal Council and Mr. Selth Bejay, the late delegate to the Tribal Council for the Many Farms area." *Source*: Abdel R. Omran, "Use of the "Epidemiological Approach" in Evaluation of Tuberculosis Case-Finding by Tuberculin Testing of Young Children in an Area with Underdeveloped Resources." Doctor of Public Health thesis, Columbia University, 1959. Photograph kindly provided by Archives & Special Collections, Augustus C. Long Health Sciences Library, Columbia University Medical Center, New York, New York.

background can gradually be eliminated."<sup>8</sup> This sensitivity to problems of service delivery in poor populations, a result of his own background perhaps, and certainly of his training, would distinguish Omran from the technocratically minded demographers who dominated the world of international population control (Figure 1).

After spending the next four years lecturing at Cairo University (1959–63), he returned to the United States and in 1966 was hired as associate professor of Epidemiology by the University of North Carolina at Chapel Hill. North Carolina was a major center of population studies and in 1969 Omran became associate director of the Carolina Population Center (CPC) and coordinator of the WHO Health and Fertility Studies based at the Center. He also served as consultant for the Ford Foundation, the UN Trust Fund for

8. Anonymous, "Rx for Good Will: An Arab Doctor's Work among the Navajos," *Arab World* 1958, 3–4, 8–11.

Population Activities (UNFPA), and the World Bank. In 1971, Omran was appointed full Professor of Public Health at Chapel Hill and became Director of the WHO International Reference Center for Epidemiological Studies in Human Reproduction. In 1978, he joined the WHO Expert Advisory Panel on Human Reproduction, and was Science Advisor to the Egyptian Ministry of Health. He left North Carolina in 1984 to become Director of Population and Health Studies at the University of Maryland's Center for International Development and Conflict Management. Subsequently, he joined George Washington University's Department of International Public Health and continued to consult for the WHO, UNFPA, and the World Bank, as well as various governments around the world.

Prior to 1966, Omran collaborated on epidemiological studies of infectious diseases in Egypt, conducted his own fieldwork on tuberculosis detection among the Navajos in Arizona, and supervised a similar study in Bolivia. In New York City, he did some work as a radiation epidemiologist linking brain cancers to X-ray treatments. After his move to Chapel Hill in 1966, he turned enthusiastically to the CPC's major concerns: fertility, family planning, and abortion. He recast himself professionally as a "population epidemiologist" and never looked back.

Omran's very substantial body of work (roughly 150 edited books, chapters, articles, reports and conference papers) was almost entirely devoted to issues of family planning, abortion, and reproduction. It was situated in two related institutional domains. The first was that of the WHO, just then becoming cautiously involved in family planning services. The second was in centers or departments of population studies recently created in schools of public health. To this we should briefly add another closely related sub-domain: institutions in Arab countries, and especially Egypt, devoted to family planning.

#### WHO AND FAMILY PLANNING

In 1951, Brock Chisholm, Director General of the World Health Organization, announced that WHO would respond to the government of India's request to help with a birth control education program. The ensuing public controversy nearly destroyed the organization. For the better part of the next decade, WHO would

avoid issues of population or family planning.<sup>9</sup> However, pressure from member governments resulted in the 1966 United Nations General Assembly resolution 2211 (XXI), calling upon organizations of the UN system to provide assistance for a wide range of population activities. This resolution allowed the Secretary-General a year later to set up the UNFPA to provide funding and technical assistance to member nations.<sup>10</sup>

Under these conditions, WHO adopted resolution 19.43 at the Nineteenth World Health Assembly, 20 May 1966, which decisively redefined fertility control as a health issue and established the organization's position on family planning activities. The key paragraph of the resolution stated that "the role of WHO is to give technical advice, upon request, in the development of activities in family planning, as part of an organized health service, without impairing its normal preventive and curative functions."<sup>11</sup> Repeated regularly at subsequent World Assemblies, this caveat distinguished WHO's commitment to health-service family planning from the demographic objectives of the mainstream population control movement. Moreover, the WHO actively opposed measures that threatened to divert personnel and resources away from health services to such family planning measures as financial incentives, mobile camps, and mass sterilization programs. In this regard, the WHO decidedly parted company with many population experts and organizations.<sup>12</sup>

The WHO justified integrating family planning and health services on a number of grounds.<sup>13</sup> First, qualified health personnel

9. John Farley, *Brock Chisholm, the World Health Organization, and the Cold War* (Vancouver: UBC Press, 2008); Ian R. Dowbiggin, "'Prescription for Survival': Brock Chisholm, Sterilization, and Mental Health in the Cold War Era," in *Mental Health and Canadian Society: Historical Perspectives*, ed. David Wright and James E. Moran (Montreal: McGill-Queen's University Press, 2006), 176–192.

10. Richard Symonds and Michael Carder, *The United Nations and the Population Question, 1945–1970* (London: Sussex University Press, 1973).

11. United Nations Fund for Population Activities, *The United Nations and Population: Major Resolutions and Instruments* (New York: Oceana, 1974), 209.

12. G. R. Kyzr-Sheeley, "Evolution of Population Policies in the World Health Organization, the World Bank and the United Nations Fund for Population Activities" (PhD diss., University of Indiana, 1980); Jason L. Finkle and Barbara B. Crane, "The World Health Organization and the Population Issue: Organizational Values in the United Nations," *Population Devel. Rev.*, 1976, 2, 367–93.

13. See for example, Finkle and Crane, "The World Health Organization and the Population Issue"; Alexander Kessler and Susi Kessler, "Health Aspects of Family Planning," in *Control of Human Fertility: Proceedings of the Fifteenth Nobel Symposium Held May 27–29, 1970 at Södergarn, Lidingö, Sweden*, ed. Egon Diczfalusy and Ulf Borell

were required to supervise and follow-up on the delivery of potentially risky and dangerous fertility control technologies with known complications and side effects. Second, WHO argued it was more efficient and convenient in terms of resources and personnel to combine health and family planning services. Health services were also well positioned to reach women more easily and provide post-partum services such as IUD insertion or female sterilization. Third, health services contributed to reducing infant mortality, which, it was claimed, was a prerequisite to fertility decline. Finally, after the embarrassing and expensive failure of the organization's global Malaria Eradication Program in the late 1960s, WHO took the position that countries needed to build up national health infrastructure *before* focusing on specific targets.<sup>14</sup> Family planning was only one aspect in much broader debate about disease control in which WHO advocated "horizontal" health programs dealing with a wide range of what were seen as interrelated health problems rather than "vertical" programs that focused on the eradication of single diseases. Although it was difficult to fully implement this concept, the WHO position culminated in the Alma-Ata conference of 1978 (co-sponsored with the United Nation's Children's Fund), which formally endorsed "primary health care" programs that addressed broad health problems of developing countries.<sup>15</sup>

From 1966 on, the World Health Assembly adopted a series of resolutions giving WHO a broad mandate to engage with human reproduction, family planning, and population dynamics, as long as the work was health related.<sup>16</sup> These resolutions enabled the organization to develop and evaluate family planning programs within health services for member states upon request. They also

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(Stockholm: Almqvist & Wiksell, 1971), 337–48; Socrates Litsios, *The Third Ten Years of the World Health Organization, 1968–1977* (Geneva: World Health Organization, 2008); Albert Zahra and Richard Strudwick, "The Role of the World Health Organization in Health Related Aspects of Family Planning," *Int. J. Health Serv.*, 1973, 3, 701–07.

14 Amy L. S. Staples, *Birth of Development: How the World Bank, Food and Agriculture Organization, and World Health Organization Changed the World* (Kent, Ohio: Kent State University Press, 2006); Theodore M. Brown, Marcos Cueto, and Elizabeth Fee, "The World Health Organization and the Transition from International to Global Public Health," *Am. J. Public Health* 2006, 96, 62–72.

15 Stephen J. Kunitz, "Explanations and Ideologies of Mortality Patterns," *Population Devel. Rev.*, 1987, 13, 379–408.

16 UNFPA, *The United Nations and Population*, 204–11.

reinforced WHO's commitment to support research in this domain. Among other projects, WHO initiated a program of collaborative epidemiological studies that focused on two main correlations: that between family formation patterns and health, and that between infant mortality and family planning practices.<sup>17</sup> These studies were designed to show that family planning was a legitimate health issue, and that parents would be more willing to participate in family planning programs if the survival of their children could be assured. They were meant to support WHO's unwavering position that family planning programs worked best when administered by medical personnel within public health infrastructures based in health ministries.<sup>18</sup>

In 1972, WHO established a Special Programme of Research, Development, and Research Training in Human Reproduction. By 1976, more than 650 scientists in 60 countries were involved in WHO studies on contraceptive pills and injections for women and men, IUDs, sterilization, abortion, and very controversial anti-fertility vaccines.<sup>19</sup> As part of the Special Programme, WHO launched a major epidemiological study co-directed by Omran in order to tease apart the complex interrelations between family formation, family health, and socioeconomic conditions.<sup>20</sup> Institutes of public health and community medicine in Ankara, Beirut, Gandhigram, Manila, and Teheran participated in the study, which was coordinated from WHO's North American center at Chapel Hill. WHO eventually published the results of its studies in two volumes co-edited by Omran.<sup>21</sup> Not surprisingly these studies showed that family planning programs were effective instruments for improving the health

17 Zahra and Strudwick, "The Role of the World Health Organization."

18. Barbara B. Crane and Jason L. Finkle, "Organizational Impediments to Development Assistance: The World Bank's Population Program," *World Polit.*, 1981, 33, 516–53.

19. A. Kessler and C. C. Standley, "The W.H.O. Expanded Programme of Research, Development and Research Training in Human Reproduction," *Proc. R. Soc. Lond. B.*, 1976, 195, 129–36; Nelly Oudshoorn, "From Population Control Politics to Chemicals: The WHO as an Intermediary Organization in Contraceptive Development," *Soc. Stud. Sci.*, 1997, 27, 41–72.

20. Zahra and Strudwick, "The Role of the World Health Organization."

21. A. R. Omran and C. C. Standley, *Family Formation Patterns and Health: An International Collaborative Study in India, Iran, Lebanon, Philippines, and Turkey* (Geneva: World Health Organization, 1976); A. R. Omran and C. C. Standley, *Family Formation Patterns and Health, Further Studies: An International Collaborative Study in Colombia, Egypt, Pakistan, and the Syrian Arab Republic* (Geneva: World Health Organization, 1981).



of mothers and children in developing countries. More importantly, they showed that cultural norms were malleable insofar as third world women were usually willing to use birth control on medical advice if they were told it was for maternal and child health.

The WHO was one of several new UN agencies to enter this field. UNFPA, the major UN funder of population control programs was joined by the World Bank in 1968. The Bank's new President, Robert McNamara, argued that rapid population growth had a "crippling effect" on economic development and directly hindered the Bank's mission by preventing "the optimum employment of the world's scarce development funds."<sup>22</sup> McNamara was deeply committed to population control; nonetheless, the World Bank effort did not develop into a strong lending program. Despite McNamara's demographic zeal, population planning lacked a strong organizational base within the Bank, and was eventually subordinated to other projects.<sup>23</sup>

Both international organizations were closely linked with an American agency that became the most important institution in this arena—the United States Agency for International Development (USAID). Between 1970 and 1978, the budget of the Agency's population program directed by Reimert T. Ravenholt, rose from \$75,000,000 to \$200,000,000 annually, making it by far the largest funder of population control programs in the world.<sup>24</sup> About 40 percent of this money went to international and nongovernmental organizations. The population program also provided a quarter billion dollars for the largest international social science survey ever attempted, the World Fertility Survey, initiated in 1972, while playing a major role in the development of new population control

22. Robert S. McNamara, *One Hundred Countries, Two Billion People: The Dimensions of Development* (New York: Praeger, 1973), 26–27; Crane and Finkle, "Organizational Impediments to Development Assistance," 517.

23. Martha Finnemore, "Redefining Development at the World Bank," in *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*, ed. Frederick Cooper and Randall Packard (Berkeley: University of California Press, 1997), 203–27; Jennifer Prah Ruger, "The Changing Role of the World Bank in Global Health," *Am. J. Public Health* 2005, 95, 60–70; Crane and Finkle, "Organizational Impediments to Development Assistance."

24. Matthew Connelly, *Fatal Misconception: The Struggle to Control World Population* (Cambridge: Harvard University Press, 2008).

technologies.<sup>25</sup> During the 1970s, USAID made the creation of population control programs a prerequisite for any development funding.<sup>26</sup>

Within this context, WHO and other health organizations were out of step with most population control organizations in rejecting the demographic targets set by population programs.<sup>27</sup> As a result, between 1970 and 1983 UNFPA gave WHO, its sister UN institution, less than half the monies it granted to nongovernmental organizations and various governments. Ravenholt threatened to cut USAID funding if UNFPA sub-grantees like WHO did not make population control a priority. He actually did cut off funding for the Pan American Health Organization (PAHO) because it assigned an “unduly large emphasis on the introduction of maternal and child health activities into family planning programs, *rather than the reverse.*”<sup>28</sup> With its budget of less than \$35,000,000 in 1977, WHO was not a big player in the population control field.<sup>29</sup>

The opposition of major population control agencies to WHO’s health service orientation ran very deep. Demographers and other population experts argued that fertility control was too “urgent” to be left to health organizations. Echoing the views of earlier advocates of vertical programs, they argued that population programs would be more effective and efficient if they were liberated from costly health services and scarce medical personnel and coordinated closely with the work of economic and social development.<sup>30</sup> Some countries, including Pakistan, Indonesia, Malaysia, Ghana, and Nicaragua, established national population and family planning programs independent of health services.<sup>31</sup> The field of population

25. *Ibid.*

26. Randall M. Packard, “Visions of Postwar Health and Development and Their Impact on Public Health Interventions in the Developing World,” in *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*, ed. Cooper and Packard, (Berkeley: University of California Press, 1997) 93–115, 105.

27. Finkle and Crane, “The World Health Organization and the Population Issue”; Connelly, *Fatal Misconception*.

28. Connelly, *Fatal Misconception*, 263.

29. *Ibid.*, 290.

30. Hans C. Blaise, “Who Is Responsible for Population Program Management?” in *Readings on Family Planning and Population Program Management. Background Papers for a Ford Foundation Meeting on Population, Elsinore, Denmark, June 1972*, ed. Ford Foundation (New York: Ford Foundation, 1973), 97–111; Forrest E. Linder, “Fertility and Family Planning in Relation to Public Health,” *Milbank Mem. Fund. Q.*, 1971, 49, 192–207.

31. Connelly, *Fatal Misconception*.

control became even more complicated after the famous Bucharest Conference of 1974 crystallized opposition to the population control movement, especially within developing nations, and instead emphasized “accelerated socioeconomic development” as well as “a new and more equitable international economic order.”<sup>32</sup> WHO officials and other health administrators continued to insist that family planning should be integrated with other health services, regardless of the demographic targets set by population programs. Nearly all of Omran’s considerable body of work was directly related to WHO’s battle to justify and implement this vision.

#### SCHOOLS OF PUBLIC HEALTH AND POPULATION CONTROL

By the 1960s, a network of academic centers was devoted to issues of population growth. The oldest one in the United States was the Office of Population Research at the Princeton University Population Research Center, founded in 1936. From 1945, its founding director Frank Notestein and his collaborator Kingsley Davis were largely responsible for developing the theory of the demographic transition which became the chief paradigm of population development during the 1960s, 1970s, and beyond. The theory argued that there were three stages of population development. The first was characterized by high mortality and high fertility and relative population stability. The second involved rapid population growth due to declining mortality but continued high fertility. The third stage characterized developed nations of European descent and was defined by low mortality, low fertility, and population growth in “incipient decline.” The theory originally held that fertility decline depended on a complex series of economic, cultural, and social transformations that would modernize traditional societies. But the Cold War, decolonization, and dire predictions by bodies like the United Nations Population Division of rapid global population growth cast doubt on policies that based the political stability of developing nations on economic development. Larger populations, it was thought, would use up resources necessary for development and leave many countries more vulnerable

32. Jason L. Finkle and Barbara B. Crane, “The Politics of Bucharest: Population, Development, and the New International Economic Order,” *Population Devel. Rev.* 1975, 1, 87–114; Jason L. Finkle and C. Alison McIntosh, “United Nations Population Conferences: Shaping the Policy Agenda for the Twenty-First Century,” *Stud. Family Plann.*, 2002, 33, 11–23.

to communist takeover, as had occurred in China.<sup>33</sup> Pressure to take immediate action pushed both Notestein and Davis by 1950 to advocate government programs of family planning as an urgent priority for international development.<sup>34</sup> The theory provided a general and simple framework that could accommodate many different population strategies.

By the mid-1960s a number of population centers were in existence; nearly all were directed by demographers, sociologists, or economists.<sup>35</sup> Epidemiologists and public health researchers were notably absent from this field. Within the world of population control, public health was viewed more as a problem than a solution; efforts at eradicating disease seemed only to exacerbate population pressure and food shortages in the developing world.<sup>36</sup> Nonetheless, the situation was evolving. In 1953, John E. Gordon, an epidemiologist at the Harvard School of Public Health, initiated an influential population control project in Punjab, popularly known as "the Khanna study."<sup>37</sup> At its Eighty-Seventh Annual Meeting in 1959, the American Public Health Association (APHA) endorsed research on population and the integration of population and family planning into public health programs.<sup>38</sup> In the following years, population change became in a modest way a public health issue. The APHA established a Family Planning Program in 1963.<sup>39</sup>

33. Connelly, *Fatal Misconception*, 143–44; Peter J. Donaldson, "On the Origins of the United States Government's International Population Policy," *Pop. Stud.*, 1990, 44, 385–99, especially 387.

34. Simon Szreter, "The Idea of Demographic Transition and the Study of Fertility Change: A Critical Intellectual History," *Population Devel. Rev.*, 1993, 19, 659–701; John Sharpless, "Population Science, Private Foundations, and Development Aid: The Transformation of Demographic Knowledge in the United States, 1945–1965," in *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*, ed. Cooper and Packard, (Berkeley: University of California Press, 1997) 176–200.

35. For a good overview of the major players, see the contributors to *The Population Dilemma*, ed. Philip M. Hauser (Englewood Cliffs, New Jersey: Prentice Hall, 1969).

36. Marshall C. Balfour, Roger F. Evans, Frank W. Notestein, and Irene B. Taeuber, *Public Health and Demography in the Far East* (New York: The Rockefeller Foundation, 1950); Connelly, *Fatal Misconception*.

37. John B. Wyon and John E. Gordon, *The Khanna Study: Population Problems in the Rural Punjab* (Cambridge, Massachusetts: Harvard University Press, 1971); Mahmood Mamdani, *The Myth of Population Control: Family, Caste, and Class in an Indian Village* (New York: Monthly Review, 1972).

38. Anon., "Policy Statement: The Population Problem," *Am. J. of Public Health* 1959, 49, 1703.

39. Donald Harting and Leslie Corsa, "The American Public Health Association and the Population Problem," *Am. J. Public Health*, 1969, 59, 1927–29.

A survey undertaken during the 1967–68 academic year found that thirteen North American schools of public health had faculty participating in 114 projects devoted to population dynamics and fertility control. The Ford Foundation funded forty-one projects and agencies of the U.S. government thirty-three.<sup>40</sup>

In 1962, the Harvard School of Public Health established its own Department of Demography and Human Ecology and, two years later, a Center for Population Studies. The latter was one of a number of Population Centers established in schools of public health during this decade in response to growing fears of a world population explosion. Under the direction of professor of population policy Roger Revelle, an oceanographer by training, the Harvard Center launched a “university-wide attack on population questions.”<sup>41</sup> The Johns Hopkins School of Public Health and Hygiene established a Division of Population Dynamics in 1964, which together with the Division of Maternal and Child Health formed the Department of Population and Family Health. By 1968, it had seventeen faculty members in numerous disciplines (but not one in epidemiology). Much of its funding in the mid-1960s came from the U.S. government and private foundations.<sup>42</sup> The University of Michigan’s Population Studies Center, closely associated with the Department of Sociology, was founded in 1961. It was joined in 1965 by the Center for Population Planning at the Michigan School of Public Health and by a Center for Research in Reproductive Biology at the School of Medicine. The California School of Public Health at Berkeley trained a significant number of students from abroad in family planning through programs in Health Education and Maternal and Child Health.<sup>43</sup>

The University of North Carolina at Chapel Hill (UNC) established the Carolina Population Center in 1966.<sup>44</sup> UNC had a

40. Ira W. Gabrielson, Mindel C. Sheps, Carl S. Shultz, and Leo G. Reeder, “Current Status of Population Research in Schools of Public Health,” *Am. J. Public Health*, 1970, 60, 913–18.

41. Roger Revelle, “Can Man Domesticate Himself?” *Bull. At. Sci.*, 1966, 22, 2–7.

42. Marshall C. Balfour, “Population and Family Planning Programs in US Schools of Public Health,” *Stud. Family Plann.*, 1968, 1, 12–16.

43. *Ibid.*

44. Robert R. Korstad, *Dreaming of a Time: The School of Public Health, The University of North Carolina at Chapel Hill, 1939–1989* (Chapel Hill, North Carolina: The School of Public Health, 1990); John C. Caldwell and Patricia Caldwell, *Limiting Population Growth and the Ford Foundation Contribution* (London: Frances Pinter, 1986); Carolina Population

significant advantage over schools like Harvard since there were many more opportunities for fieldwork related to family planning programs in rural North Carolina than in Massachusetts; it was thus seen as an especially appropriate training venue for students from developing countries.<sup>45</sup> Under the leadership of John C. Cassel, UNC's Department of Epidemiology fostered a singularly "anthropological" and operational approach to the epidemiology of public health services, which eventually came to include family planning. Cassel, who moved to North Carolina from South Africa in the 1950s and became the first chair of that department, was known for his influential studies in "social epidemiology," which were concerned with the health consequences of industrialization and urbanization.<sup>46</sup>

Another key figure at Chapel Hill was Ralph C. Patrick, who helped establish a Medical Anthropology Program at UNC in collaboration with Cassel's Department of Epidemiology.<sup>47</sup> The Program included a sub-specialization in population studies and several anthropologists were involved with the Population Center. In 1960 Patrick took part in an epidemiological study of polio vaccination acceptance in Dade County, Florida, which centered on cultural and social resistance to a polio vaccination program.<sup>48</sup> Omran (1969) singled out this study as an important precedent for the operational application of epidemiological methods to health delivery services.<sup>49</sup> A third figure, Berton H. Kaplan, like Cassel, studied the health effects of "cultural change" in an urbanizing community in the mountains of North Carolina. Its unique cultural and social

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Center, *A Guide to the Carolina Population Center and Its Affiliated Programs* (Chapel Hill, North Carolina: The University of North Carolina at Chapel Hill, 1975); Carolina Population Center History Project Web Site. <http://www.cpc.unc.edu/history> (accessed 31 August 2009).

45. Balfour, "Population and Family Planning Programs."

46. Michel A. Ibrahim, Berton H. Kaplan, Ralph C. Patrick, Cecil Slome, Herman A. Tyroler, and Robert N. Wilson, "The Legacy of John C. Cassel," *Am. J. Epidemiol.*, 1980, 112, 1-7, 2.

47. Peter Goethals and Berton H. Kaplan, "Medical Anthropology at the University of North Carolina: A Preliminary Note," *Proc. So. Anthro. Soc.*, 1968, 1, 55-63.

48. A. L. Johnson, C. D. Jenkins, R. Patrick, R. J. Northcutt Jr., *Epidemiology of Polio Vaccine Acceptance* (Chapel Hill, North Carolina: The School of Public Health, Department of Epidemiology, 1962).

49. Abdel R. Omran, *Epidemiological Aspects of Health and Population Dynamics: Proceedings of a Faculty Seminar in India*. (Published in *Bulletin of the Gandhigram Institute of Rural Health and Family Planning*, 1969, 4.).

orientation and its ties to the Population Center may explain the fact that the Department of Epidemiology in Chapel Hill was the first and only center in the United States designated by WHO with major responsibilities for the Special Programme of Research in which Omran played a key role (see discussion above), as well as providing consultant assistance in service research.<sup>50</sup> Omran was thus at the center of epidemiological research combining the unique resources and expertise of the CPC with those of WHO.

During the following decade, the university's population activities would receive \$34 million in funding, from agencies such as USAID and the Ford Foundation. For about a decade, the center channeled funds into various departments at the university to establish new courses, recruit faculty, and carry out population research.<sup>51</sup> In the Department of Obstetrics and Gynecology, Abdel Omran's wife, Khairia F. Omran, helped Jaroslav F. Hulka develop cheaper and safer sterilization devices with international family planning programs in mind. Together, they studied the effectiveness of an experimental spring-loaded plastic clip for laparoscopic sterilization, which became known as the "Hulka clip."<sup>52</sup> Hulka clips were first tested in North Carolina, followed by large-scale field trials in such far-flung places as Bangkok and Bombay. The North Carolina Abortion Act of 1967 (one of the first of its kind in the United States) also stimulated a broad program of population and public health research at UNC.<sup>53</sup>

The only epidemiologists involved from the start in the population studies of the CPC were Cassel, his former student Kaplan, and the newly hired Omran. Nonetheless, the Department of Epidemiology designed an academic curriculum that aimed at familiarizing epidemiologists with the biological and social basics of

50. Egon Diczfalusy, "World Health Organization Special Programme of Research, Development and Research Training in Human Reproduction, the First Fifteen Years: A Review," *Contraception*, 1986, 34, 3-119.

51. Caldwell and Caldwell, *Limiting population growth*.

52. See for example, Kharia F. Omran and Jaroslav F. Hulka, "Tubal Occlusion: A Comparative Study," *Int. J. Fertil.*, 1970, 15, 226-41; Hulka and Omran, "Comparative Tubal Occlusion: Rigid and Spring-Loaded Clips," *Fertil. Steril.*, 1972, 23, 633-39.

53. Sagar C. Jain and Steven W. Sindling, *North Carolina Abortion Law 1967: A Study in Legislative Process* (Chapel Hill, North Carolina: Carolina Population Center, 1968); Jaroslav F. Hulka, *Therapeutic Abortion: A Chapel Hill Symposium* (Chapel Hill: Carolina Population Center, 1968); William B. Walker and Jaroslav F. Hulka, "Attitudes and Practices of North Carolina Obstetricians: The Impact of the North Carolina Abortion Act of 1967," *South. Med. J.*, 1971, 64, 441-45.

human population dynamics. The Department was “particularly interested in developing techniques to evaluate the impact of family planning programs on the family, with special interest in the relationship between family size and the health of individual members of the family.”<sup>54</sup> From population epidemiology to Hulka clips to administration science, Chapel Hill had it all.<sup>55</sup> Omran’s theory of epidemiologic transition was one element of a much larger canvas that integrated theoretical, practical, and technological aspects of family planning in developing countries (Figure 2).

North Carolina was thus near the center of a relatively new public health constellation in population control which soon achieved visibility. In 1968 and 1969, Roger Revelle of Harvard’s School of Public Health chaired a Study Committee of the National Academy of Science (NAS) that held two summer study sessions at Woods Hole, Massachusetts.<sup>56</sup> An eclectic committee worked with Revelle on a report and recommendations. The committee included the usual demographers and development economists as well as several environmental scientists. But representatives of the emergent public health/population control world joined Revelle on the committee: Moye W. Freymann, formerly of the Ford Foundation, and founding director of the CPC; Walsh McDermott, professor of medicine and public health at Cornell Medical School; and Samuel M. Wishik of the International Institute for the Study of Human Reproduction in the School of Public Health at Columbia. The influential report itself made eight recommendations in support of family planning interventions; the most important ones called for greater availability and choice of birth control in developing nations, as well as ethical national policies to restrict population growth and regulate technical assistance from developed nations. This was followed by seventeen reports written for the commission. Four treated health issues, including a

54. Carolina Population Center, *A Population Program of Research, Education, and Service* (Chapel Hill: University of North Carolina, 1966).

55. R. Scott Moreland, Kong Chu, Edward Jacobson, and Thomas H. Naylor, “The Carolina Population Center Family Planning Administration Training Game,” *Manage. Sci.*, 1972, 18, B635–44.

56. National Academy of Sciences, *Rapid Population Growth: Consequences and Policy Implications. Prepared by a Study Committee of the Office of the Foreign Secretary, National Academy of Sciences, with Support of the Agency for International Development* (Baltimore: Johns Hopkins University Press, 1971).



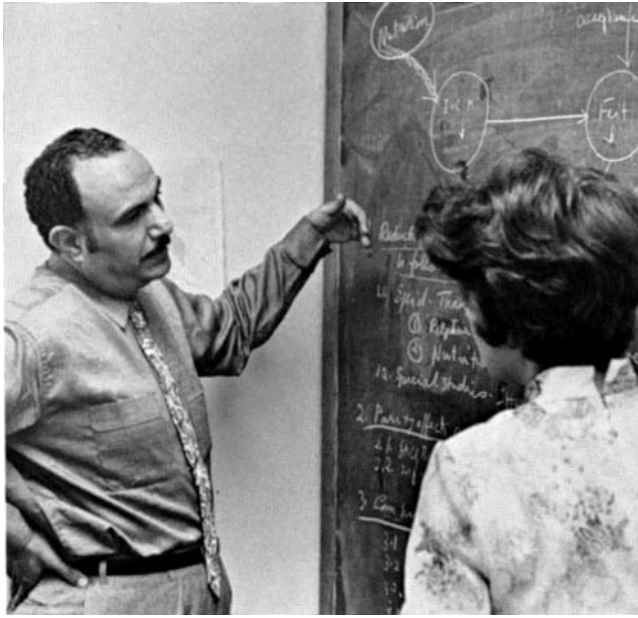


Fig. 2. Omran teaching at the University of North Carolina, Chapel Hill, in 1971. Source: Brochure on the Population Studies Program, 1971 in #40120, Series 2: Office of the Dean, Subseries 1: General Files, Box 1:5; Folder "Population Committee, 1971." Records of the Dean of the School of Public Health in the University Archives and Records Service, Wilson Library, University of North Carolina, Chapel Hill, NC.

paper on "Abortion in the Demographic Transition" by Abdel R. Omran.<sup>57</sup>

#### ISLAM AND THE ARABIC CONNECTION

Omran was a citizen of the world and worked on family planning in many regions of the globe. Late in his career he contributed extensively to fertility and health studies in the Catholic countries of Latin America for the PAHO.<sup>58</sup> But health and family planning

57. Abdel R. Omran, "Abortion and Demographic Transition," in *Rapid Population Growth*, ed. National Academy of Sciences, 479–532.

58. See for example, Abdel R. Omran, *Fertility and Health: The Latin American Experience* (Washington, DC: Pan American Health Organization, 1985); Abdel R. Omran, Joao Yunes, José Antonio Solis, and Guillermo Lopez, eds, *Reproductive Health in the Americas* (Washington, DC: Pan American Health Organization, 1992).

in Egypt and the Arab world generally were among his chief preoccupations throughout his life. He published regularly on the subject and retained an abiding interest in reconciling birth control (always in the name of health) with Islamic teaching.<sup>59</sup> He in fact cast himself as something of an expert in this sensitive area. In 1970 at a meeting in Teheran, Omran observed that most Muslim populations were “characterized by an alarming rate of natural increase due to extremely high fertility and declining mortality.”<sup>60</sup> In Morocco, at a landmark conference on Islam and family planning in 1970, Omran explained to an audience of Islamic scholars, physicians, and development agency representatives, that he was carrying out “epidemic studies” for WHO in Lebanon, Egypt, Syria, Turkey, Iran, Pakistan, and the Philippines in order to compare “groups of Muslim families from one of these countries with groups of non-Muslim families in the same country, in search of the reasons for our backwardness.”<sup>61</sup>

As a practicing Muslim born in Egypt, Omran was uniquely placed to spread the family planning gospel throughout the Islamic world. Omran never had doubts that classical Islamic teaching was not to blame for overpopulation and thought it could be used to promote family planning just it could be used to teach sanitation practices. (As early as 1955, Omran encouraged the use of Islamic verses to teach religious villagers on the Nile Delta about health and sanitation as part of a rural development project.)<sup>62</sup> In 1971 he wrote: “Pronatalism in Islam is real but is neither absolute nor representative of the comprehensive attitude of Islam toward family

59. See for example, Abdel R. Omran, “Impact of Economic Development on Health Patterns in Egypt,” *Arch. Environ. Health*, 1966, 13, 117–24; Abdel R. Omran, *Egypt: Population Problems & Prospects* (Chapel Hill, North Carolina: Carolina Population Center, 1973); Abdel R. Omran, “Egypt’s Population Problems and Prospects Reassessed (Statement, April 26, 1978),” in *Population and Development: Status and Trends of Family Planning/Population Programs in Developing Countries. Vol. 2. Hearings, April 25–27, 1978*, ed. United States Congress, House of Representatives, Select Committee on Population (Washington, DC: U.S. Government Printing Office, 1978), 514–42.

60. Abdel R. Omran, “Epidemiologic, Sociologic, and Theologic Aspects of Muslim Fertility,” in *International Workshop on Communications in Family Planning Programs (Teheran, June 6–18, 1970), Final Report*, ed. Robert R. Blake (Chapel Hill, North Carolina: The Carolina Population Center, 1971), 32–55, 32.

61. Isam R. Nazar, Hasan S. Karmi, and Mahmud Y. Zayid, eds., *Islam & Family Planning: A Faithful Translation of the Arabic Edition of the Proceedings of the International Islamic Conference Held in Rabat (Morocco), December, 1971* (Beirut: International Planned Parenthood Federation, 1974), 331.

62. Anonymous, “R<sub>x</sub> For Good Will.”

formation and planning . . . . Thus, it may be concluded that Islam has consistently advocated a planned family under a variety of circumstances.”<sup>63</sup>

Omran’s lifelong engagement with Islam culminated in one of his last major works, *Family Planning in the Legacy of Islam*, a book that was supported by UNFPA and Al Azhar University in Cairo.<sup>64</sup> In it, Omran argued that Islam and contraception were eminently compatible. Despite the book’s eccentricities, it remains an authoritative source on this controversial subject and is frequently cited by population experts and moderate scholars of Islam alike.<sup>65</sup> Conversely, for certain pro-lifers, Omran’s close ties to the population establishment taint his credibility as an objective and unbiased Muslim scholar. Steven W. Mosher, a pro-life Roman Catholic and President of the Population Research Institute, recently denounced Nigeria’s Ministry of Health for not disclosing that their consultant, Omran, was on the payroll of the Pathfinder Fund and even the Pentagon.<sup>66</sup> This charge reappears regularly on various pro-life and fundamentalist Islamic web sites.

#### THE HEALTH THEME

One of Omran’s first tasks for the WHO was to document the “health hazards” of excessive fertility. He produced a monograph on this theme in preparation for two WHO conferences in 1970.<sup>67</sup> In this work, Omran correlated large family size with such health hazards as stillbirths, infant mortality, malnutrition, incidence of infection within families, maternal health problems, and problems of child growth, development, and sometimes emotional adjustment. At the time, the inverse relationship between parity and health was mostly based on studies that had been done in the United Kingdom and the United States. Because of the absence of evidence from less

63. Omran, “Epidemiologic, Sociologic, and Theologic Aspects,” 42–43.

64. Abdel Rahim Omran, *Family Planning in the Legacy of Islam* (London: Routledge, 1992).

65. See for example, Suad Joseph, ed., *Encyclopedia of Women & Islamic Cultures, Volume III: Family, Body, Sexuality and Health* (Leiden & Boston: Brill, 2006).

66. Steven W. Mosher, *Population Control: Real Costs, Illusory Benefits* (New Brunswick: Transaction Publishers, 2008), 104; see also Elizabeth Liagin, “Money for Lies, Part II: How the First World Uses Cash to Undermine Nigerian Love of Children,” *Population Research Institute Review* 1999, 9, 5–8.

67. Abdel R. Omran, *The Health Theme in Family Planning* (Chapel Hill, North Carolina: Carolina Population Center, 1971).

developed countries, the Human Reproduction Unit of WHO set up similar studies, first in Iran, India, Lebanon, the Philippines, and Turkey, then in Columbia, Egypt, Pakistan, and Syria.

The consequence of documenting such health hazards in numerous publications was to cast family planning as a health issue; reducing the number of births and spacing them properly was a method of improving the health status of populations. Most obviously family planning could reduce perinatal and infant mortality, and protect maternal health. It enhanced family health by increasing nutritional resources and parental attention to each child, improving children's physical, mental, and emotional development, and preventing unwanted births. A smaller population improved the quality of the environment, and timing pregnancies to reduce birth among very young or older women could avert congenital disorders. Alongside legalized abortion, family planning programs could help reduce illegal abortions that constituted an "epidemic" in some countries and were unquestionably a threat to women's health.<sup>68</sup> Conversely, better health meant greater openness to family planning. It tended to "increase the effectiveness of labor and hence economic productivity."<sup>69</sup> This in turn "can lead to economic and social change which influences acceptance of the small family norm."<sup>70</sup> Most important, reducing infant and childhood mortality would "increase the willingness of parents to practice birth control."<sup>71</sup>

But the major advantage of the focus on health, Omran argued, was practical. While recognizing the need to "custom tailor" health and family planning programs for each geographic area and cultural group, Omran argued that "the rationale of the health theme . . . is simply this: although there are as many definitions of good health as there are cultures in the world, good health is almost universally prized. Therefore, showing that family planning is essential to the

68. See for example, Abdel R. Omran, "Epidemiological and Sociological Aspects of Abortion," in *Induced Abortion: A Hazard to Public Health? Proceedings of the First Conference of the IPPF Middle East and North Africa Region, February, 1971, Beirut, Lebanon*, ed. Isam R. Nazer (Beirut: IPPF, 1972), 20–77; Abdel R. Omran, "Legalizing Abortion: Impact on Natality Transition in Various Social & Development Settings," in *Liberalization of Abortion Laws: Implications*, ed. Abdel R. Orman (Chapel Hill, NC: Carolina Population Center, 1976), 18–45.

69. Omran, "Epidemiologic Transition," 530–31.

70. Omran, *Health Theme*, 139.

71. Abdel R. Omran, "Population Epidemiology: Emerging Field of Inquiry for Population and Health Students," *Am. J. Public Health* 1974, 64, 674–79, 677.

achievement of good individual, family, and national health can be a strong support for family planning programs.” Not only did it provide the positive motivation for family planning in an immediate, personal way, as opposed to abstract motivations like “curtailing fertility for political or economic reasons,” it bypassed “many political objections” to birth control. “In situations where two religious, social, cultural, or national groups are in conflict, any attempt to institute family planning is often regarded as an attempt by one group to weaken or wipe out the other. Once it is recognized that family planning is in fact essential to good health, and thus to individual and group strength, this objection can be overcome.”<sup>72</sup>

For Omran, it was critical to properly educate health professionals, frequently accused of causing the recent population explosion due to their successes in “death control” without equal emphasis on “birth control.” He insisted that “providing persons with the knowledge and techniques necessary to space, time and control the number of their children; giving attention to other facets of family planning, including the conquest of infertility; and genetic counseling are basic medical responsibilities.”<sup>73</sup> This was not strictly speaking population control but rather “an integral part of medicine’s responsibility to improve the quality of human life and to guard the health of people.”<sup>74</sup>

#### THE EPIDEMIOLOGIC TRANSITION

The theory of the epidemiologic transition was the flip side of Omran’s “health theme.” As we saw, it proposed a three-stage theory of epidemiologic transition. He further postulated three models of development: a “classic” model in which the transition from the second to the third stage occurred gradually, an “accelerated” model, and finally a “delayed” model characteristic of most developing countries. Omran repeatedly declared that this theory provided a framework for policy analysis. And this framework justified organized programs of family planning within a health services context.

72. Omran, *Health Theme*, 144.

73. Abdel R. Omran, “The Health Rationale for Family Planning,” in *Population Change: A Strategy for Physicians. Proceedings of the International Conference on the Physician and Population Change, Stockholm, Sweden*, ed. Lucille S. Bloch (Washington, DC: Association of American Medical Colleges, 1975), 117–55, 117.

74. *Ibid.*, 147.

Omran published his paper in the *Milbank Memorial Fund Quarterly*, a journal that had a long and distinguished history of presenting work on population questions. Nonetheless, this journal does not appear to have been his first choice. He wrote John Cassell in 1970 that he had submitted three papers on “The Epidemiologic Transition” to the *American Journal of Epidemiology*, a publication that, it turned out, never published any of his work.<sup>75</sup> The *Milbank* paper was a revised version of a previously published presentation of the epidemiologic transition theory. In 1969, Omran traveled to India as a Ford Foundation consultant to deliver twelve two-hour lectures as part of a continuing education program for faculty and field staff of the Gandhigram Institute of Rural Health and Family Planning in India. These lectures were then published in the Institute’s Bulletin.<sup>76</sup> Omran’s lectures began with the “Evolution of Epidemiology Thinking from Epidemics to Population Dynamics” (Session 1) and ended with “The Health Theme in Family Planning” (Session 11). Along the way, “The Epidemiologic Transition” (Sessions 8–10) fell somewhere along the spectrum between population dynamics and population control and constituted the first published version of his theory. The course content was based on Omran’s graduate course in “population epidemiology” at UNC’s School of Public Health.<sup>77</sup>

The main thing that separates Omran’s epidemiological transition from the theory of the demographic transition is the addition of a new element—a shift in disease patterns. But this shift was an endpoint; it would be part of the final state of modernization that might occur eventually in the developing world but it was irrelevant to his work. The only time Omran dealt with it, superficially, were some articles he published in the mid-1970s on the epidemiologic transition in the United States.<sup>78</sup> Occasionally he might cite the rise

75. Letter to Dr. John Cassel from Abdel R. Omran, 21 July 1970. “WHO Conference on Human Reproduction in Teheran and Baghdad.” #40120, Records of the Dean of the School of Public Health, Subgroup 5: Epidemiology, Box 5:1, Health Affairs: School of Public Health, UNC Archives, Archives of the University of North Carolina at Chapel Hill, Chapel Hill, NC.

76. Omran, *Epidemiological Aspects of Health and Population Dynamics*.

77. Omran, “Population Epidemiology.”

78. Abdel R. Omran, “The Epidemiologic Transition in North Carolina during the Last 50 to 90 Years: I. The Mortality Transition,” *N. C. Med. J.*, 1975, 36, 23–28; Abdel R. Omran, “The Epidemiologic Transition in North Carolina during the Last 50 to 90

in chronic disease rates to indicate that the transition might be progressing in some countries, but usually his conclusions were inconclusive.<sup>79</sup> Nor did he ever use chronic disease rates as systematic measure of the extent to which a nation was moving through the transition. The only measure that mattered for him was the birth rate. And even his American studies sometimes concluded with statements like the following: “it would be erroneous to apply the American experience to the developing countries, because they belong to different models and stages of the transition . . . . Thus, it seems unwise to forsake programmed efforts, such as family planning, for economic strategies based on the experience of Western countries.”<sup>80</sup>

If Omran essentially ignored chronic disease in most of his work why did he bother including it in his theory? There are several possible answers. First, Omran was a *bricoleur* who liked connecting everything he knew about a subject. The way his mind worked is vividly illustrated by the following table included in the 1969 Gandhigram piece on the epidemiologic transition (see Table 1). In the later *Milbank* paper, this relatively concise table focusing on sources was replaced by a more extensive and unwieldy descriptive table that spelled out all the various elements that went into his concept of stages. (This latter table was *not* reprinted in the *Milbank Quarterly* in 2005).

At the very top is demographic transition theory, whose basic elements—rates of mortality, birth, economic development, as well as beliefs—were central to his thinking about family planning. A piece written in the late 1960s but not published until 1971 on “Abortion in the Demographic Transition” was not notably different from any of his other articles in the way it used population transition to advocate for contraceptive programs and legalized abortion.<sup>81</sup> That he spoke of a “demographic” rather than “epidemiologic” transition in this paper was irrelevant to the argument.

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Years: II. Changing Patterns of Disease and Causes of Death,” *N. C. Med. J.*, 1975, 36, 83–88.

79. See for instance Omran, “Population Epidemiology.”

80. Abdel R. Omran, “A Century of Epidemiologic Transition in the United States,” *Prev. Med.*, 1977, 6, 30–51, 50.

81. Omran 1971, “Abortion and Demographic Transition.”

TABLE 1

Macro-Transitions in the West

	<i>Pre-Industrial</i>	<i>Early Western</i>	<i>Modern Western</i>
Demographic transition (Thomson-Notestein)	High growth potential	Transitional growth	Incipient decline
Societal transition (D. Riesman [sic])	Tradition-directed society	Inner-directed society	Other-directed society
Economic transitions (C. Clark)	Primary economic sphere (agrarian)	Secondary economic sphere (early industrialized)	Tertiary economic sphere (industrialized)
Energy transition	Primitive, manual agriculture	Early energy transition	Developed energy transition
↓ ↑ Epidemiologic transition (A.R. Omran)	↓ ↑ Age of Pestilence and Famine	↓ ↑ Age of Receding Pandemics	↓ ↑ Age of Degenerative and Man-made Disease

Source: Abdel. R. Omran, "Epidemiological Aspects of Health and Population Dynamics: Proceedings of a Faculty Seminar in India." (Published in *Bulletin of the Gandhigram Institute of Rural Health and Family Planning*, 1969, 4:1, 22.).

Theories of social evolution also found a place in his schema in the form of David Riesman's *The Lonely Crowd*. (The author's name is misspelled in the table.) Hardly cutting edge sociology by 1969, the book divided social types into three historical stages based on Notestein's model of the demographic transition.<sup>82</sup> The fact that Omran said so little about Notestein and spent almost two pages discussing Riesman suggests that he got most of his information from Riesman's bestselling book. In the later *Milbank* version of

82. David Riesman, Nathan Glazer, and Reuel Denney, *The Lonely Crowd: A Study of Changing American Character* (New Haven, Connecticut: Yale University, 1950).



the theory, Omran dropped his discussion of Riesman's ideas completely—not surprising since a younger CPC colleague published a book review in the same issue of the journal vigorously criticizing a study of intra-uterine contraception in Singapore for among other things using Riesman's outdated and ethnocentric typology as an analytical frame.<sup>83</sup> His inclusion of Colin Clark's "economic transition" in the table also seems to have come straight out of Riesman. The "energy transition" is not attributed but likely refers to the work of the evolutionary anthropologist, Leslie A. White. In the *Milbank* paper, Omran adds a pinch of somewhat more current modernization theory—Rostow's *Stages of Economic Growth* (1960), which is cited with a passing nod to economic "take-off." Given this synthetic turn of mind, it is hardly surprising that Omran included reference to the growing importance of chronic diseases that had become epidemiological orthodoxy in the United States by the late 1960s.<sup>84</sup>

An even more compelling reason for this choice, we suspect, was the need to provide an alternative to demographic transition theory, which he associated with economic determinism. Despite his reliance on its main concepts, Omran explicitly rejected the demographic transition as a theoretical framework. In his view, it ignored too many variables and too many historical developments that did not fit the theory (e.g., the postwar baby boom), as well as assuming a single path of population development based on socio-economic progress; it thus "fails to account for variations in the transition, such as the quite different type of transition that is now occurring in developing countries.... The theory of epidemiologic transition was formulated in an attempt to provide a comprehensive approach to the dynamics of the mortality-fertility transition."<sup>85</sup> In his view, the recent mortality decline in the developing world depended not on economic development but on

83. Charles B. Arnold, [Book Review of David Wolfers, *Post-partum Intra-uterine Contraception in Singapore* (1970)], *Milbank Mem. Fund. Q.*, 1971, 49, 539–45.

84. Mervyn Susser, "Epidemiology in the United States after World War II: The Evolution of Technique," *Epidemiol. Rev.*, 1985, 7, 147–77; Daniel M. Fox, *Power and Illness: The Failure and Future of American Health Policy* (Berkeley: University of California Press, 1993); Gerald N. Grob, *The Deadly Truth: A History of Disease in America* (Cambridge, Massachusetts: Harvard University Press, 2002).

85. Abdel R. Omran, "The World Population Problem," in *Community Medicine in Developing Countries*, ed. Abdel R. Omran (New York: Springer, 1974), 107–8.

national and international programs of health service provision and environmental control.

As a result of his training with individuals deeply concerned with service delivery, Omran consistently emphasized the importance of motivation rather than economic determinants in explaining why birth control was embraced enthusiastically in some places and rejected in others.<sup>86</sup> He further believed that motivation could be promoted through health programs, directly by explaining the health benefits of family planning and indirectly by decreasing infant mortality and thus reducing the need for large families. Consequently, he argued that suitably motivated countries could utilize broad-based family planning programs even in the absence of strong economic development—although he always recognized that economic development enhanced results and its absence limited possible achievements.

At the famous UN World Population Conference held in Bucharest in 1974, where the opposition of many developing nations to population control crystallized, the WHO presented two papers in its own collective name (quite possibly written by Omran himself) making extensive use of this logic of epidemiologic transition. One argued that rather than exacerbating overpopulation, improved maternal health and child survival were prerequisites for fertility decline and economic development.<sup>87</sup> And another justified the insistence that family planning be integrated within basic health services by insisting on the difference between this and other mass campaigns. “An attack against an infectious disease may involve changing one or more components of man’s environment, or may require only a single injection. Family planning involves the entire socio-cultural and psychological complex of the conjugal relationship itself, with couples being required to take repeated action of a highly personal nature.”<sup>88</sup>

86. Omran, “Epidemiologic Transition,” 535.

87. World Health Organization, “Health Trends and Prospects in Relation to Population and Development,” in *The Population Debate: Dimensions and Perspectives: Papers of the World Population Conference, Bucharest, 1974*, Vol. 1 (New York: United Nations, 1975), 573–97.

88. World Health Organization 1975, “Health and Family Planning,” in *The Population Debate: Dimensions and Perspectives: Papers of the World Population Conference, Bucharest, 1974*, Vol. 2 (New York: United Nations, 1975), 471.

For Omran, the key difference between epidemiologic transition and demographic transition theories was that the former unlike the latter allowed for *multiple* pathways to a low-mortality/low-fertility population regime. This was less clear in his first formulations where the main alternative to the classical model was the delayed transition of most of the developing world, which looked pretty much alike from one country to the next. The only real alternative was provided by Japan, which had achieved an *accelerated* transition mainly by legalizing abortion in 1948. The delayed model was the result of organized efforts to lower mortality “with the inevitable result of explosive population growth.” Consequently, the epidemiologic transition model suggested that “fertility decline also has to be ‘manipulated’ by deliberate population policy, including family planning programs, which are often national and which usually receive international support. This model contrasts with the classical transition model in which fertility control did not necessitate the implementation of national programs.”<sup>89</sup> Omran stated in his *Milbank* paper that there were “submodels, particularly with regard to the varying responses of fertility and socioeconomic conditions to national development programs.”<sup>90</sup> But he never seriously explored or analyzed these sub-models or their practical implications. Rather, he repeatedly invoked the epidemiologic transition and multiple pathways to argue that classical Western transition model was “not automatically transferable to the less developed countries of today as is sometimes implied in the Demographic Transition theory.”<sup>91</sup>

If during the early 1970s, the most optimistic scenario of delayed nations was to emulate Japan in achieving an accelerated transition, some countries had by the early 1980s achieved sufficient success to modify the parameters of Omran’s thinking. These cases were from Omran’s point of view a vindication of the international family planning approach which he underlined by revising epidemiologic transition theory. In what he called a “preliminary update,” he added to the three existing transition models a fourth one in which rapid

89. Abdel R. Omran, “A Preliminary Application of the Theory of Epidemiologic Transition to Egypt,” *Egyptian Population and Family Planning Review*, 1972, 6, 95–118, 102–3.

90. Omran, “Epidemiologic Transition,” 536.

91. Abdel R. Omran, “The Epidemiologic Transition Theory. A Preliminary Update,” *J. Trop. Pediatr.*, 1983, 29, 305–16, 313.

mortality decline had in fact been followed by fertility decline. “The transitional variant of the delayed model describes the transition in a number of developing countries such as Taiwan, Korea, Singapore, Hong Kong, Sri Lanka, Mauritius, Jamaica, probably China, and others . . . . A few decades after the mortality decline, fertility started to decline as well in response to efficient, organized family planning efforts supplemented by social development.”<sup>92</sup>

There were of course disappointments, not least in Egypt his country of origin where family planning had stalled by 1980. This was caused in Omran’s view by two recent developments: the flaring up of a religious debate about contraception among Islamic scholars and the continuing dispute about the relative merits of development versus family planning. The first required a reopening of the religious debate; the second had to be “settled or dismissed.”<sup>93</sup> A few years later he expressed pessimism about prospects of success in the Arab world. “The socio-cultural milieu of such an overwhelmingly agrarian region with a predominantly tribal structure is not yet conducive to the endorsement of aggressive population policies. Children are still regarded as assets rather than as liabilities and it is still desirable for women to be highly fertile.”<sup>94</sup>

Omran’s identification of demographic transition with economic determinism is curious. The reality during this period was that all sides in development debates invoked demographic transition theory because the theory did not dictate what the most effective intervention should be. In an illuminating discussion, Michael Teitelbaum wrote in 1975 that the demographic transition theory could accommodate three policy options:

Those arguing that development will “take care of” population believe that development is sufficient (and also necessary) to bring about adequately prompt fertility reductions at an acceptable tempo. Those arguing in favor of voluntary population policies and programs—as additions to, not substitutes for, maximal efforts in the

92. *Ibid.*, 315–16.

93. Abdel R. Omran, *Reassessment of the Prospects for Fertility Decline in Egypt: Is Development a Prerequisite?* (Washington, DC: Bureau for Near East, Agency for International Development, 1980), 43.

94. Abdel R. Omran, *Population Problems and Prospects in the Arab World* (New York: United Nations Fund for Population Activities, 1984), 39.

development sphere—emphasize the importance of development but doubt its sufficiency and timeliness for many countries, and hence call for direct efforts to enhance and accelerate its demographic impacts. Those urging coercive population policies accept the significance of development, approve of policies encouraging voluntary restraint, but hold that both of these are neither sufficient nor adequately rapid to meet the pressing need. All agree with the general proposition of transition theory that high levels of social and economic development will eventually have important downward effects upon fertility.<sup>95</sup>

It is of course possible that Omran, who does not seem to have been particularly well versed in the development literature, was reflecting popular understanding of the theory. But it is even more likely that Omran was responding less to the purported economic determinism of demographic transition theory than to the fact it had nothing good to say about health services (or the likely response of targeted populations to population control programs). An “epidemiologic” transition distinguished primarily by shifting disease types (however perfunctory the discussion of these might be) provided a means of medicalizing the transition and international development work more generally.<sup>96</sup> If population control was to be a medical activity carried out in health service institutions rather than a matter of economic development or mass IUD insertion or sterilization by mobile teams of technicians, it required a science that could rival demography and a theory that could replace demographic transition. Furthermore, Omran did not just need to make his population epidemiology relevant to policy makers; he also needed to establish it as a legitimate sub-discipline of epidemiology, which was increasingly focused on chronic diseases.

Omran’s interest in extending the scope of epidemiology was not new and reflected long-standing tendencies in the field. Omran’s CPC colleague, the anthropologist Steven Polgar, co-authored an important early paper seeking to work out an epidemiological approach to using clinical and socio-economic indications for

95. Michael S. Teitelbaum, “Relevance of Demographic Transition Theory for Developing Countries,” *Science*, 1975, 188, 420–25, 424.

96. On medicalization of overpopulation, see Randall M. Packard, “Visions of Postwar Health and Development,” 108.

fertility control.<sup>97</sup> (He later attempted to carve out an academic niche for what he called “population anthropology.”)<sup>98</sup> Alexander Kessler and Susi Kessler presented WHO’s epidemiological approach at an early conference on the “uses of epidemiology in planning health services.”<sup>99</sup> In their view, the health consequences of risky pregnancies and their prevention was fundamentally a “problem requiring epidemiological inquiry.” The Kesslers argued that epidemiological studies could tease apart the tangled web of correlated causes and effects that were associated with cultural variations in human reproductive behavior and family planning practices and at the same time evaluate programs. They could also make use of years of experience in program development and thus avoid some of the costly mistakes and failures of programs conceived predominantly by demographers.<sup>100</sup>

Omran likewise made it absolutely clear in the opening paragraph of his *Milbank* paper that one of the goals of epidemiologic transition theory was to end the monopoly of demography over population dynamics. Epidemiology, he argued, has much to offer; “many epidemiologic techniques that have heretofore been limited to the examination of health and disease patterns can be profitably applied as well to the exploration of other mass phenomena, such as fertility control.”<sup>101</sup> A year later he defined epidemiology as “the discipline concerned with disease and health, and their determinants in population groups . . . . By definition, therefore, population change (in size, composition, and distribution) and the dynamics of such a change become the concern of epidemiologists.”<sup>102</sup>

97. Frederick S. Jaffe and Steven Polgar, “Epidemiological Indications for Fertility Control: A Preliminary Formulation,” *J. Christian Med. Assoc. India* [Family Planning Project Suppl.], 1967, 12–20 [reprinted in Steven Polgar and Alexander Kessler, *An Introduction to Family Planning in the Context of Health Services* (Geneva: World Health Organization, 1968)].

98. Steven Polgar, “Population History and Population Policies from an Anthropological Perspective,” *Curr. Anthropol.*, 1972, 13, 203–11.

99. Alexander Kessler and Susi Kessler, “Application of Epidemiological Methodology to Family Planning Care in Health Services,” in *Uses of Epidemiology in Planning Health Services. Proceedings of the Sixth International Scientific Meeting, August 29–September 3, 1971, Primosten, Yugoslavia*, ed. A. Michael Davies (Belgrade: Savremena Administracija, 1973), 733–39.

100. *Ibid.*, 736–37.

101. Omran, “Epidemiologic Transition,” 509–10.

102. Adbel R. Omran, “An Appraisal of Population Theories with an Introduction to the Theory of Epidemiologic Transition,” *Egyptian Pop. Family Planning Rev.*, 1972, 6, 75–93, 86.

The problem here was not just to convince demographers or policy makers to make room for epidemiologists in the family planning arena. It was equally necessary to convince the public health establishment that family planning was a legitimate epidemiological enterprise. The opening lecture of his Gandhigram course was an attempt to reach local public health officers with a richly argued defense of epidemiology in population policy. Here, Omran admitted that the role of epidemiology in family planning was hardly self-evident. He told students, “there is a great wonder as to why should epidemiology plunge into such a population dynamics and family planning.”<sup>103</sup> As well, he applied in 1972 to the NIH’s National Institute of Child Health and Development for a five-year training grant to expand UNC’s “research training possibilities in population dynamics and family planning by including research training in epidemiological approaches to this field.”<sup>104</sup> (He did not get this grant.) He also confronted the public health community directly with an article in the *American Journal of Public Health* describing and defending “population epidemiology.”<sup>105</sup> Each of these appealed to a different audience but the fundamental arguments were similar in each. Omran’s arguments can be summarized as follows:

(1) Epidemiology was an expanding field. “The perspectives and principles of epidemiology are being fruitfully applied far beyond the study of outbreaks of acute communicable diseases. Their applications have extended to studies of the determinants and consequences of chronic diseases and accidents, to studies of growth and development, prematurity and abortion, and now also to studies of health-relevant behavior and the working of health service systems.”<sup>106</sup>

(2) High birth rates can themselves be classified as an “epidemic.” “When population growth reaches epidemic proportion, you start to think, Can you use the same methods and techniques, measures and indices in the study of population dynamics?” Omran believed that the answer was a resounding “yes” because epidemiology was concerned with mass phenomena comprised of multiple

103. Omran, *Epidemiological Aspects of Health and Population Dynamics*, vol. 2, 1.

104. Training Grant Application, 1972. #40120, Records of the Dean of the School of Public Health, Subgroup 5: Epidemiology, Box 5:1; “Contracts and Grants, 1955–80,” UNC Archives.

105. Omran, “Population Epidemiology.”

106. Training Grant Application, 1972.

networks of causation among many variables. It had developed a variety of techniques “that proved very helpful in disease problems [and] should be as helpful in population dynamics and family planning program research.”<sup>107</sup>

(3) High birth rates and close spacing of children produce serious health problems for mothers and children that could only be studied using epidemiology. Epidemiologists had also gained considerable expertise in what Omran called the “Epidemiology of Programme Acceptance.” The introduction of health programs like vaccination, insect eradication, sanitary measures, and health education gave epidemiology a great deal of experience in studying the factors, “whether psychological, social, economic, or biological, that would help or impede the acceptance of a programme.”<sup>108</sup>

(4) Epidemiology had taken on the practical task of organizing and evaluating health services and programs. “It can in similar fashion be used in evaluating the working of family planning programmes.”<sup>109</sup> An added function of epidemiology was its use as a necessary tool for the controlled clinical trials of contraceptive methods central to family planning.

(5) It is at this point the significance of the epidemiologic transition theory assumes its full significance. “Efforts to broaden the traditional concepts of the demographic transition through epidemiological analysis have led to the development of the theory of epidemiologic transition in an attempt to provide insights into population phenomena so far inadequately explained. It is hoped that the theory of epidemiologic transition will enhance the accuracy of population projections and foster the development of adequate population policies.”<sup>110</sup>

Overall, Omran’s conclusion was clear:

Population epidemiology is a new specialty which can bring to the study of one of the great problems facing mankind special descriptive, analytical, and integrative capabilities. Basic training in population epidemiology is to be recommended to those who plan to work in the field of population and family planning. Specialists in the field of

107. Omran, *Epidemiological Aspects of Health and Population Dynamics*, vol. 2, 11.

108. *Ibid.*, 12.

109. *Ibid.*

110. Omran, “Population Epidemiology,” 676.



population epidemiology, working in concert with other social and health scientists, can make important contributions to the understanding and solution of problems associated with population change.<sup>111</sup>

In evaluating the effects of Omran's work we get mixed results. Within the arena of international health planning, he was an influential figure who expressed, documented, and quite likely helped formulate WHO's position on family planning in his voluminous writings. The idea that family planning was a health issue in fact gained credence and became a key aspect of American population policy in the 1990s.<sup>112</sup> In the sphere of academic epidemiology, results were less positive. "Population epidemiology" as a discipline did not take off during the next decades. Nor was Omran's reputation high either within his discipline or American public health. We saw that his attempt to publish in the *American Journal of Epidemiology* was not successful. Web of Science lists only three articles that have cited Omran's 1974 plea for population epidemiology in the *American Journal of Public Health*. Nor does it seem as if the NIH was impressed enough with Omran's program of population epidemiology to give him the training grant that he requested in 1972.<sup>113</sup> In 1978 Omran testified before the Population Select Committee of the United States House of Representatives and argued that the NIH should fund *non-biomedical* fertility studies in Egypt under Public Law 480 and used the epidemiologic transition model as the centerpiece of his argument. He was informed that the NIH simply did not provide such bilateral assistance.<sup>114</sup>

But perhaps the most significant evidence of Omran's failure to establish population epidemiology as an important subfield of epidemiology is the fact that among the many citations of the Epidemiologic Transition article, one finds relatively few in epidemiological and public health journals. Of 570 citations, thirty-six were in epidemiology journals with only three of these in papers published before 1990; forty-one citations were in journals of public health with only one of these published before 1990. This is not particularly surprising. Omran, an MD with a degree in public health had little in

111. *Ibid.*, 679.

112. John Sharpless, "World Population Growth, Family Planning, and American Foreign Policy," *J. Policy Hist.*, 1995, 7, 72-102.

113. NIH, Electronic Data Base. On this grant see above.

114. Omran, "Egypt's Population Problems and Prospects Reassessed," 126.

common with academic epidemiologists who were applying complex statistical techniques to specific diseases rather than evaluating the effects of family planning programs. Well into the 1990s many epidemiologists remained unfamiliar with Omran's "epidemiologic transition." An editorial by J. P. Mackenbach in one epidemiological journal said of the theory in 1994: "While it is also well known to many public health professionals . . . it is surprisingly less familiar to epidemiologists—as is shown by its absence from most epidemiology textbooks and from the International Epidemiological Association's *Dictionary of Epidemiology*."<sup>115</sup>

#### EPILOGUE

If the theory of the epidemiologic transition was primarily about family planning, we are left with the question of why it is now considered a theory about the rise of chronic disease. One explanation is that since it is the main innovation that Omran brought to demographic transition theory, chronic disease is what most people remember. Another is that much of his work on population control was published in very specialized and technical books, journals, and conference proceedings that have not come to the attention of many of those most interested in the theory. This is not incompatible with a further possibility related to the chronology of the citation patterns. To put it another way, significant interest in the epidemiologic transition theory as measured by citations emerged *after* interest in family planning had abated and new interests and concerns had emerged.

Using citation data from the Web of Science, which is incomplete but constitutes a reasonably good sample of works citing Omran's transition paper and those citing another classic of historical demography, McKeown's *The Rise of Populations* yields the following graphic comparison (Figure 3). Numbers of citations of the two

115. J. P. Mackenbach, "The Epidemiologic Transition Theory," *J. Epidemiol. Community Health*, 1994, 48, 329–31, 329; John M. Last, *A Dictionary of Epidemiology* (New York: Oxford University Press, 1988), did however have a two-line entry on the demographic transition. In contrast to his neglect by epidemiologists, Omran is included in William Petersen and Renee Petersen, *Dictionary of Demography. Biographies* (Westport: Greenwood Press, 1985) and himself wrote the entry on his theory for the first edition of the *Encyclopedia of Population*. See A. R. Omran, "Epidemiologic Transition: Theory," in *International Encyclopedia of Population*, ed. John A. Ross (New York: Free Press), 172–75. Mackenbach's article did have some impact. The next edition of the *Dictionary of Epidemiology* (1995) included an entry on the theory that concluded with Mackenbach's criticisms.

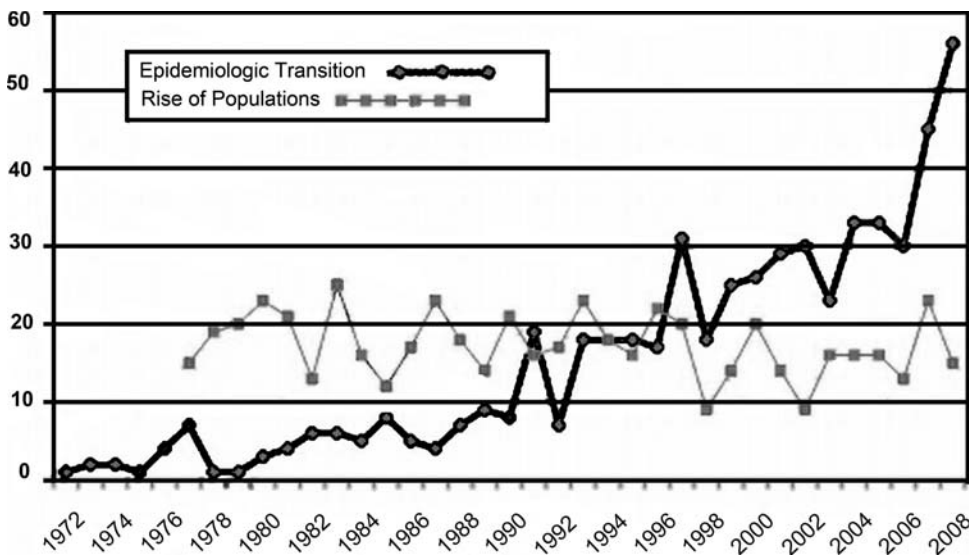


Fig. 3. Number of Citations annually (1972–2008) of Omran, “Epidemiologic Transition” and McKeown, *Rise of Populations*, in Web of Science.

works are far less interesting than the pattern of their appearance. McKeown's influential book stimulated immediate interest from scholars. Over the years this interest declined slightly but remained steady. In contrast, there was during the 1970s and 1980s relatively little interest in Omran's paper outside of a small group of scholars interested in historical demography, and especially those working on population health consequences of modernization among the Navajo and Papago of Arizona.<sup>116</sup> But during the late 1980s and especially the 1990s this paper became more salient to wider groups of scholars and the process has continued into the twenty-first century.<sup>117</sup> Furthermore, citations of the paper represent only the tip of an iceberg. By the 1990s, the "epidemiologic(al) transition" had achieved a life of its own as a label and cliché quite independent of Omran's article. A workshop sponsored by the National Research Council that resulted in a publication called *The Epidemiological Transition* does not mention Omran at all in the introduction and Omran is cited by only one of ten contributors.<sup>118</sup> A full explanation of the growing attention to the *Milbank* paper and to the term which it coined is beyond the scope of this paper. But a quick survey of the citation literature suggests the following.

Omran's theory had a very limited audience during the 1970s and much of the 1980s because, we would argue, it was largely irrelevant to debates about population. One did not need to invoke multiple pathways to modernization to argue for active family planning. It was also irrelevant to growing discussion of the problem of chronic disease because it said little beyond what most people already believed: chronic diseases had become characteristic of modern societies. Nor, unlike the McKeown thesis, did it provoke controversy. The theory became interesting to scholars only when it came to be seen as problematical. Thinking about it became a way of coming to

116. See, for example, David W. Broudy and Philip A. May, "Demographic and Epidemiologic Transition among the Navajo Indians," *Soc. Biol.*, 1983, 30, 1-16; Robert A. Hackenberg and Mary M. Gallagher, "The Costs of Cultural Change: Accidental Injury and Modernization among the Papago Indians," *Hum. Organ.*, 1972, 31, 211-226; Stephen J. Kunitz, "Factors Influencing Recent Navajo and Hopi Population Changes," *Hum. Organ.*, 1974, 33, 7-16.

117. Heather Wachtel, "The Epidemiologic Transition: Demography, Development and the Displacement of Infectious Disease" (Honors BA thesis, Harvard University, 2003), recognizes this trend but interprets it rather differently than we do.

118. James N. Gribble and Samuel H. Preston, *The Epidemiological Transition: Policy and Planning Implications for Developing Countries by Committee on Population, National Research Council* (Washington, DC: National Academies Press, 1993).

TABLE 2

Number of Articles for Certain Search Terms during Specified Years in  
Pub Med and Web of Science

Year	1987	1997	2007
“International health” (Pub Med) <sup>a</sup>	529	2150	5738
“International health” (Web Sc.) <sup>b</sup>	42	791	2688
“Health policy” (Web Sc.) <sup>b</sup>	115	799	3207

<sup>a</sup>Title and abstract term.

<sup>b</sup>General search term.

terms with a number of new developments and with strategies for dealing with them. For some, it was an easy way to pigeon-hole certain issues (say rising cardiovascular disease rates in Southeast Asia) within a broad evolutionary framework and demand policy action. Critics seeking new models or conceptual schemes found in Omran a convenient starting point, target, or straw man to highlight and valorize their own conceptual innovations. Finally, one must take account of the exponential growth of scholarship on both health policy and international health from the mid-1980s as we can see from numbers of articles found for specific years using relevant search terms in Pub Med and Web of Science (see Table 2). With so many more authors writing about these subjects, it was inevitable that growing numbers stepped back and engaged in some way with theoretical models of population-disease evolution. In so doing, they found few alternatives to Omran’s comprehensive theory that was broad and eclectic enough to accommodate a variety of positions on many subjects.

The aging of the American population has been a concern since the 1950s and was frequently entangled with discussion of the growing role of chronic diseases. But for much of that period, the main problem was that more people were living into middle and old age. According to Kenneth Manton, it was generally thought that a natural limit to the extension of life had been reached, partly due to the hazards of modern industrial societies.<sup>119</sup> All this changed around 1982–83, according to Manton, when it was recognized that increased cohort size due to the baby boom and improvements in life expectancy had major implications for the economic viability of

119. Kenneth G. Manton, “The Dynamics of Population Aging: Demography and Policy Analysis,” *Milbank Q.*, 1991, 69, 309–38.

Social Security and Medicare. This forced some theorists to rethink the idea of a simple epidemiologic transition. Fifteen years after Omran's paper appeared bio-gerontologists S. Jay Olshansky and A. Brian Ault proposed a fourth stage of the epidemiologic transition, which they called the "age of delayed degenerative diseases."<sup>120</sup> The United States had apparently just entered the fourth stage of extended life span, a development that was expected to profoundly influence health care services for the elderly.<sup>121</sup> This extension of life-span thus became identified with a new understanding of the epidemiologic transition and has spawned its own empirical literature.<sup>122</sup>

Also noteworthy in this respect was the global HIV/AIDS pandemic and the resurgence of other infectious diseases like tuberculosis and malaria thought to have been brought under control. This raised the question of whether one could really talk about a simple third stage defined by chronic diseases or whether something more complex was occurring.<sup>123</sup> In the mid-1980s, Richard G. Rogers and Robert Hackenberg came up with their own fourth stage of epidemiologic transition for the United States, which they called the "hyberistic stage."<sup>124</sup> For them, AIDS in the United States exemplified this new stage of deadly lifestyles and (sexual) behaviors. Somewhat later, the tireless Olshansky and his colleagues took account of these developments by adding a fifth stage—that of emerging infectious diseases—to their version of the transition.<sup>125</sup> An elderly Omran got into the spirit of things with his own innovations; he largely accepted Olshansky et al.'s fourth state of extended lifespan due to declining cardiovascular mortality and added a fifth "futuristic" stage, "the age of aspired quality of life, with paradoxical longevity

120. S. Jay Olshansky and A. Brian Ault, "The Fourth Stage of the Epidemiologic Transition: The Age of Delayed Degenerative Diseases," *Milbank Q.*, 1986, 64, 355–91.

121. *Ibid.* This paper was originally presented at a 1985 conference on the ethics and economics of rationing health care for the elderly. See Timothy M. Smeeding, ed., *Should Medical Care Be Rationed by Age?* (Totowa, NJ: Rowman & Littlefield, 1987), 11–43.

122. See for example, Sulaiman M. Bah, "Quantitative Approaches to Detect the Fourth Stage of the Epidemiologic Transition," *Soc. Biol.*, 1995, 42, 143–48.

123. See for example, Daniel S. Gaylin and Jennifer Kates, "Refocusing the Lens: Epidemiologic Transition Theory, Mortality Differentials, and the AIDS Pandemic," *Soc. Sci. Med.*, 1997, 44, 609–21.

124. Richard G. Rogers and Robert Hackenberg, "Extending Epidemiologic Transition Theory: A New Stage," *Soc. Biol.*, 1987, 34, 234–43.

125. S. Jay Olshansky, Bruce A. Carnes, Richard G. Rogers, and Len Smith, "Emerging Infectious Diseases: The Fifth Stage of the Epidemiologic Transition?" *World Health Stat. Q.*, 1998, 51, 207–17.

and (futuristic stage) persistent inequities.”<sup>126</sup> He now presented no less than six models of development in just the Americas.<sup>127</sup>

But probably the most salient reason for citing Omran and the “epidemiologic transition” was growing concern with the problem of chronic disease in the developing world. More and more people in even the poorest countries seemed to be dying or suffering from cancer, heart disease, and diabetes along with traditional and newly emerging infectious diseases. The label far more than the actual theory allowed numerous writers to make sense of this shift. The theory’s assumption that chronic disease incidence would increase everywhere could be used in support of new kinds of preventive programs.<sup>128</sup> These developments allowed epidemiologists, health professionals and demographers to engage with the theory in ways that extended the focus of their traditional interests. Much of this work was highly critical of Omran. Said one writer, “the ‘western model’ of the epidemiologic transition, I will argue . . . is ill defined, and cannot therefore be put into operation without ambiguity,” but such criticism nonetheless stimulated increasing citation of his article.<sup>129</sup>

Undoubtedly the most successful example of such revisionism was the concept of the “health transition” meant to be a wider framework that included not only epidemiological characteristics (purportedly the subject of Omran’s model) but also the ways in which societies responded (or not) to changing health situations as a result of cultural, social, and behavioral determinants. This notion is attributed frequently to Julio Frenk, Mexico’s former Secretary of Health and dean of the Harvard School of Public Health since 2009.<sup>130</sup> Thanks to the support of the Rockefeller Foundation and the work of Australian demographer, John Caldwell, the “health

126. Abdel R. Omran, “The Epidemiologic Transition Theory Revisited Thirty Years Later,” *World Health Stat. Q.*, 1998, 51, 99–119, 102.

127. *Ibid.*, 114.

128. See for example, Henry Blackburn, “Cardiovascular Disease Epidemiology,” in *The Development of Modern Epidemiology: Personal Reports from Those Who Were There*, ed. Walter W. Holland, Jørn Olsen, and Charles du V. Florey (New York: Oxford University Press, 2007), 71–92, 85.

129. Mackenbach, “Epidemiologic Transition Theory,” 329; also see Martínez S. Carolina and Leal F. Gustavo, “Epidemiological Transition: Model or Illusion? A Look at the Problem of Health in Mexico,” *Soc. Sci. Med.*, 2003, 57, 539–50.

130. Julio Frenk, José L. Bobadilla, Jaime Sepúlveda, and Malaquias López Cervantes, “Health Transition in Middle-Income Countries: New Challenges for Health Care,” *Health Pol. Plann.*, 1989, 4, 29–39; Julio Frenk, José Luis Bobadilla, Claudio Stern, Tomas Frejka, and Rafael Lozano, “Elements for a Theory of the Health Transition,” *Health Trans. Rev.*, 1991, 1, 21–38.

transition” gained considerable traction in the 1990s with a center in Australia (founded in 1988), a series of international workshops and a dedicated journal (*Health Transition Review* 1991–97). While some of its leading lights like Caldwell seem to have made a point of not citing Omran if at all possible, Frenk et al. discussed his work seriously and sought to extend it by adding a variety of new variations of the model.<sup>131</sup> The same is true of later writers.<sup>132</sup> The irony is that they frequently caricatured and misread the “epidemiological transition” in much the same way as Omran had caricatured the demographic transition, casting it as a theory about changing disease conditions progressing everywhere in a uniform and unilinear manner. If anything, as we have argued in this paper, Omran’s epidemiologic transition was about the ways communities respond to overpopulation on the basis of cultural and social values and how they might be nudged into behaving differently through international interventions based in health services.

Such are the ironies of academic scholarship. Essays and books written for one purpose sometimes become famous because they are understood in ways no one could have initially predicted. As more and more scholars understood the “epidemiologic transition” to be about disease conditions and frequently took issue with it, it was scrutinized, criticized, and cited more and more frequently. As a result, it became, rather belatedly, a citation classic.

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131. Ibid. (to both sources).

132. See for example, Jacques Vallin and France Meslé, “Convergences and Divergences in Mortality. A New Approach to Health Transition,” *Demographic Research* [Special Collection 2], 2004, 12–43.