

Indian and American Demography, Expertise, and the Family Planning Consensus: 1930-1970

Nicholas Bolin

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University in  
partial fulfillment of the requirements for the degree of

Master of Arts

In

History

Dr. Matthew Heaton, Chair

Dr. Helen Schneider

Dr. LaDale Winling

May 14, 2019

Blacksburg, Virginia

Keywords: demography, population control, India, population policy, population studies, birth  
control, foreign aid

## Indian and American Demography, Expertise, and the Family Planning Consensus: 1930-1970

Nicholas Bolin

Indian population policy in the twentieth century was shaped by a blend of unique Indian concerns about population growth, legacies of British colonialism, and American foreign aid. This blend of influences resulted in the first national family planning program in the world.

## Indian and American Demography, Expertise, and the Family Planning Consensus: 1930-1970

Nicholas Bolin

In the first half of the twentieth century, demographers around the world began to see global population growth as dangerous. Specifically, American demographers saw this unchecked growth as a threat to global peace, the environment, and a major cause of poverty. Social scientists in India - economists, statisticians, and demographers - also saw population growth as a danger: as the cause of widespread poverty, disease, and famine. Despite their varied backgrounds, many social scientists in India came to see population control as necessary, though they frequently disagreed on methods. In the aftermath of the Second World War in 1945 and Indian independence in 1947, population control became a key part of the new government's plans to modernize the country and American and international organizations took special interest in studying and addressing "the population problem" in India. By examining what social scientists in these two countries said about population growth, historians can glean a better understanding of the origins of this conviction to deal with population growth.

## Table of Contents

Introduction	1
Chapter 1 - Population Thought in Pre-Independence India	17
Population Studies Before World War II	18
Population Studies in Wartime	35
After the War	37
The End of British Rule	48
Chapter 2 - American Perspectives on India	50
Origins of Concern	51
Population policy in Independent India	56
The US Government Gets Involved	66
Conclusion	71
Chapter 3 - Population Policy After Independence	73
Independence Comes to India	75
Demography After Independence	77
Developments After 1961	92
Conclusion	94
Conclusions	97
Bibliography	101

## Introduction

In 1925, Raghunath Dhondo Karve opened a birth-control clinic in Bombay, the first of its kind in India, and lost his teaching position as a result.<sup>1</sup> That same year, Mohandas Gandhi wrote in *Young India*: “It is not without the greatest hesitation and reluctance that I approach this subject... There can be no two opinions about the necessity of birth control.”<sup>2</sup> However, Gandhi voiced opposition to methods other than abstinence. Then in 1952, India became the first country in the world to sponsor a population policy of family planning, educating men and women on methods to prevent pregnancy, designed at reducing its rate of population growth. This change in attitudes towards population control resulted from a long scientific debate that spanned the twentieth century both in India and around the world.

It is this period of early international interaction that this thesis is concerned with; how and why the discourse around population growth in India changed over time from the 1930s to the 1960s. Indians and Americans both characterized population growth as a danger - though for different reasons - and saw population control as a protective measure against the consequences of high fertility.

Population growth concerned Indians for a number of reasons prior to - and separate from - first British and then American concerns about the same, and Indians were active participants in the science that shaped the policy aimed at preventing population growth. However, the historiography of demography has largely centered on the United States and its role, either as a player in Cold War aid battles around the world, or as a scientific and political hegemon

---

<sup>1</sup> Agarwala, S. N. “Population Control in India; Progress and Prospects.” *Law and Contemporary Problems*, 25, no. 3, Summer 1960., p. 581.

<sup>2</sup> Gandhi, Mohandas. “Birth Control.” *Young India*, March 12, 1925. in Mahatma Gandhi. *Young India: 1924-1926*. Current Thought Press: Madras, 1927. <https://archive.org/details/in.ernet.dli.2015.211139/>.

throwing money and expertise around. This perspective neglects the motivations and actions of scientists and politicians in the countries at the receiving end of American aid.

An important part of this thesis involves the direct involvement of Indian theorists and scientists. Where other historians have depicted global population control as a Western - or specifically American - export that the Third World adopted, happily or otherwise, this thesis will show that an original and independent chain of thought existed in India and found common ground with Americans later. Population control in India is not only the story of American expertise shipped abroad to “backwards countries,” Indian scientists played an active and involved role in characterizing the problem and developing solutions.

The thesis focuses on this specific Indian-American relationship for a few reasons. First is the unique position of India; it was “the only large, poor, and densely settled country for which there were adequate statistics.”<sup>3</sup> As a subject for study, India had the most concerning situation in terms of magnitude and setting, as well as abundant data going back for decades on which to build theories. American demographers also agreed with that assessment; Kingsley Davis, one of the first American experts on the population of India who started his research in the early 1940s, noted that India had “better census data than any other country in the world” for its stage of development.<sup>4</sup>

Those statistics, as well as population and its study, had long roots in British colonialism, especially in India. British rule over India did not end until 1947. From the 1880s onwards, nationalist movements across India began the long struggle for Indian independence. Figures like

---

<sup>3</sup> John C. Caldwell and Pat Caldwell, *Limiting Population Growth and the Ford Foundation Contribution* (London ; Dover, N.H: F. Pinter, 1986)., p. 37.

<sup>4</sup> Kingsley Davis, Interview with Kingsley Davis, interview by Jean van der Tak, Transcript, May 1, 1989, [http://www.populationassociation.org/wp-content/uploads/PAA\\_Presidents\\_1961-76.pdf](http://www.populationassociation.org/wp-content/uploads/PAA_Presidents_1961-76.pdf).

Jawaharlal Nehru and Mahatma Gandhi rose to prominence in the early decades of the twentieth century. Unrest was common, as British authorities cracked down on nationalist movements and violence between religious groups was common, especially Hindus and Muslims.

Apart from resistance to British rule, Indians worried about the economy and food supply. Though in 1930 the last devastating famine in India had occurred decades earlier in 1899-1900, population growth constantly stretched food supplies thin. Many were malnourished, and India's growth rate more than doubled in the wake of the First World War. This further expansion of the population threatened to outpace India's ability to feed itself, seeing nearly a thirty percent increase in population between the 1901 and 1931 censuses.<sup>5</sup> Indeed, between 1920 and 1940, India became a net importer of food. The only significant check against the runaway population growth of the 1920s and 1930s were the epidemics of cholera, smallpox, and malaria, though India did develop a basic public health infrastructure to reduce mortality.

Food shortages and illness were compounded by the Great Depression's effect on the Indian economy. A recession started in the 1920s slid into the depression of the 1930s, devastating India's economy. Agriculture suffered as crop prices plummeted, and the extensive cottage industries saw decline as well. One of the few small benefits was the shift to domestic manufacturing of things like textiles, as British goods became too expensive for the Indian market, which gave a small boost to Indian industry. Industrialization came with wage cuts and terrible working conditions, however, and industry could not solve the problems of rampant rural poverty.<sup>6</sup>

---

<sup>5</sup> Census of India. "Census of India: Variation of Population since 1901."  
[http://censusindia.gov.in/Census\\_Data\\_2001/India\\_at\\_glance/variation.aspx](http://censusindia.gov.in/Census_Data_2001/India_at_glance/variation.aspx).

<sup>6</sup> Stein, Burton and David Arnold. *A History of India*. John Wiley & Sons, 2010., p. 298-305.

With an economy in depression, widespread poverty, and food and medical crises, the situation in India in 1930 was not an ideal one. Nationalist movements, like those in the Indian National Congress, sought to offer solutions to these problems - an end to hunger, poverty, and disease - in order to win popular support. For many, population studies informed their solutions. Indian academics from a variety of backgrounds waded into the centuries-old debate about the growth of population and its relation to resources.

That discussion began almost two centuries earlier, in 1798, when Thomas Robert Malthus, an English cleric and author, wrote “An Essay on the Principle of Population.” His essay posited that humans tended to use abundances of food to increase in number rather than improve the standard of living. He proposed a mathematical relationship between the growth of food production and population growth; “population, when unchecked, increased in a geometrical ratio, and subsistence for man in an arithmetical ratio.”<sup>7</sup> In other words, uncontrolled population growth would rapidly outstrip the population’s ability to support it. This principle, the “Malthusian spectre,” became a very influential idea in studies of population; it created the concept of a “population problem.”

Malthusian concerns long outlived Malthus himself and his works shaped modern thinking about the relationship between resources, land, and population. While historians like Thomas Robertson have argued that his writing had little impact at the time in the United States, by the early twentieth century, especially after the First World War, his ideas found new purchase in intellectual circles. Many groups - including eugenicists, economists, environmentalists, and birth control advocates - carried the Malthusian ideals of decreased birth

---

<sup>7</sup> Robert Thomas Malthus, *An Essay on the Principle of Population* (St. Paul’s Church-Yard, London: J. Johnson, 1798), p. 6.



rates forward in defense of their varying goals.<sup>8</sup> Supporters of Malthus who - in contrast to his strict Christian abstinence - promoted birth control or other techniques to reduce birth rates characterized the Neo-Malthusian movement that enjoyed a renaissance in the early twentieth century.

Among the groups that embraced and repopularized this Malthusian worldview were demographers. Warren Thompson, one of the early leaders of the field in the United States, completed his PhD in Sociology with a dissertation titled “Population: A Study in Malthusianism” in 1915.<sup>9</sup> Contemporaries like Frank Notestein and Pascal Whelpton embraced similar concerns about population growth; Notestein’s famous demographic transition invoked Malthusian terminology.<sup>10</sup> Notestein founded the Office of Population Research (OPR) at Princeton University in 1936 and Thompson co-founded the Scripps Foundation for Research in Population Problems at Miami University, Ohio in 1922. These demographers and their foundations created an establishment for the fledgling science of demography in the United States, and their neo-Malthusian bend drove them to study the “problem” of population growth.<sup>11</sup>

Demography’s interest in population growth took on an increasingly international dimension in the wake of the Second World War. Though the US government took a stance of intentional inaction until the 1960s, American scientists worked with private aid groups like the Ford and Rockefeller Foundations, as well as international organizations like the United Nations,

---

<sup>8</sup> Thomas Robertson, *The Malthusian Moment: Global Population Growth and the Birth of American Environmentalism* (New Brunswick, N.J: Rutgers University Press, 2012), p. 5–7.

<sup>9</sup> Warren S. Thompson, *Population: A Study in Malthusianism*, vol. LXIII, Studies in History, Economics, and Public Law 153 (New York: Columbia University Press, 1915).

<sup>10</sup> Frank Notestein, “Population: The Long View,” in *Food for the World*, ed. TW Schultz (Chicago, IL: University of Chicago Press, 1945), 36–57.

<sup>11</sup> Edmund Ramsden, “Frank W. Notestein, Frederick H. Osborn, and the Development of Demography in the United States,” *The Princeton University Library Chronicle* 65, no. 2 (2004): 282–316, <http://www.jstor.org/stable/10.25290/prinunivlibrchro.65.2.0282>, p. 282-283.

to advance research on population growth, its effects, causes, and potential solutions from the 1950s forward.<sup>12</sup>

At the same time, Indians were agitating and planning for independence from Britain and formulating their own responses to the population problems of India. Even before independence, Indian scholars had concerns about overpopulation playing off of British concerns about the same.<sup>13</sup> However, in the 1930s and 1940s, their solutions to the overpopulation problem took on more explicitly anti-colonial and pro-national aspects.<sup>14</sup> Indeed, after independence in 1947, the Indian government under Jawaharlal Nehru prioritized eliminating poverty and developing a robust and industrialized economy.<sup>15</sup> Population control played an essential role in most conceptions of the planned Indian economy, at least through the end of Nehru's life in 1964.

Apart from the American interest, the neo-Malthusian line of reasoning had older origins in India than American involvement as a legacy of the British colonial presence and British education for Indians, but by the 1930s, American influences under the banner of demographers like Warren Thompson had taken the forefront in the field.<sup>16</sup> As Americans became the leaders in demography, more Indians sought to study and work in the US. For example, Sripati Chandrasekhar, perhaps India's leading demographer of the time, got his PhD at Columbia

---

<sup>12</sup> Phyllis Tilson Piotrow, *World Population Crisis: The United States Response*, Law and Population Book Series, no. 4 (New York: Praeger, 1973), 31–35. and Peter J. Donaldson, *Nature against Us: The United States and the World Population Crisis, 1965-1980* (Chapel Hill: University of North Carolina Press, 1990), 19–28.

<sup>13</sup> Matthew Connelly, *Fatal Misconception: The Struggle to Control World Population* (Cambridge (Mass.); London: Belknap Press of Harvard University Press, 2008), p. 38-39, 57-59.

<sup>14</sup> For examples see, Bimal C. Ghose, *Planning for India*, 2nd ed. (Oxford University Press, 1945); Sripati Chandrasekhar, *India's Population: Fact and Policy* (New York, N.Y: Asia Press - The John Day Company, 1946); or Gyan Chand, *India's Teeming Millions: A Contribution to the Study of the Indian Population Problem* (London: George Allen & Unwin Ltd, 1939).

<sup>15</sup> Burton Stein and David Arnold, *A History of India* (Hoboken, UNITED KINGDOM: John Wiley & Sons, Incorporated, 2010), p. 399-400.

<sup>16</sup> Caldwell and Caldwell, *Limiting Population Growth and the Ford Foundation Contribution.*, p. 38-39.

University in New York in 1944 and lived in the United States for long periods of his life.<sup>17</sup> For the period this thesis explores, the Indian-American relationship is much more involved than between any other country. The United States actively offered aid and assistance to India, while India actively courted American attention.

### **Historiography**

Population control belongs in a lengthy and diverse historiography. Historians of medicine and science, and especially those interested in the history of eugenics, like Edmund Ramsden, have explored the eugenic and racist assumptions or aims built into many population control programs.<sup>18</sup> Others have approached population control as an international phenomenon, like Matthew Connelly and his invaluable *Fatal Misconception* in 2008. Others still have approached the subject of fertility regulation through its consequences for women and the sexism inherent in many population control policies, like Asoka Bandarage and Betsy Hartmann. Many demographers, activists, or diplomats have also written their own accounts of particular organizations or their own careers; figures like Dennis Hodgson and Susan Greenhalgh have authored institutional and intellectual histories of the field since the the 1980s and 1990s.<sup>19</sup>

Substantially more has been written on the practices and policies of international population policy. In the 1970s, when many of the population programs were still relatively new,

---

<sup>17</sup> Douglas Martin, "Dr. Sripati Chandrasekhar, Indian Demographer, Dies at 83," *New York Times*, June 23, 2001, Saturday Late edition.

<sup>18</sup> Edmund Ramsden, "Confronting the Stigma of Eugenics: Genetics, Demography and the Problems of Population," *Social Studies of Science* 39, no. 6 (2009): 853–84, <http://www.jstor.org/stable/27793328>; Edmund Ramsden, "Carving up Population Science: Eugenics, Demography and the Controversy over the 'Biological Law' of Population Growth," *Social Studies of Science* 32, no. 5/6 (2002): 857–99, <http://www.jstor.org/stable/3183057>; Ramsden, "Frank W. Notestein, Frederick H. Osborn, and the Development of Demography in the United States."

<sup>19</sup> Hodgson, Dennis. 1983. "Demography as Social Science and Policy Science." *Population and Development Review* 9 (1): 1–34; Hodgson, Dennis. 1988. "Orthodoxy and Revisionism in American Demography." *Population and Development Review* 14 (4): 541–69; and Greenhalgh, Susan. 1996. "The Social Construction of Population Science: An Intellectual, Institutional, and Political History of Twentieth-Century Demography." *Comparative Studies in Society and History* 38 (1): 26–66.

authors like Phyllis Piotrow, in her 1973 *World Population Crisis*, began publishing accounts of how and why American organizations like USAID responded by endorsing population control in the form of family planning, though specific commitments were largely material rather than specialist advice, and had to be balanced against domestic politics and the willingness of the host countries to work with the US. This is likely a consequence of the shift in authorship from primarily demographers and affiliated social scientists to historians, though Piotrow herself was a political scientist with interests in population problems. Likewise, John and Pat Caldwell wrote the widely lauded *Limiting Population Growth and the Ford Foundation Contribution* in 1986, following nearly two decades of fieldwork with various professional population control organizations. This trend has continued for many years, with more recent additions by authors like Peter Donaldson, in his 1990 *Nature Against Us*, which recounts the origins and consequences of American aid through organizations like the Agency for International Development (AID). Academics more recently have focused on efforts beyond merely US influence, like Saul Halfon in his 2007 *The Cairo Consensus*, which focuses on the 1994 Cairo Conference which led to a widely adopted resolution on a framework of “women’s empowerment,” rather than “population control.” Historians like John Sharpless and Alison Bashford also emphasize the role of American aid in international population control.<sup>20</sup> Certainly, the international and transnational element of this field has been stressed more heavily in recent scholarship, but the United States still occupies a position of prominence. Population control around the world is largely a story of American expertise at work around the world.

---

<sup>20</sup> John Sharpless, “World Population Growth, Family Planning, and American Foreign Policy,” *Journal of Policy History* 7, no. 1 (1995); Alison Bashford, “Population, Geopolitics, and International Organizations in the Mid Twentieth Century,” *Journal of World History* 19, no. 3 (2008): 327–47, <https://www.jstor.org/stable/40542618>. Alison Bashford, *Global Population: History, Geopolitics, and Life on Earth*, 2016.

Still others write on the history of the “population problem” and its impacts around the world. Karl Ittmann is perhaps the most well-known in connecting the work of demography with consequences for the subjects of European colonial empires.<sup>21</sup> Sarah Hodges also considers the role of colonialism on the spread of contraception in the early twentieth century in her 2008 *Contraception, Colonialism, and Commerce: Birth Control in South India 1920-1940*. Britain plays a role in the origins of Malthusianism and its impact and spread, and many historians make note of this relationship.

Another major strain in the literature on demography and population control is concerned with the history and effects of population policies on women. Betsy Hartmann, one of this field’s most prolific writers, has written several highly critical pieces on population control, as with her 1987 *Reproductive Rights and Wrongs*, in which she challenges many of the assumptions that demographers and politicians had accepted about the nature of the population problem. Others follow in Hartmann’s critical footsteps, like Asoka Bandarage’s *Women, Population, and Global Crisis* (1997), which offers social and economic critiques of many prevailing ideas about population, most critically the assumption that population growth (especially in the developing world) is bad and must be regulated, and the policies that are based on such ideas.

The common thread in this historiography is the focus on the politics and policy, rather than the individuals and organizations behind them or the debates and international exchanges that created scientific consensus on population issues. Smaller bodies of literature consider other aspects -- the impact on the women these policies affect most directly, the environmental

---

<sup>21</sup> Karl Ittmann, Dennis D. Cordell, and Gregory Maddox, eds., *The Demographics of Empire: The Colonial Order and the Creation of Knowledge* (Athens: Ohio University Press, 2010); Karl Ittmann, “Demography as Policy Science in the British Empire, 1918-1969,” *Journal of Policy History* 15, no. 4 (2003): 417–48, <https://muse-jhu-edu.ezproxy.lib.vt.edu/article/48406/pdf>.

concerns, the economic or cultural impact of these policies -- but these are, with the possible exception of the women's history approach, fairly narrow, even for the scant history of demography. This thesis will focus on the small community of demographers that created the surveys, drew the projections, and forecast the efficacy of the various plans that were debated and implemented in India, and the debate over whether demography should even be concerned with issues of fertility control: their role in creating the understanding of the "overpopulation problem" and its solution in family planning, which spanned from contraceptive advice to forced sterilization in India. The organizations exist as avenues to exchange information and build professional relationships rather than as distributors of aid or actors in the struggle against population growth.

This thesis aims to fill a few small gaps in this literature. Firstly, the story of population control in India is not one of American export alone. While a great deal of attention has been paid to government and private policies that established population control programs, less has focused on the scientists that frame the discussion that creates those policies. While the social scientists are only one part of that discussion, theirs is a valuable perspective and what they said about population - and why - is valuable in understanding the nature and concern of others who relied on their expertise. Moreover, this thesis hopes to reincorporate the Indian perspectives about population control; fear of population is not a singular export of the United States, but developed separately in India. Concerns and solutions both emerged in India distinct from the United States, but their cooperation shaped the final nature of India's family planning program.

An understanding of the Indian perspective and concern over population growth is important firstly because those concerns are not purely historical. Even today, millions of men

and women each year are sterilized in an attempt to improve their own standards of living and bring India's birth rate lower. Though nominally on voluntary grounds, lack of adequate information about alternatives coupled with poverty or other circumstances often mean women are misled or otherwise coerced into these irreversible and often dangerous procedures.<sup>22</sup> The rhetoric and concern that demographers created in this early period informed the programs of the 1960s and 1970s, reaching a peak with the Emergency of 1975-1976 that led to millions of forced sterilizations. India's family planning program still exists and is, to some extent, still concerned with these issues from the previous century; examining this Indian-American relationship can help us understand the contributions and justifications of both countries.

From this large body of scholarship, this thesis borrows a few useful concepts. Perhaps most importantly, it mirrors Halfon's concept of population policy as a consensus building exercise. In *The Cairo Consensus* Halfon argued that changing the language of population policy from "population control" to "women's empowerment" enabled many disparate groups to support a collective policy while still expressing a "disunity of thought and action."<sup>23</sup> In this same way, this thesis explores how "family planning" became a consensus term, though supporters of "family planning" often defined it very differently to encompass or exclude certain ideas or practices.

The other body of literature essential to this thesis is the politics of Cold War science. Authors like David Ekbladh and David Engerman have worked to connect US politics to scientific aid programs around the world. For instance, Ekbladh's *The Great American Mission*

---

<sup>22</sup> "The World's Most Common Contraception Has a Dark Past," Pulitzer Center, September 11, 2018, <https://pulitzercenter.org/reporting/worlds-most-common-contraception-has-dark-past>.

<sup>23</sup> Saul E. Halfon, *The Cairo Consensus: Demographic Surveys, Women's Empowerment, and Regime Change in Population Policy* (Lanham, MD: Lexington Books, 2007), p. 6-7.

(2010) argued that the United States employed a deliberate strategy in foreign aid that was designed to spread American values via government aid, non-governmental organizations, and bodies like the United Nations in which the US had influence. Development served as a vehicle for US interests. Amanda McVety provided another valuable example of US development aid as an ideological tool in *Enlightened Aid: US Development as Foreign Policy in Ethiopia* (2012). Engerman similarly explored the hidden impacts of aid programs in his 2018 *The Price of Aid: The Economic Cold War in India*. In it, he showed the costs that competing aid and scientific programs from the US and Soviet Union had on the Indian government and economy, and the conditions that aid programs came with. Michael Latham likewise connects US foreign policy, science, and politics in Cold War Ghana, Egypt, and India in *The Right Kind of Revolution* (2011). He argues that these countries adopted both American and Soviet ideas and blended them to achieve their own goals, especially highlighting the push for modernization and the role that demography often played in that modernization.

Others, like Mark Solovy and Hamilton Craven, tie social sciences to Cold War politics more direct. Their *Cold War Social Science: Knowledge Production, Liberal Democracy, and Human Nature* (2012) provides a range of examples of American political values embedded in scientific discourse during the Cold War. Joy Rhode explores the connection between social science expertise and American militarization, both domestically and abroad in her 2014 *Armed with Expertise*. All this serves to underscore the values inherent in systems of knowledge production. The Cold War had a lasting impact on the kinds and results of scientific research around the world; American scientific expertise came with assumed biases and costs.



## **Organization**

This thesis is split into three chapters. The first is concerned with the origins of Indian concerns about population. It covers the debates about the question of overpopulation and the tentative steps towards a population policy before Indian independence in 1947, highlighting the unique motivations that drove Indians to study population and endorse population control. The second explores American interests and actions on population in India, to show why the United States would support a socialist country in the midst of the Cold War. It stresses the supporting role - in funding and in education - that Americans played to India's population policy. The final chapter deals with the Indian government's response to this problem of uncontrolled population growth between 1950 and the late 1960s, and why family planning came to be the solution; showing how Indian scientists and policymakers drove the population control program in the 1950s and 1960s, with support from American and international organizations.

## **Methodology and Limitations**

To explore Indian and American views on population growth and control in this period, this thesis will examine scientific works - books, reports, and articles - written by theorists of population studies and demographers. Less attention is paid to internal government documents, study reports, or funding grants; the thesis is less concerned with how solutions were implemented or how effective they were, but rather with how the problem was characterized and how characterizations paralleled or differed between the US and India. It also draws from personal accounts and memoirs - autobiographies, interviews, and other non-scientific pieces - from the scientists who studied the "population problem." These provide insights into the personal relationships and private interactions that don't appear as readily in formal scientific

writing but still have significant impact in shaping conceptions of population and its impacts.

Approaching this subject as a social history of science - focusing on the researchers and practitioners, their relationships, and their ideas - allows us to examine the ideas and language these scientists used to characterize the problem, its causes, and how that language changes over time to reflect changing opinions. This method also enables us to see which pivotal moments or interactions particularly shape this discourse; if specific sets of data or interactions change the language that demographers used to describe their theories or the people those policies affected.

This approach does have its limits, however, especially with regards to the Indian side of the debates. The discussion around birth control and population predates the period this thesis will examine, and many of these discussions occurred in languages other than English. For published works, especially those from the popular press, I am limited by my lack of fluency in Hindi, Marathi, or any of the other many languages spoken and written in India. Beyond a lack of fluency, there are also significant archival shortcomings. For many Indians in this period, including the social scientists and demographers this thesis explores, little of their professional lives remains archived or well-documented; in many cases, even a first name can be difficult to find with accuracy. The best documented and preserved were those who lived and worked internationally, like Sripati Chandrasekhar, who lectured and lived in the United States for many years. The social history of science approach favors the works and lives that are accessible to Western scholars, and as such may leave out significant Indian figures who had a limited audience abroad, or who wrote in a language other than English. A focus on the scientists and their writing also runs the risk of ignoring the political realm, where many of these solutions were actually implemented. As such, this approach avoids retreading the same ground as a large

number of political and institutional histories that explore the realities and consequences of these policies, at the expense of insight into how practical experience shaped these debates.

## **Definitions**

For the benefit of the reader, it may be useful to consider some key definitions at the beginning. First is the distinction between *population control* and *population policy*. While used largely interchangeably by demographers in this period, *control* implies a positive check on population growth - usually reducing fertility - while *policy* is merely an official national stance on population. India's policy intended to reduce fertility and so its population policy was a policy of population control, but this is not universal; indeed, there were some who called for a pro-natalist population policy to increase births. The distinction between fertility and fecundity is also an important one. Fertility - the number of children born - is a different measure from fecundity - the biological capacity to have children. When demographers study differential fertility or national fertility, they are concerned with the difference in average number of children for given social, racial, religious, or national groups, not the health or ability of mothers to physically bear children. For Indian sources, *lakh* and *crore* represent 100,000 and 10,000,000 of something, generally people or currency, though a numerical representation accompanies any direct quote in this text.

Most importantly, the terms *family planning* and *birth control* had differing and often competing definitions; a central part of this argument rests on this ambiguity. Generally, *birth control* describes positive measures to prevent pregnancy, often subdivided into "appliance methods" - condoms, intrauterine devices (IUDs), or contraceptive pills - and "non-appliance methods" - coitus interruptus (the "pull-out method") or the rhythm method, which avoids

intercourse during periods when the woman is most likely to get pregnant. *Family planning*, by contrast, generally meant an intentional structuring of the family, including the number and spacing of children. Usually, this implied a social shift to the small family ideal and education on the benefits of smaller, more well-spaced families with fewer children. As chapter two covers, however, family planning later comes to encompass the methods that allow families to have fewer children.

## **Conclusion**

Population control remains controversial in India even today after the events of the 1975-1976. The history of India's family planning program has largely been written by American authors to emphasize the role of the United States in worldwide population control. This thesis aims to explore the connections between Indian and American scientists while highlighting the initiative and unique motivations of Indian scientists and politicians who drove this push to policy. Before and after independence, India's "population problem" occupied the minds of Indian, and later American, scholars.

## **CHAPTER 1 - POPULATION THOUGHT IN PRE-INDEPENDENCE INDIA**

Indian scholars, politicians, and social scientists in the early twentieth century began to give serious consideration to the "population problem" of overpopulation in India, and to think about potential solutions. Numerous concerns - like food, disease, poverty - drove scientists and policy-makers to question the role of population in India's situation, and based their metrics for what constituted "overpopulation" accordingly. India, with its history of epidemics and famine, naturally attracted concerns about supporting large populations. Economists and physicians in the 1930s and 1940s started to consider population as a variable that affected the economy and

national health, and some began to consider the merits of population control to offset some of the risks that high population growth could entail. Faced with the recency of serious famines and epidemics, as well as the persistent malnutrition and poverty exacerbated by the Great Depression in large parts of India, many Indians saw population studies as integral to building a better India.

This chapter is loosely modeled on Dennis Hodgson's "The Ideological Origins of the Population Association of America."<sup>24</sup> It does not tell the story of a specific organization like Hodgson's piece, but of the field of population studies as a whole in India. There are many parallels of the field in India and America, where advocates of a variety of backgrounds found common cause in promoting the study of population and its effects. Economists, demographers, medical professionals, eugenicists, and politicians all contributed to the discussions around population in India.

Indian interest in population evolved separately from - and at times in opposition to - British interests, for reasons unique to India's situation. British concerns about disease or food supply were different from Indians' concerns about quality of life; one was a question of governability while the other was a question of national improvement. In some instances, population policy was grounded in anti-colonialism; bad situations could be blamed on colonial policies and potential solutions required political freedom for India. Indeed, population policy became integrally connected to conceptions of an Indian state and planned economy by the time India achieved full independence in 1950.

---

<sup>24</sup> Hodgson, Dennis. "The Ideological Origins of the Population Association of America." *Population and Development Review* 17, no. 1 (1991): 1-34. <https://doi.org/10.2307/1972350>.

## **POPULATION STUDIES BEFORE WORLD WAR II**

A wide range of different backgrounds loosely comprised the field of population in India in the early twentieth century. No clear boundaries demarcated population studies. Far outnumbering the “real” demographers were economists, public health practitioners, and politicians. Academics and activists of many backgrounds wrote on the “population problems” of India, and took a wide range of positions on these “problems.” Some, especially economists, felt that population growth imperiled India’s development or even risked famine and other disasters and advocated for aggressive measures to reduce or halt population growth. Others, especially among socialist economists and politicians, agreed that uncontrolled growth was unsustainable, but argued that economic development would naturally reduce birth rates - there was no reason to actively pursue a policy to reduce fertility. Others felt that concerns about population growth were overblown - or even harmful - and that India would do fine without reducing birth rates.

Their motivations were as diverse as their backgrounds. Some set out to eliminate poverty while others sought to curb disease or prevent famine. All at least paid lip service to the idea that their proposed policies would improve standards of living for Indians, alleviating widespread poverty and malnutrition. Common to almost every proposed solution was a call to develop agriculture and the economy, in order to feed and employ more people. Others proposed social changes or legislation to reduce birth rates such as outlawing child marriage or increasing access to birth control.

Circumstance tied humanitarian and personal motives with political ones, as India remained a colonial possession of the United Kingdom. Many economists strongly extolled the virtues of a strong socialist government in improving the lives of India’s people. This was a

two-fold suggestion: a strong, Indian socialist government would naturally require independence from British rule. Indian population-minded advocates sought to connect India's struggle for independence with humanitarian goals and population control, though some resisted on the same nationalist grounds; a newly independent India would need vast reserves of labor to develop a robust economy.

Some factors must be considered about almost all of these figures in the pre-independence period. Most came from upper class households and had the opportunity to study in Western schools. The vast majority were educated in Britain or in colonial universities; only a few, namely those who called themselves demographers, like Chidambara Chandrasekaran and Sripati Chandrasekhar, were educated in the US, and then only after the war. Nearly all of these authors had teaching positions at universities in India or research posts at a handful of private Indian institutions. Some even had experience in the Indian Civil Service. Their education and background cannot be discounted when discussing their attitudes towards population growth in India, especially among lower classes or castes.

Though their proposals may have shared many central elements, the discussions around population came from a wide variety of backgrounds. More than just their disciplinary backgrounds, the field of population studies was full of Indian scholars educated around the globe: in the UK, the United States, and in India itself. Among the most prominent players in the discourse of the pre-war years were statisticians, public health advocates, and economists.

One such economist was Radhakamal Mukerjee, head of the Department of Economics and Sociology at Lucknow University in India from 1921 to 1952. Mukerjee was educated in

India, receiving his PhD from Calcutta University in 1920.<sup>25</sup> He wrote extensively on the issues of land, migration, and food security with regards to population. His 1938 book *Food Planning for Four Hundred Millions*, leaves little doubt the severity he saw in the problem. The growth “threatened” India, as he - and many others - predicted there would be more than four hundred million people in the country by 1941.<sup>26</sup> Even here, Mukerjee referred to “the Indian population problem,” and raised the concern that a “sub-nutritional level” of food for the majority of the population led to disease and economic inefficiency, blaming malnutrition for “absenteeism, lateness and low output” in laborers as well as “predisposition to disease, ... mortality, ... indebtedness and poverty” more broadly. By his estimates, India suffered a “food deficiency of 12 per cent of the population” annually, and Indians needed to maximize efficiency of land use to increase harvests and maximize calories per acre, what Mukerjee called “the primary adjustment required.”<sup>27</sup>

Mukerjee saw planned agriculture as the only way to save India’s starving masses, contrasted with the “unplanned agriculture of poverty-stricken small-holders” which produced sub-optimal grains over a diversity of foods, damaging the soil, reducing yields, and worsening the problem of food insecurity. Likewise, poor crop choices lead to poor nutrition for cattle, shortening the dairy supply, a “particularly necessary” dietary addition, especially for “a non-meat eating population,” and entering a vicious cycle in which more cattle are acquired to compensate for lower yields. Moreover, Mukerjee derided the “ancient sentiments” that led

---

<sup>25</sup> R. N. Saksena, “Obituary: Radha Kamal Mukerjee [1889-1968],” *Sociological Bulletin* 17, no. 2 (1968): ii-iv, <http://www.jstor.org/stable/23619305>.

<sup>26</sup> Mukerjee, *Food Planning for Four Hundred Millions*. p. vii.

His claim was not far off, as the 1941 Census showed 388,997,955 people in India, though this included the population of what would become Pakistan after Partition in 1947.

<sup>27</sup> Mukerjee, *Food Planning for Four Hundred Millions*, p. viii-ix.



Indians to “the maintenance of uneconomical and useless cattle,” whose numbers had also ballooned to some 125 million. This, he said, was a tremendous risk, and “only a planned programme of restriction... and of controlled breeding” could support a mixed agricultural economy, but noted that “social sentiments die hard in India” and the country could look forward to decades of “excessive burden of worthless, superfluous beasts” which would “aggravate the poverty of small-holders and the exhaustion of soil and grass-land resources.”<sup>28</sup>

Part of this “poverty of small-holders” Mukerjee attributed to an outdated mingling of ancient customs and English land rights assumptions. In his 1933 *Land Problems of India*, he laid the blame on a growing landlord class and “British misunderstanding of the Indian village tenures and customs.” If money-lending classes continued to acquire land and impoverish farmers, Mukerjee warned of “grave economic and social danger.” Increased pressure to meet the demands of money-lenders from increasingly small parcels of land led to immediate profit-seeking, a system that Mukerjee considered untenable in the long-term.<sup>29</sup> Indeed, Mukerjee criticized this system for its inequitable land distribution as well as its lack of foresight. He contrasted the “dangerous and misleading” cycles of Indian agriculture against “[a]gricultural accountancy... a science in the United States, Belgium and Denmark.” Modern economies planned and improved their systems of agriculture, he argued, and India must do the same for the sake of the indebted peasantry and the country as a whole, as protection against the “inevitable cycle of droughts in the Indian climate.”<sup>30</sup>

The conclusion of that book served as a call to action, denouncing the landlord class as unnecessary and predatory, while insisting that “pressure of an enormous population” could not

---

<sup>28</sup> Mukerjee, *Food Planning for Four Hundred Millions*, p. x-xii.

<sup>29</sup> Mukerjee, *Land Problems of India*, p. 329-330.

<sup>30</sup> Mukerjee, *Land Problems of India*, p. 346.

be supported by the current system. Farmers, he argued, had been forced to subdivide the land so much that they could not properly support families. “This is no criticism,” he called it, “but a summary of the facts. The old system has broken down” and any delays in building a new one capable of supporting a larger population economically and nutritionally risked “sow[ing] the seeds of drastic reform, and, it may be, even of revolution.”<sup>31</sup> Undoubtedly, his hinting at violent upheaval was directed at a British audience as well as his fellow Indians, in the hopes that the colonial government would adopt at least some of his proposed reforms to land ownership and revenue-sharing. Still, inefficient land use resulting from higher population had pushed many into poverty and risked the health of the nation, the economic security of a large class of the population, and even risked revolt.

*Food Planning* stressed the “great possibilities in the direction of the growing of more heavy-yielding cereals.” New crops, as well as improved seed stock, fertilizer, and crop rotation techniques, would improve the quantity and quality of food, as well as to relieve the pressure monoculture farming placed on the soil.<sup>32</sup> However, many obstacles prevented India from rapidly adopting these measures. Lack of infrastructure - irrigation especially - prevented a dramatic increase in arable land. Moreover, social constraints on inheritance meant farm plots became increasingly subdivided with each generation, to the point of infeasibility for produce or income. Similarly, cattle, though highly respected for cultural and religious reasons in many parts of India, roamed in “excessive numbers” and presented “a most uneconomical drain on soil resources.”<sup>33</sup> More area would be expensive to make arable, while economics and social and

---

<sup>31</sup> Mukerjee, *Land Problems of India*, p. 362.

<sup>32</sup> Radhakamal Mukerjee, *Food Planning for Four Hundred Millions* (St. Martin’s Street, London: Macmillan and Co., Ltd., 1938), p. 190-192.

<sup>33</sup> Mukerjee. *Food Planning*, p. 192-195.

cultural factors reduced the efficiency of individual farmers. With such conditions exacerbating poverty, even closely tying health to agricultural output, the majority of Indians must live under constant fear of “a famine... or a virulent epidemic sweep[ing] over the country” and re-establishing “the Malthusian equilibrium.”<sup>34</sup> Such dire conditions impeded any progress and required serious time and effort to correct in any meaningful way, and even Mukerjee’s title invoked an upper limit on population, dictated by agriculture.

Beyond simple malnutrition, the Depression had wrought terrible damage on India’s economy, reducing the number of industrial workers and cutting into India’s massive agricultural export market, driving more people to find work or subsistence in local agriculture and stressing the “impoverished soil” further.<sup>35</sup> In Mukerjee’s eyes, however, the problem existed outside of ecological and economic concerns. He blamed part of the problem on a number of social factors: the infant marriages of lower Hindu castes and polygamy in the Muslim population lead to increased population, “[i]lliteracy and impudence,” results of a “long, futile struggle with poverty,” impede adoption of birth control techniques in favor of “ancient crude methods of regulation of the size of the family, viz., abortion and infanticide.”<sup>36</sup> Mukerjee betrayed a hint of religious bias when he worried that “the dead weight of illiteracy among the backwards castes and the Muslims of India” posed a threat to education and India’s development.<sup>37</sup> In other words, Mukerjee blamed the sentimentality and superstition of the peasantry, coupled with a lack of modern high-yield farming techniques like adaptive crop rotation, as well as a poor economy, for

---

<sup>34</sup> Mukerjee., p. 200.

<sup>35</sup> Mukerjee, *Food Planning*, p. xii-xiii.

<sup>36</sup> Mukerjee, *Food Planning*, p. xiii-xiv.

<sup>37</sup> Mukerjee, *Food Planning*, p. 216.

dooming India's food security and starving its people, leading to reduced standards of living, increased mortality, and exacerbated economic inefficiency.

Mukerjee can then be counted among the ranks of the nationalists and opponents of uncontrolled population growth. He attributed India's problems to poor colonial management and inefficient agriculture. Land, economic, and agricultural reform, alongside "country-wide birth control propaganda" would enable industrialization, improved crop yields, and a reduced birth rate, all of which would contribute to a higher standard of living. He even invoked Malthus, worrying that any gains in crop yield or economic standing would be undone, as population "will rapidly rise again to the maximum number of persons the land can support."<sup>38</sup> To him, population growth endangered India's development, and improvement in the lives of ordinary Indians required an active government with population control policies.

Mukerjee was not the only economist with anxieties about population; V.K.R. Varadaraja Rao, Principal and Professor of Economics at LD Arts College in Ahmedabad and later founder of the Institute for Economic Growth (IEG), echoed similar concerns in several of his works, especially about national economic development. His 1935 *An Essay on India's National Income 1925-1929* explored the history of India's economic growth in various sectors, finding limited growth in many regions, despite vast potential. In it, Rao called for "radical measures" to increase the low national income, including agricultural and industrial planning (which "implies initiative on the part of the State") as well as dramatic increases in capital resource development and public expenditure, in face of growth on the "pace of a snail" and a continually expanding population.<sup>39</sup> In the following years, Rao made a series of six talks on the All India Radio

---

<sup>38</sup> Radhakamal Mukerjee, *Food Planning for Four Hundred Millions* (St. Martin's Street, London: Macmillan and Co., Ltd., 1938), p. 216.

<sup>39</sup> VKRV Rao, *An Essay on India's National Income 1925-1929*.

Station, Bombay, address to the public, in which he stresses points reminiscent of Mukerjee. Cheap imported goods upended India's economy and ruined the village craft trades as well as national industry, driving laborers back to agricultural work. What jobs remained grew more competitive with the growing population, and so landholders divided the fields into uneconomic holdings so that every farmer would have some land - though not enough - and, like Mukerjee, Rao blamed this partly on Hindu and Muslim inheritance laws.<sup>40</sup> Rao aimed many of his talks at the broad public, trying to build nationalistic sentiment, and making the case for a strong government with a hand in economic planning to reverse many of the dangerous trends, that "production is low, distribution unequal, and consumption uneconomic."<sup>41</sup>

Like Mukerjee, Rao pinned India's economic ills on population growth, at least in part. He worried about the sustainability of current legal systems for producing enough food or enabling farmers to make a sustainable living. A strong central government pushing industrialization and protections for domestic manufacturing, as well as agricultural reforms, formed necessary parts of his addressing of India's situation, though he did not advocate for a direct restriction of fertility like birth control. Rao saw clear dangers in India's economy, and blamed this in part on population growth, though his proposed solutions had more to do with land and economic reforms than with social changes.

Perhaps the most famous treatise on India's population from an Indian author was *India's Teeming Millions* (1939), by Gyan Chand, Professor of Economics and Head of the Department of Economics at Patna University. Chand received his doctorate in Economics from As the title suggests, Chand emphasized population as one of the country's "major and urgent problems" and

---

<sup>40</sup> VKRV Rao, "What is Wrong with Indian Economic Life?" p. 10.

<sup>41</sup> VKRV Rao, "What is Wrong with Indian Economic Life?", p. 69.

warned of “enormous difficulties” even in the most optimistic views of the “gravity” of the population situation in India.<sup>42</sup> His outline of the problem bordered on hyperbolic, but made explicit connections between the battle against population growth and British colonial dominance:

“The gods may be good to us and our difficulties melt away. Even then we will find that our Teeming Millions will be a challenge to our material, moral and mental resources which we shall not find it easy to meet. But if our struggle for freedom is, as is more likely, to have its ups and downs and the immediate future requires concentration of efforts on acquiring the mastery of our house, we would do well to realize that the increase in our numbers which is taking place is going to increase our difficulties and make the ultimate task of the renovation of our people more taxing and strenuous.”<sup>43</sup>

In his view, even divine intervention could only make this task difficult, if not impossible. The “population problem” required an immediate and nuanced response; “only a Neo-Malthusian propagandist” could argue for birth control as the sole solution. Instead, Chand cast the population problem as a “re-making of a derelict people” whose “solution depends upon a complete and radical reconstruction of our entire national life,” including “control of population” as a central part of the plan.<sup>44</sup> Chand’s view of the population problem was even more drastic than Rao or Mukerjee, though they found agreement on many points; indeed, *Food Planning for Four Hundred Millions* is listed among the five influential books that Chand lists as already authored on the subject of India’s population problem.

Throughout *Teeming Millions*, Chand addressed a number of concerns reminiscent of American writing on the subject. He identified first that the growing population created a problem that was “as much a political as an economic necessity.” Like the American demographer Warren Thompson, he warned that “dense population” in South and East Asia

---

<sup>42</sup> Chand, Gyan. *India’s Teeming Millions*, p. x.

<sup>43</sup> Chand, Gyan. *India’s Teeming Millions*, p. x-xi.

<sup>44</sup> Chand, Gyan. *India’s Teeming Millions*, p. xi.

created “serious instability and weakness for the world as a whole,” especially in a time of “insane, militant nationalism.” Chand foresaw population and resource imbalances leading to “the inevitable smash,” though he cautioned against planning on a war to reduce population pressure or settle the population-resource conflict: “we cannot live our lives on the assumption that the civilized part of humanity is on the point of committing suicide.”<sup>45</sup> Chand refused to equivocate on the importance of population policies; he condemned the “over-weening nationalistic ambitions” of Hitler and Mussolini and their moves to reverse declining birth rates. In Chand’s view, Hitler and Mussolini “would rather urge their people to tighten their belts and put up with the privations due to ... a larger population” than allow for “cosmopolitanism, pacifism, ... and the view that women have also a civic right and duty .. outside the limited sphere of home and family.”<sup>46</sup> In the midst of international tension, Chand called on countries to ignore the “madness of persons in authority” and work together to implement an international population policy.<sup>47</sup>

Specifically to India’s problems, Chand read much like his contemporaries, decrying “abject poverty” and calling for an economic solution that could provide “at least the very minimum of civilized life” to everyone. To solve these problems, to save the impoverished masses from their “blank despair” and “desperate plight” would require “almost super-human efforts,” an undertaking “as colossal as it is imperative.”<sup>48</sup> He compared the failings of Malthusians, who refused “otherwise beneficent measures” for fear of reducing economic pressure and increasing the population growth rate, and socialists, who saw overpopulation as

---

<sup>45</sup> Chand, *India’s Teeming Millions*, p. 1-2.

<sup>46</sup> Chand, *India’s Teeming Millions*, p. 12-13.

<sup>47</sup> Chand, *India’s Teeming Millions*, p. 2.

<sup>48</sup> Chand, *India’s Teeming Millions*, p. 3.

“only a bogey invented by the property-owning classes or the economists.” However, he ultimately came down harder on the socialists, dismissing them as optimists who “fondly cherish the illusion” that socialism would eliminate any need to consider population.<sup>49</sup> He noted that India was divided between these two camps, and that such division carried around the world. “[D]ivided counsels” would lead to “anarchy owing to lack of organization and conflict of values,” which must be overcome to address the problem: “there is not justification for complacency or inaction.”<sup>50</sup>

To add to this decidedly contentious section of his work, Chand dedicated some time to the even more hotly contested question of who was to blame for the poverty of the Indian peasantry? Here, Chand identified another dichotomy: British apologists and their critics. The apologists argued Britain had taken up the “onerous responsibility of governing... the dumb, voiceless millions” and left the country more prosperous, but the peasantry remained poor because of “an evil social heritage.” To the apologists, the Indian poor were “the cause of their own poverty.”<sup>51</sup> To the nationalist, Chand’s antithesis to the apologist, the British had been “an unmixed evil” for India, and the “most damning proof is the grinding poverty of the people.” To them, poverty had “no connection whatsoever to the population... and its rate of growth” but with the British system of “exploitation of the resources and people of this country.” Population concerns, to this camp, were only raised by apologists “in order to cover the sins of the Government and has no bearing at all on the solution of India’s economic problem.” Thus, population and its control had become a political issue in India, though “the cleavage of opinion

---

<sup>49</sup> Chand, *India’s Teeming Millions*, p. 3-4.

<sup>50</sup> Chand, *India’s Teeming Millions*, p. 6, 42-43.

<sup>51</sup> Chand, *Teeming Millions*, p. 6-7.



[in India] is the same here as in every country.”<sup>52</sup> Debate and disagreement abounded about the relation between poverty and population, in India and around the world, but Chand aggressively dismissed arguments trying to reduce population’s centrality to the issue and called for countries to work together towards a permanent solution.

To fully assert the importance of his work, Chand turned to an answer to the most contentious question: “Is India over-populated? is a question which is too often answered in terms which leave out . . . the imperative necessity of making India a country fit for men to live in. At present it is not.” He conceded that the answer “depends upon the choice of the end and the means.” For instance, India was not too overpopulated, by Chand’s reckoning, to continue its “present sordid existence.”<sup>53</sup> Chand condemned those who would ascribe India to that fate. He decried those who insisted that India produced enough food to feed its current population and rejected population restrictions on those grounds, and even though evidence of widespread malnutrition was obvious “it is maintained that our food supply is quite adequate for our needs” though Indians were “dying . . . because we are hopelessly ill-fed.” Even more production would not necessarily meet every demand, and “very few of [the Indian States] are doing anything to improve agriculture.”<sup>54</sup> Overpopulation was not a certainty for India; with improvements in agriculture and reductions in population growth, India could be “a country fit for men to live in.”

Still, Chand saw promise as well as peril in the monumental task of “re-making the whole Indian nation” as he observed “India is a country of teeming millions and they are wretched and racked by hunger and despair . . . they are both an opportunity and a standing menace.”<sup>55</sup> His

---

<sup>52</sup> Chand, *Teeming Millions*, p. 7-9.

<sup>53</sup> Chand, *Teeming Millions*, p. 16-17.

<sup>54</sup> Chand, *Teeming Millions*, p. 303-304.

<sup>55</sup> Chand, *Teeming Millions*, p. 19.

conclusions, however, spoke more of risk than of reward. Through the course of India's *Teeming Millions* he had laid out the familiar arguments - economic development, agricultural improvements, free government, and access to birth control - but took a darker turn in his final chapter. He bemoaned the lack of "scarcity value" of life, the calls of socialists to ignore "the excess of numbers" that go underfed, underclothed, and unhoused. Most worryingly, Chand expressed hope that once the problem was understood, more effort could go into understanding the eugenics problem. The "primary importance" of eugenics, though still a distant hope in India, could address the "propagation of the unfit, ... and biologically tainted members of the community" and provide regulation to protect the country against this "serious" problem. While those options remained beyond the scope of India's abilities, Chand called for the common economic developments and public health programs, to start the process of winning the public over to the concept of population regulation.<sup>56</sup>

This population regulation was Chand's most controversial contribution to the population debate. Perhaps most concisely, he stated "Positive measures of economic and social change will have to be introduced but they will have to be supplemented by negative measures of population control." These "positive measures" - including increased agricultural output and economic development - would raise the standard of living, but would take too long or not sufficiently decrease the growth of population to be sustainable.<sup>57</sup> Political freedom, which Chand defined as "the cause of our retarded or arrested progress" and a prerequisite for any kind of planning, would be "lacking" at least for the "next decade or two."<sup>58</sup> Economic planning hinges on "unity

---

<sup>56</sup> Chand, *Teeming Millions*, p. 360-368.

<sup>57</sup> Gyan Chand, *India's Teeming Millions: A Contribution to the Study of the Indian Population Problem* (London: George Allen & Unwin Ltd, 1939), p. 325.

<sup>58</sup> Chand., p. 217-220.

of objective, purpose, and action” and India would be lacking those in its struggle for political freedom and so “rapid economic development of the country... is out of the question” despite the fact that optimistic economists, like Ghose, saw it as India’s “economic salvation.”<sup>59</sup> Similarly, industrialization would not be India’s saving grace, as it would “require the development of... roads, railways, banking, etc.” which took time to build and would only be a “partial solution” as the mass majority of Indians still had limited purchasing power. “[E]ven with the utmost speed is only going to take us a small part of the way” and would be, in reality, a “halting and disharmonious process and the assumption that we are going full speed ahead is not going to be realized in fact.”<sup>60</sup> While India “is a country of vast possibilities,” any planning for the near future had to be built on a realistic “measure of the progress that is attainable in our country.”<sup>61</sup> The industrialized West took sixty years to “change the trend of population... without any forethought on the part of the nations concerned” and for India to replicate that feat would require impossible foresight.<sup>62</sup> Even if it were politically feasible, Chand was certain that economic planning could not solve India’s population problem alone and certainly not on any sort of reasonable timetable.

Economists shared some clear concerns about the relationship between population growth and India’s economy. Many, like Mukerjee, worried that population growth would leave many Indians in poverty, as any improvements in personal income or agriculture would be offset by growing populations; increased crop yields or higher wages would simply be spread among larger populations, so the situation would only improve marginally, if at all. Their solutions were

---

<sup>59</sup> Chand., p. 227-228.

<sup>60</sup> Chand., p. 273-274.

<sup>61</sup> Chand., p. 287.

<sup>62</sup> Chand., p. 320-321.

likewise quite similar. Agricultural reforms - new farming techniques and land laws - were necessary to keep India's population fed. Many, like Rao, offered industrialization as a cure to many ills, including raising wages and potentially decreasing the pressure to have many children. Most economists saw the appeal of a strong, socialist government to achieve these goals. All of this served to situate population growth as an obstacle to a wealthy, well-fed, and independent India.

Indians in other fields saw other risks in population growth. For instance, Dr. K.C.K.E. Raja, a graduate of Cambridge University and Professor of Public Health and Vital Statistics at the All India Institute of Hygiene and Public Health in Calcutta, undertook some brief studies of the population problem in India. In a 1935 paper, "Probable Trend of Population Growth in India," he posited that India's population was actually growing at a fairly substantial rate.<sup>63</sup> He carried on a debate on the subject to some length with a Dr. BP Adarkar, an economist at Benares Hindu University, who disagreed on his predictions of growth in the immediate future.<sup>64</sup> From his post in Calcutta, he came in close contact with P.C. Mahalanobis, famed statistician and founder of the Indian Statistical Institute (ISI). Through Mahalanobis, he became involved with the ISI and its journal Sankhya; Raja served as Joint Secretary of the ISI under Mahalanobis in 1937-38, and was a regular contributor to the journal.<sup>65</sup> Population for Raja featured as a

---

<sup>63</sup> Raja, KCKE. "Probable Trend of Population Growth in India." *Indian Journal of Medical Research*, vol. 23. (July 1, 1935).

<sup>64</sup> See Adarkar, BP. "The Future Trend of Population Growth in India." *Sankhya*, vol 3, no 1. (1937). Raja, KCKE. "Comments on 'The Future Trend of Population Growth in India.'" *Sankhya*, vol 3, no 1. (1937). Adarkar, BP. "A Rejoinder." *Sankhya*, vol 3, no 1. (1937). and Raja, KCKE. "A Reply to the Rejoinder." *Sankhya*, vol 3, no 1. (1937).

<sup>65</sup> Mookerjee, S. P., and P. C. Mahalanobis. "The Indian Statistical Institute. Proceedings of the Annual General Meeting, 27th April, 1937." *Sankhyā: The Indian Journal of Statistics (1933-1960)* 3, no. 2 (1937): 217-24.

health issue, as well as exacerbating issues of food and economic security, and he was critical of British policies in managing Indian governance or in preventing poverty and disease in India.<sup>66</sup>

Prasanta Chandra Mahalanobis, under whom Raja had worked, contributed greatly to the early discussions of population in India. Though his formal training was in physics - indeed, his primary posting was Professor of Physics at Presidency College in Calcutta - he was widely hailed as the “founder of statistics” in India for his work in promoting the study and development of modern statistical methods.<sup>67</sup> Apart from founding the ISI in 1931 and its journal *Sankhya* in 1933, he viewed statistics as useful for India especially regarding enumerating populations and measuring resources.<sup>68</sup> In 1937, he called for sample surveys to assess India’s population growth rate, given a lack of useful data. Data was essential “to enable a scientific study of population problems” and he urged the government to start collecting responses immediately, so that such surveys could accompany the 1941 Census. He specifically mentioned applications towards “whether the standard of living (or supply of food) has been maintained proportionally, or has deteriorated relatively, with the increase in population,” how income affected family size, differential fertility between communities, or the impact of population growth on “the standard of health and physique.”<sup>69</sup> Beyond contributions to statistical methods, Mahalanobis showed concern about the impact of population growth, and encouraged increased analysis of the population problem.

---

<sup>66</sup> Raja, KCKE. “A Plea for a Forward Public Health Policy in India.” *Indian Medical Gazette*. (July 1937). p. 428.

<sup>67</sup> Nandi, HK. “Prof. P. C. Mahalanobis: 1893-1972.” *Calcutta Statistical Association Bulletin*. Vol. 22, no. 1-4 (March 1973). p. 1-4. and Kumar, T Krishna. “An Unfinished Biography: Prasanta Chandra Mahalanobis.” *Economic and Political Weekly*, Vol. 32, no. 23 (1997): 1321-332.

<sup>68</sup> “Editorial.” *Sankhyā: The Indian Journal of Statistics (1933-1960)*1, no. 1 (1933): 1-4.

<sup>69</sup> Mahalanobis, P. C. “The Need of a Sample Survey of the Growth of Population in India.” *Sankhyā: The Indian Journal of Statistics (1933-1960)* 3, no. 1 (1937): 58.

Before the outbreak of the Second World War, a community of Indian scholars had emerged that concerned itself with the problem of supposedly unsustainable population growth. Economists, statisticians, and public health practitioners all had differing motivations and concerns, but drew attention to the idea of a population problem. Their proposed solutions were largely practical; most called for economic and agricultural changes, as well as political freedoms for India's government. Their concerns were not population growth *per se*, but the effects of that growth on the health and standard of living for the rest of India's population. If India's population kept growing, the current food shortages, land issues, and economic problems would only be exacerbated, and any effort to increase crop yields, change land laws, or industrialize would find its gains spread thin over a growing population. Nationalist leader Subhas Chandra Bose, in his presidential address to the Indian National Congress in 1938, echoed many of these same concerns. He worried that "If the population goes up by leaps and bounds, as it has done..., our plans are likely to fall through." To prevent this, it would "be desirable to restrict our population until we are able to feed, clothe, and educate those who already exist."<sup>70</sup> Though he did not advocate specific population policies beyond "restriction," his remarks demonstrate the willingness of Indian political leaders to embrace population control to address poverty and food shortages.

## **POPULATION STUDIES IN WARTIME**

The Second World War brought stark reality to the discussions of population problems, and especially food security. The specter of famine had hovered at the edges of every discussion of Indian agriculture since the last devastating famines in 1996-1897 and 1899-1900, and

---

<sup>70</sup> Bose, Subhas Chandra, Sisir Kumar Bose, and Sugata Bose. *Congress President: speeches, articles, and letters*. Calcutta, Netaji Research Bureau. (2004), p. 15-16.

returned in horrifying force when Japan seized the British colony of Burma, cutting off a major supplier of food to Bengal in eastern India. This sudden seizure of vital food supplies, coupled with serious British mismanagement - or intentional negligence - resulted in the devastating Bengal Famine of 1943-1944, which claimed millions of lives through starvation or the malaria, smallpox, and cholera epidemics that followed.<sup>71</sup> Though a humanitarian tragedy, the Famine fed the growing population debate in India. In response to the Bengal Famine, the Government of India established a Famine Inquiry Commission in 1944, with a stated purpose “To investigate and report to the Central Government upon the causes of the food shortage and subsequent epidemics in India ... in the year 1943, and to make recommendations as to the prevention of their recurrence.”<sup>72</sup> The final report was grim; “In relation to the existing stage of development of her industrial and agricultural resources, India is, in our opinion, overpopulated.” Population growth had transformed India over the course of a generation from a net exporter to a net importer of food and had not kept pace in food production, such that malnutrition and poverty increased in spite of a growing national economy.<sup>73</sup> Millions of dead had revived fears of famine, and lent new credence to the concerns of the economists that food production needed to increase if India’s situation were to remain sustainable, even in the short-term.

---

<sup>71</sup> By some estimates, upwards of two million people died of famine in 1943-1944, five times as many as died in acts of war in the entire armed forces of the British Empire. Bailey, Sydney D. “Post-Mortem on the Bengal Famine,” *Far Eastern Survey*, Vol. 14 No. 25 (Dec. 1945) pp. 373-374. Poor economic management and price-setting policies exacerbated the loss of crop imports from Japanese-occupied Burma. For figures on the factors that drove up prices and lowered supply from Indian producers, see Schneer, Richard. “Famine in Bengal: 1943,” *Science & Society*, Vol. 11 No. 2 (Spring 1947), pp. 168-179. On wartime policies that worsened the famine (boat confiscation, shipping prohibitions), see Cormac O Grada, “‘Sufficiency and Sufficiency and Sufficiency’: Revisiting the Great Bengal Famine of 1943-1944.” from *Eating People is Wrong, and Other Essays on Famine, Its Past, and Its Future*, Princeton University Press, 2015, pp. 38-91.

<sup>72</sup> The Famine Inquiry Commission. “Famine Inquiry Commission Report on Bengal.” Government of British India, May 1945. <https://archive.org/details/in.ernet.dli.2015.206311/>. p. iii-iv.

<sup>73</sup> The Famine Inquiry Commission. “Famine Inquiry Commission Final Report.” Government of British India, 1945. p. 90.

Beyond the Famine Inquiry Commission, the Government of India took other steps to advance population studies during the war. In October 1943, it established a Health Survey and Development Committee, also called the Bhore Committee for its Chairman, Sir Joseph Bhore. The Committee was tasked with gathering data about the current health situation in India and to recommend plans for development in the future.<sup>74</sup> Dr. KCKE Raja served on the Bhore Committee as Secretary.<sup>75</sup> The Indian government also set up a Population Data Committee in March 1944 under the leadership of William WM Yeatts, who had directed the 1941 Census of India. Dr. KCKE Raja and PC Mahalanobis also served on the committee, as did Prof. KB Madhava, a founding member of the ISI.<sup>76</sup> The Population Data Committee sought to address questions of population growth in India; determining what could be gleaned from the existing data from the reduced 1941 Census, left incomplete due to the financial and logistical constraints of the war.<sup>77</sup> Clearly, population growth and public health remained a concern of the Indian government, even during wartime.

During the war, a new group of population scientists emerged: demographers. Whereas the discussion before the war had been largely dominated by economists, the first wave of trained Indian demographers came of age during the Second World War. Chidambara Chandrasekaran, newly-minted graduate with his PhD in Statistics from University College, London in 1938, returned to India and took up a job as an Assistant Professor of Epidemiology and Vital Statistics in 1940 at the All India Institute of Hygiene and Public Health in Calcutta,

---

<sup>74</sup> Bhore Committee. "Report of the Health Survey and Development Committee." Vol. 1. Government of India Press: Calcutta, 1946. p. 1.

<sup>75</sup> *Ibid.*, p. ii.

<sup>76</sup> "1931." Indian Statistical Institute. <https://www.isical.ac.in/~repro/history/public/timepage/1931>.

<sup>77</sup> "Indian Statistical Institute: Thirteenth Annual Report: 1944-1945." Vol. 7, No. 2. Indian Statistical Institute. Nov. 1945. p. 219-220.



where he studied disease.<sup>78</sup> Another early demographer, Sripati Chandrasekhar, earned his PhD in Sociology from New York University, where the eugenicist Henry Pratt Fairchild had served as his dissertation advisor.<sup>79</sup> Though they were only a few, these scientists would form the base of India's burgeoning population science community.

## **AFTER THE WAR**

Concern over population was not the sole domain of economists and public health advocates. Of the few professional demographers of the day, most found the population problem concerning. Sripati Chandrasekhar campaigned vigorously for action on the issue of population control and advocated a wide range of solutions, some of which stretched into the controversial. Like his colleagues in other disciplines, Chandrasekhar found the problem of food security immediately pressing. His 1946 *India's Population: Fact and Policy* became something of a standard text among social scientists grappling with the population question in India. As with most treatments of the situation, he began by stressing the malnourishment of the people. By emphasizing the worsening conditions in the wake of the war and the famine that had occurred in Bengal thanks to the "bungling of the Central and provincial Indian governments," Chandrasekhar made India out as the victim; a willing contributor to UN relief funds, but left to starve, since "India is not technically an occupied country -- that is, by recent enemies."<sup>80</sup> Chandrasekhar took a far more serious and urgent tone than most, however, warning of the approaching "familiar and heartrending spectacle of famine" and the deaths of millions, as the international community had overlooked India's problems. The first of the facts he laid out in

---

<sup>78</sup> Chandrasekaran, Chidambara. *The Life and Works of a Demographer: An Autobiography*. Tata McGraw-Hill: New Delhi, 1999., p. 63.

<sup>79</sup> Connelly, p. 61.

<sup>80</sup> Chandrasekhar, *India's Population: Fact and Policy*, p. 3.

*Fact and Policy* involved some napkin math on the food shortages in India. According to his figures, “India’s population today exceeds 400 millions and at the lowest minimum of 1,400 calories she can only feed less than 300 million people!” compared to nearby Australia’s average of 3,000 calories daily. This he attributed to the difference in the ratios of population to land area: Australia’s eight million had twice the land that India’s four hundred million did.<sup>81</sup> An overhaul, posited Chandrasekhar, of the agricultural economy, increasing area of farmland and abandoning “primitive methods of agriculture” for more modern techniques, was a prerequisite for solving the problems of “India’s chronic low level of living,” as was abolishing “the present obscurantist and unrepresentative government” in favor of a “free national and representative government of the future.”<sup>82</sup>

He also opined on the hazards of India’s food situation. His 1946 *India’s Population* blamed “extreme overpressure on agriculture and the lack of industrialization” for the “appalling condition” of India’s health and life expectancies. He proposed wide-ranging economic overhauls, to pull people off of uneconomically small landholdings and into industry, “striking the correct balance between agriculture and industry.” Improved techniques employed on these larger holdings, as well as increasing the area of cultivable land, would enable India to support a much larger population at a higher standard of living. Bengal, which had very recently “suffered one of the worst famines in its history resulting in the lost of some 2 million people” would be able to support “a population nearly twice as large” as before the famine, at their present standard of living.<sup>83</sup> He emphasized, however, that current policy dramatically underserved the population with its “present inefficient and callous food policy.” Under this policy, he wrote

---

<sup>81</sup> Chandrasekhar, *India’s Population: Fact and Policy*, p. 3-4.

<sup>82</sup> Chandrasekhar, *India’s Population: Fact and Policy*, p. 4.

<sup>83</sup> Chandrasekhar, *India’s Population.*, p. 98-101.

“today, parts of India are on a near-famine level” and “Unless immediate and radical efforts are made” to move people from subsistence farming to “more lucrative and productive enterprises” India would be left undeniably overpopulated with regards to its food supply.<sup>84</sup> For Chandrasekhar, as for Mukerjee, that change would be lengthy and involved; it required India’s political freedom and serious economic change - and upheaval - to reorient India’s economy. Both, in his estimation, would be lengthy and expensive programs.

Chandrasekhar made a point of arguing for a balanced economy, increasing industry, fostering handiwork trades, and increasing agricultural area. Government planning and infrastructure projects would enable the “vital necessity” of industrialization. Indeed, Chandrasekhar noted “What every province in India needs is a TVA (Tennessee Valley Authority).” Still, he emphasized that industrialization and economic planning could not “provide a panacea for all of India’s economic ills,” citing population pressure on agriculture and the risk of upsetting traditional crafts and creating net unemployment or worse economic inequality. Still, development of this kind would be a necessary part in raising the standard of living in India, paired with government programs to develop “communications and transportation of all kinds, of education, health, housing, and other social services.” All this, he asserted, depended on India’s “complete economic and political freedom.”<sup>85</sup>

Broadly, Chandrasekhar cast the population problem as “one of too many births and too many deaths, (with a low survival rate), with the surviving population subsisting on a miserable standard of living.” While the wake of the war had roused Indians across the country to the problems of agriculture, industry, education, and health, he noted that no one had undertaken to

---

<sup>84</sup> Chandrasekhar. *India’s Population*, p. 80.

<sup>85</sup> Sripati Chandrasekhar, *India’s Population: Fact and Policy* (New York, N.Y: Asia Press - The John Day Company, 1946), p. 98-103.

put forward population planning. As Chand had before the war, Chandrasekhar acknowledged that few could claim real statistical accuracy, but insisted that meaningful data be collected to inform the necessary work of planning for “India’s 400 millions.”<sup>86</sup> The country needed dramatic improvement in agriculture and nutrition, in its public health services, in education and industry, and in reproduction; to that end, most of his suggestions had to do with government organization. India, he had adamantly argued, would only see improvement if its leaders planned and accounted for the largest variable: population.

To curtail population growth Chandrasekhar proposed a national “Population Portfolio” including a “Bureau of Marriage and Eugenics” with laws restricting early marriages, pushing for medical examinations for marrying couples, access to birth control, and free pre- and post-natal medical care for mothers.<sup>87</sup> He also advocated for an active eugenics program, pushing “the desirable ideal of Indianization” through “inter-caste, inter-provincial, and inter-religious marriages on a vast scale.” More than simply marriage, he raised a eugenics plan to the point of exploring voluntary “eugenical sterilization” based on the “American experience” with legally sanctioned sterilization. Birth control to “reduce the the high death rate” would lower India’s infant and childbearing mortality, as it would prevent pregnancies with low chances of survival in the first place. Educating women that “a scientific device to meet their desperate, albeit latent, demands” existed would face no organized religious or governmental objection, he assumed, so much as “the general rural conservatism of the masses that offers resistance to any reform.”<sup>88</sup> Such programs would directly challenge many established social mores, but were necessary to

---

<sup>86</sup> Chandrasekhar, *India’s Population: Facts and Policy*, p. 75.

<sup>87</sup> Chandrasekhar., p. 82-88.

<sup>88</sup> Chandrasekhar., p. 86-87.

avoid dividing India into “mutually antagonistic creeds and blocks.”<sup>89</sup> More than just changing social customs and regulating births, his program would include nutritional programs to address complications of malnutrition. It promoted trade schools and educational programs to “increase [the individual’s] earning capacity and lower the birth rate” as well as “emancipate women and make them economically independent” stressing the need for “social freedom for women in India.” Public health initiatives to tackle leprosy, tuberculosis, venereal diseases, and mental illness also featured in his plan.<sup>90</sup> Others espoused similar views. Economist Dwarkanath Ghosh called for something “more effective and also calling for less heroic sacrifice on the part of the normal man than almost complete abstinence” in his 1946 *Pressure of Population and Economic Efficiency in India*. Ghosh prioritized contraceptives as “an important aid” which would “relieve married couples of the haunting fear of unwanted children,” not only limiting the number of births, but their spacing as well. In the following pages, he made a case for the “positive morality” of birth control and bemoaned that political and social pressure made it difficult for an Indian birth-control movement to flourish.<sup>91</sup>

Chidambara Chandrasekaran, the one of the only other Indian demographers of this period, also expanded on questions of population control in the wake of the war. On the advice of RA Fisher, the famed British statistician, Chandrasekaran was advanced to a full professorship in Statistics at the Hygiene Institute in 1945. He undertook three key population studies with his new office: a report on “Some Aspects of Parsi Demography,” a fertility study on “Reproductive Patterns of Bengalee Women,” and a methodological study on measuring vital statistics. Of

---

<sup>89</sup> Chandrasekhar., p. 88-89.

<sup>90</sup> Chandrasekhar, *India’s Population.*, p. 89-98.

<sup>91</sup> Dwarkanath Ghosh, *Pressure of Population and Economic Efficiency in India* (New Delhi: Oxford University Press, 1946)., p. 105-109.

these, the “Reproductive Patterns” piece was perhaps the most significant for the time; his findings clearly demonstrated that rising wages and industrialized economies led to reduced fertility. By comparison, just a few miles away from the urban areas with reduced fertility, little progress in lowering birth rates had been made; India would need a specific policy to incentivize rural populations to change their reproductive behaviors.<sup>92</sup> The idea that development would reduce fertility had once been theory and now had some statistical backing, but evidence suggested that relying on development alone to reduce fertility would be ineffective in rural areas. If India wanted to reduce population growth, it would need a population policy for rural areas. Chandrasekaran would continue working on advancing population studies from a data perspective after the war, though he would take a year in 1947 to attend Johns Hopkins University on a Rockefeller Foundation scholarship to add a Masters in Public Health to his already impressive credentials.<sup>93</sup>

Post-war economists voiced similar concerns about population hindering the raising of standards of living. Bimal C. Ghose, a London-educated economist and member of the Congress Party (and later Praja Socialist Party) in the Lok Sabha, stated as much in his 1945 *Planning for India*, a reflection on the suggestions of the 1944 “Bombay Plan” a fifteen year plan proposed by Indian industrialists in 1944 to develop India’s economy; the Indian government loosely adopted many of its suggestions after independence.<sup>94</sup> In it, Ghose called it “imperative for [India] to develop our economy to ... assure to our masses the minimum comforts of life.”<sup>95</sup> He noted

---

<sup>92</sup> Chandrasekaran, *An Autobiography*, p. 71-80.

<sup>93</sup> Chandrasekaran, *An Autobiography*, p. 86-87.

<sup>94</sup> “Ghose, Shri Bimal Comar.” Lok Sabha Members’ Bioprofile.

[http://164.100.47.194/loksabha/writereaddata/biodata\\_1\\_12/1179.htm](http://164.100.47.194/loksabha/writereaddata/biodata_1_12/1179.htm). And Ghose, Bimal C. *Planning for India*. (1945), p iii.

<sup>95</sup> Ghose, Bimal. *Planning for India*. (1945), p. 12.

issues with food security, as “the great majority of the population actually exists on one meal a day,” basic necessities like clothing, housing, education, and medical care, with the “largest bulk” of the population depending on traditional medicine, reflecting India’s “backwardness” and highlighting population’s role in exacerbating these issues or delaying solutions to them.<sup>96</sup> *Planning for India* argued that worrying over food security meant little in the immediate future, as “the possibilities of increasing the [crop] yield with the help of science and technology are much greater.” In a direct rebuttal to Mukerjee’s earlier work on food planning, he insisted that “the potentialities of Indian agriculture” could adequately “support a much larger population than 400 millions” and that developing industry would enable India to “obtain in exchange for our industrial products food from abroad” much like Great Britain did.<sup>97</sup> Clearly, not all economists agreed that agricultural production stood as the first barrier to population growth and development.

While a few economists pushed back against the idea that population growth held inherent risks, others insisted all the more vehemently that population was an essential - if not the single most important - factor in developing a national economy. Radhakamal Mukerjee stressed several solutions in his 1946 *Races, Lands, and Food* that mirrored his earlier concerns about population growth and development, but dealt primarily with food security and emigration as a solution. His explicitly anti-colonial argument hinged on the concept that a global peace in the wake of the Second World War “must be founded on global justice if it is to be enduring.”<sup>98</sup> To that end, Mukerjee advocated a global plan for development that involved a comprehensive plan of agricultural improvement and the settling of “open lands” by emigrants from Asia. He

---

<sup>96</sup> Ghose. *Planning for India.*, p. 15-25.

<sup>97</sup> Ghose., p. 84-85.

<sup>98</sup> Radhakamal Mukerjee, *Races, Lands, and Food* (New York: Dryden Press, 1946)., p. 9.

suggested settling the underpopulated parts of the globe, especially in the colonial domains of the European powers, as a “doctrine of Asiatic *Lebensraum*” and demanded the elimination of racial barriers to migration, like the White Australia Policy.<sup>99</sup> This mirrored his call years earlier for “a more liberal emigration policy” at the imperial level, calling Indian emigration “essentially an Imperial problem.”<sup>100</sup> He decried policies that excluded Asians, especially Indians and Chinese, from immigration and landowning in various countries, including the United States, Soviet Union, and European colonial powers and their dependencies and territories.<sup>101</sup> Freedom of movement, coupled with self-rule and improved and expanded agricultural practices, would serve to diminish inequalities of population density and standard of living, all of which were necessary “for the sake of lasting peace.” This plan served three of the key interests of India in this early period: it provided a mechanism for food security, it proposed that Indians be allowed increased privileges to move within the Empire and around the world, and required that the European powers treat India, and all Asian countries, as equal voices in decisions of resources and manpower. Mukerjee was not alone in seeing emigration as a solution to population pressures; demographer Sripati Chandrasekhar touched on the subject himself several works, and Mukerjee’s publisher thanked Chandrasekhar for his help with *Races, Lands, and Food*.<sup>102</sup>

Dwarkanath Ghosh, another economist, with the Indian Council of World Affairs published *Pressure of Population and Economic Efficiency in India* in 1946 to explain to “the intelligent layman” that “the size and growth of our population will play a large part” in India’s immediate future.<sup>103</sup> He repeatedly highlighted the negative effects of “pressure of population:”

---

<sup>99</sup> Mukerjee., p. 6-9.

<sup>100</sup> Mukerjee, *Food Planning for Four Hundred Millions.*, p. 203.

<sup>101</sup> Mukerjee, *Races, Lands, and Food.*, p. 73-74.

<sup>102</sup> Mukerjee., p. i.

<sup>103</sup> Ghosh, Dwarkanath. *Pressure of Population and Economic Efficiency in India.* (1946), p. iii.



on agriculture, nutrition, land ownership, and industry.<sup>104</sup> Economists had ample theoretical connections to implicate growing population in so many of the social and economic ills in India, and many took great efforts not only to argue these points, but to popularize them in media aimed at the general public. Economic planning and industrial and agricultural development featured prominently in their proposed solutions to India's low standards of living. Often, economists proposed that a socialist government be responsible for this development. Some, especially socialists like Ghose, even felt that population growth was not a bad thing for India, as crop yields and employment could be increased faster than population, though it was far from clear in 1947 whether that would prove true.

Clearly, by the eve of India's independence, Indian students of population had largely - though not entirely - agreed on the need for a national population plan, but had little by way of a consensus about its methods. Calls for a population policy often connected economic development and population growth. Most agreed that economic and agricultural planning and improvement would create conditions to support a larger population at a higher standard living and that such standards would themselves lower fertility rates. However, many worried that population growth would outstrip material gains, resulting in *lower* standards of living, even with improved agriculture and industry. Other methods, like emigration, could not be sustained indefinitely or would be difficult to implement politically. Artificially reducing the fertility rate would make the standard of living problem easier to address as India developed. But even here demographers, politicians, and economists disagreed. Contraceptive methods aggravated conservatives, including many prominent political leaders, and faced the same criticisms of

---

<sup>104</sup> Ghosh, *Pressure of Population and Economic Efficiency in India*. p. 36-60.

impracticality and political difficulty. Without an independent government and more recent statistics, the actual details of implementation and the actual character of an Indian population policy remained largely theoretical.

The groundwork for concrete policies was also being laid in the postwar years, however. In 1946, the Bhore Committee published its full report: a survey of the current health situation of India, and recommendations for future development. The report did not paint the current situation in a flattering light; it raised criticisms of food shortages, inaccuracies of data, and inadequacy of health administration and infrastructure.<sup>105</sup> Among its many suggestions, the report worried that “in the absence of certain natural checks such as famine and disease” on India’s population as a result of a developed economy and social welfare programs, “the growth of population in India will become an increasingly serious problem.” This problem could be prevented by three main methods: emigration, increasing production of necessary resources, or by reducing population growth. The Committee wasted little time on the first two options; emigration looked to be impeded by international prejudices, and increasing production was “only a temporary expedient” as uncontrolled growth “must... outstrip the productive capacity of the country.”<sup>106</sup> Only reducing the rate of population growth remained as an option.

On this front, the report offered several suggestions. It called for an increased minimum age of marriage for girls to at least 16 and an increase in standards of living, which would naturally suppress fertility. Intentional family limitation, on the other hand, was considered as a risky option, though “the only method which is likely to be effective.” While the report listed a

---

<sup>105</sup> Bhore Committee. “Report of the Health Survey and Development Committee.” Vol. 1. Government of India Press: Calcutta, 1946. p. 35, 54, 153, 158.

<sup>106</sup> Bhore Committee. “Report of the Health Survey and Development Committee.” Vol. 1. Government of India Press: Calcutta, 1946. p. 483.

few reasons that birth control could be a desirable method, it made a lengthy argument against it at the same time. The report worried that birth control would result in “Conduct divorced from responsibility” - increased “pre-marital and extra-marital sex relationships” that “may seriously threaten the sanctity of home life.” More worryingly, the Committee stressed that “the more successful and intelligent sections of the community” would use contraceptives more, while the “improvident and mentally weak” as well as those with congenital defects would not, leading to “a marked fall in the rate of growth of the more energetic, intelligent, and ambitious sections of the population, which make much the largest contribution to the prosperity of the country.”<sup>107</sup> In other words, only the wealthy and intelligent would use contraceptives, and India would soon be overrun with undesirables. Similarly, the report included proposals for a genetic population policy, or at least investigations of heredity with the aim of “improving the future composition of the community.”<sup>108</sup> However, the report only unanimously endorsed a government-sponsored contraceptive campaign on health grounds, “when childbearing is likely to result in injury to mother or infant.” Contraception for economic reasons was not fully supported, and some committee members worried that the state would alienate religious oppositions.<sup>109</sup>

By contrast, the Indian National Planning Committee, headed by Jawaharlal Nehru, released a competing report from the Sub-Committee on National Health in 1947. Where the Bhore Committee had worried about the negative impacts of birth control, the National Planning Committee embraced contraception as a necessity in reducing fertility as well as preventing

---

<sup>107</sup> Bhore Committee. “Report of the Health Survey and Development Committee.” Vol. 1. Government of India Press: Calcutta, 1946. p. 484-487.

<sup>108</sup> Bhore Committee. “Report of the Health Survey and Development Committee.” Vol. 1. Government of India Press: Calcutta, 1946. p. 488.

<sup>109</sup> Bhore Committee. “Report of the Health Survey and Development Committee.” Vol. 1. Government of India Press: Calcutta, 1946. p. 487.

infant mortality resulting from over-frequent pregnancies. Moreover, it called for research into an inexpensive, safe, and effective contraceptive that the State would then make available as widely as possible.<sup>110</sup> The panel appointed by the colonial government had argued against it, but the pro-independence committee had embraced the role of birth control in public health.

## **THE END OF BRITISH RULE**

British rule in India ended on August 15, 1947. Part of the transition involved the Partition of India - the splitting of the country into two separate Dominions, a majority Hindu India and mostly Muslim Pakistan. The resulting mass migrations and violence have a lengthy and troubled legacy in both countries. This final split came about as the result of British statistical estimation, what historian Joya Chatterji has called a “hastily and ignorantly drawn line.” The states of Assam, Punjab, and Kashmir were all split based on surveys of religious majorities, and considerations for the border lines often ignored local communities or even national concerns.<sup>111</sup> This dark and impactful, if crude, use of statistical and demographic data had tremendous impact on India post-independence. It did not, however, dampen the enthusiasm among Indians for population research.

Population studies before India’s independence came from a variety of backgrounds - statisticians, demographers, economists, birth control advocates, and public health workers. Their motivations were just as diverse, from anxieties about the economy and food supply, to cultural and religious biases (especially between Hindus and Muslims), to socialist leanings. At least a few even supported eugenical studies or policies - like Chand or Chandrasekhar. Early

---

<sup>110</sup> National Planning Committee. “National Health: Report of the Sub-Committee.” Vora & Co. Publishers Ltd.: Bombay, 1947. p. 85.

<sup>111</sup> Chatterji, Joya. “The Fashioning of a Frontier: The Radcliffe Line and Bengal’s Border Landscape, 1947-1952.” *Modern Asian Studies*, vol. 33, no. 1, Feb. 1999., p. 242.

debates had centered around whether there was a “population problem” and if so, by what measure. The reactions to food security were shaped by India’s recurring experience with famine and disease. Socialist economic planning, social welfare systems, emigration policies, and contraceptive campaigns all featured as commonly proposed solutions to the threat of growing population, and all required India’s freedom from British rule. While family planning or a formal population control program remained entirely theoretical without an independent India, the concern clearly existed, and Indians were already weighing the merits of a population policy. At the eve of independence, overpopulation - or its inevitable risk - was far more widely accepted, and debates instead focused on potential solutions to reduce population growth. As the following chapters will show, family planning became a much larger part of Indian solutions after independence.

## **CHAPTER 2 - AMERICAN PERSPECTIVES ON INDIA**

In 1950, the Dominion of India became the Republic of India, marking India’s full independence from the United Kingdom. In 1951, India published the first Five Year Plan, the outline of the goals of India’s new socialist government under Prime Minister Jawaharlal Nehru, which included the beginnings of a family planning program. That same, Kingsley Davis published his *Population of India and Pakistan*, the first comprehensive volume on the population situation in India from an American demographer. The book reinvigorated American interest in the population problem in India at the right moment; the release of the Indian government’s official support for family planning in 1952 and the results of the 1951 Census the following year simultaneously raised hope for population control advocates and fear of growth even beyond expectation. While American interests had predated both India’s independence and

Davis' publication, the 1950s saw a serious uptick in American money and expertise - through private organizations, the UN, and later the US government itself - in the Indian situation with an eye specifically towards influencing and advancing India's population policy. This influence took two main avenues: funding for research, education, and aid programs in India from organizations like the Population Council or the Ford Foundation and in the scientific literature American demographers wrote on India. While the number of Indian authors on the subject vastly outnumbered the Americans - especially with regards to specific policy points - the American demography community played an important role in influencing many prominent Indian demographers and their work.

American social scientists, though interested and influential in shaping population policy, had motivations quite different from Indian motivations, and only become seriously involved by invitation after India had begun its family planning program. Where Indians were concerned about standards of living in India, Americans - both scientists and policymakers - worried about the spread of communism and global stability and especially the United States' global position of power after the Second World War.

Why would the US involve itself with aid to a nominally socialist government in the midst of the Cold War? The answer is two-fold. American scientists were not synonymous with the government, which did drag its feet about involvement in population control programs until President John F. Kennedy took office in 1961. As such, many of these scientists felt the benefits of preserving peace and American supremacy - as well as the happy side-effect of better lives for Indians - would result from reducing population growth. To many Americans, and especially the demographers, it was a global problem that superseded political divisions. The other answer is

that the United States was competing with the Soviet Union for influence in India. Balancing aid between India and Pakistan was part of a delicate maneuver to keep the Soviets from cementing a powerful alliance with India.

This chapter traces the history of American interests in India's "population problems," from the 1930s through the 1960s. Demographers and policymakers had an interest in India even prior to independence, which translated into action on the part of private and international aid groups, and later the American federal government. American involvement included education programs, funding for studies, and help building institutions for research and family planning services. However, American involvement, from the private sphere or federal government, only supplemented Indian programs and came after India's initial push to tackle population growth. As this chapter will show, American scientists were interested in India's population for very different reasons than the Indian government.

## **ORIGINS OF CONCERN**

American concerns about Asia, and India specifically, predate *The Population of India and Pakistan*. American demographers had many reasons to be concerned about global population growth. Demography had slowly coalesced from a number of academic backgrounds in the early years of the twentieth century; there was no "firm boundary" that separated statisticians from contraceptive activists or economists from eugenicists. Wide-ranging interest in population thought drove interest in a field to study these effects. Perhaps no better indicator of the field's eclectic background exists than the initial roster of the Population Association of America, founded in 1931. That list included birth control activists from the American Birth Control League, a professor of sociology and an immigration restrictionist, a geographer in the

Department of Agriculture, an actuary for the Metropolitan Life Insurance Company, a eugenicist, and others. Some of these early members were already affiliated with groups dedicated to studying population and its effects, such as Pascal K. Whelpton, then an agricultural economist and associate director of the Scripps Foundation for Research in Population Problems.

<sup>112</sup> The Scripps Foundation was the first organization created solely to study population, and its founding director, Warren Thompson, counted among the most influential demographers of the day. Thompson received his PhD from Columbia University in New York in 1915 with a dissertation titled “Population: A Study in Malthusianism.” From there, he founded the Scripps Foundation with the help of E.W. Scripps, a newspaper magnate concerned about population in the Far East. Thompson served as director until 1953, until replaced by his close colleague Whelpton, and published several important works in the intervening years that contributed significantly to American concerns about population growth.<sup>113</sup>

Among Thompson’s most famous works were *Danger Spots in World Population* (1929) and an article titled “Population” - arguably the most significant piece of demographic literature in the twentieth century - in the *American Journal of Sociology* in the same year. In “Population,” Thompson laid out the beginnings of the theory of demographic transition, that decreased mortality without a drop in birth rates would lead to ballooning population in some countries. In 1945, Frank Notestein, another famous figure in the PAA and founder of the Office for Population Research at Princeton University (OPR), would expand upon this theory, specifically examining the effects of modernization on lowering death rates far before birth rates

---

<sup>112</sup> Hodgson, Denis. “The Ideological Origins of the PAA” p. 1-2.

<sup>113</sup> Kiser, Clyde V. “Obituary: Warren S. Thompson 1887-1973.” *Population Index*, vol. 40, no. 1 (Jan 1974) pp 21-23.



similarly fall.<sup>114</sup> Interestingly, one of the “urgent problems of the next few decades” Thompson identified was “the readjustment of land holdings demanded by” the growing populations; “northwestern Europe,” with its declining rates of increase, might have to cede land “to eastern and southern Europe and . . . parts of Asia.”<sup>115</sup> This paper’s significance lay in two places. First, it laid out a theory about the relations between population growth and economic factors. In countries like Japan - those developing “modern industry and sanitation” with high rates of birth and death - economic and health factors would lower death rates without necessarily seeing a decline in births, meaning population would start to swell and thus demand more resources and land. Countries in Thompson’s “Group A” had lower birth and death rates, such that their rates of natural increase were slowly dropping, and included “practically all of Europe” from Germany west, and north of Italy, including countries “largely settled by peoples emigrating from this area in the last three hundred years” - read, European settler colonies.<sup>116</sup> These countries risked losing the most to uncontrolled population growth in other countries, as growing countries like Japan, India or China “feel the impulse to expand” and upset the land-population-resource balance. America, as one of the countries already industrialized and in moderate control of its population had a stake in avoiding conflict by encouraging control of population growth abroad.<sup>117</sup>

Thompson’s other work from 1929 expanded upon concerns of conflict due to population. *Danger Spots in World Population* built on the same ideas, the concept of “differential pressure of peoples on their resources” as a cause of “conflict between nations.”<sup>118</sup>

---

<sup>114</sup> Notestein, Frank. “Population: the long view.” in Schultz, TW, ed. *Food for the World*. Chicago, Illinois, University of Chicago Press. (1945) p. 36-57.

<sup>115</sup> Thompson, Warren S. “Population.” *American Journal of Sociology*, Vol 34, No 6. (May 1929) p. 959.

<sup>116</sup> Thompson, Warren S. “Population.” p. 959-962.

<sup>117</sup> Thompson, Warren S. “Population.” p. 975.

<sup>118</sup> Thompson, Warren S. *Danger Spots in World Population*. (1929), p. v.

In the book, Thompson displayed some modicum of prescience when he identified Japan, Italy, and Germany as high-risk countries - those with a growing population and a need for more resources - that could lead to war.<sup>119</sup> In the wake of the Second World War, when global stability became one objective of the western world, population pressure must have seemed like a natural enemy in retrospect. Thompson published again after the war, this time a book titled *Population and Peace in the Pacific* in 1946, demonstrating a continued concern for this population-resource dynamic that created international tensions. Indeed, a strain of Malthusian-inspired - often called neo-Malthusian - writing underwent something of a renaissance in the wake of the Second World War.<sup>120</sup>

Thompson was not alone in his concerns over resource dynamics and the role population played - and would play - in international politics. William Vogt, ecologist and conservationist, wrote that Americans “must, in human decency as well as in self-protection, use our resources to help less well-endowed peoples” in his 1948 *Road to Survival*.<sup>121</sup> His overarching argument involved worries about the scarcity of resources in the face of growing population and of the “carrying capacity” of the Earth, “its ability to provide food, drink and shelter to the creatures that live on it.” Erring on the side of the sensational, he warned that “at least three-quarters of the human race will be wiped out” by war, forced by need of resources.<sup>122</sup> Vogt’s book married post-war anxiety over atomic weapons to belief that population pressure would lead to war,

---

<sup>119</sup> Thompson, *Danger Spots in World Population*, p. 31, 113, 210, 235.

<sup>120</sup> Robertson, Thomas. *The Malthusian Moment: Global Population Growth and the Birth of American Environmentalism*. (2012) p. 36.

<sup>121</sup> Vogt, William. *Road to Survival*. (1948), p. xiv.

<sup>122</sup> Vogt, *Road to Survival*, p. 16-17.

resulting in the conviction that unless population growth were halted, Earth may well be destroyed by “man’s destructive methods of exploitation” or by violence.<sup>123</sup>

Vogt also made an important insight in a preface to *Hungry People and Empty Lands*, a 1946 book by Sripati Chandrasekhar, an Indian demographer. While the demographic community had adopted the concepts of population-resource conflicts and the risks of the demographic transition in growing populations, Vogt stressed a goal for population policy that was likely to find friends in foreign policy circles: preventing the spread of communism. In the preface, Vogt warns “us of the free world” to remember that the author and his subject made up the third of the globe’s population not yet aligned to “either the Kremlin or Democracy.” The push to reduce or control global population growth was not simply a humanitarian mission, nor was it a way to avoid armed conflict; the improvement of the lives of these millions could “determine the very survival of our children” in the global struggle between communism and capital-D Democracy.<sup>124</sup> Similarly, Kingsley Davis stated that the goal of population policy should be “greater real income,” improvement in the material lives of individuals, rather than pursuits of national power as in the Soviet Union or Nazi Germany.<sup>125</sup> Americans had an opportunity to help people around the globe and, by helping them, keep them out of the pockets of the Soviets.

In the aftermath of a world war and with the United States’ position as a superpower, demographers in the US saw the potential risks of population growth around the globe as a threat to global stability. The population-resource dynamic adequately explained why the Axis powers had been so aggressively expansionist, and avoiding future conflict required more equitable

---

<sup>123</sup> Vogt, *Road to Survival*, p. 31.

<sup>124</sup> Vogt, William in Chandrasekhar, Sripati. *Hungry People and Empty Lands*, p. 5.

<sup>125</sup> Davis, Kingsley, *Population of India and Pakistan*. (1951), p. 221.

distribution of resources and controlling population growth. Many proposed solutions found common benefits in this goal; better resource distribution leads to higher standards of living which leads to decreased birth rates and so a stabilizing population. With these benefits, many millions could be swayed in favor of capital-D Democracy, rather than turn to communism to address resource shortages or a perceived lack of national power.

### **POPULATION POLICY IN INDEPENDENT INDIA**

Davis' first major entry into the subject seemed to have had an impact on India's various planning commissions. After he published *The Population of India and Pakistan* in 1951, he recalled taking a trip to India, to "see whether what I said was correct." During his visit, he met with members of the Commission on Economic Planning, who were weighing the potentials of birth control, and noted that they kept several copies of his book. The Commission members asked if birth control would lead to "the same immorality that Kinsey showed" in Americans, referring to Alfred Kinsey's infamous 1948 *Sexual Behavior in the Human Male*.<sup>126</sup> However, the final recommendations of the First Five Year Plan differed slightly from the potential population policies Davis laid out in 1951. It should be noted that these early American works explored the relationship between variables, mostly economic growth and fertility, and the impacts of some proposed solutions, like birth control or emigration. Davis, and later Coale and Hoover, did not necessarily expect that they could dictate policy to India. However, some did attribute changes in India policy to their work and familiarity with American literature. Philip Hauser, for instance, saw India's 1954 adoption of a vital registration system as based on his area

---

<sup>126</sup> Davis, Kingsley. Interview with Kingsley Davis. Interview by Jean van der Tak. Transcript, May 1, 1989., p. 16.

sampling process.<sup>127</sup> But few denied the importance, even decades later, of Davis' work as foundational for American understanding of the Indian situation.

*The Population of India and Pakistan* examined several suggestions on the character of a population policy for India. In it, Davis criticized the agricultural reformers who held that increasing crop yields and rationing would eliminate any need for population control. He conceded that some of their measures would produce enough food to feed India's population in 1950, "but in the long run (and not a very extended "long run") [this] solution is no solution at all." Almost verbatim from Malthus, Davis argued that "as the food situation improved, the population would grow even faster" and soon "the food supply would again be deficient." Even defaulting to a "totalitarian Puritanism" that strictly controlled food production and consumption would have the end result not "so that Indians could eat better, but rather so that there could be more of them."<sup>128</sup> If raising the means of subsistence alone was not enough, India must do something to slow its growth.

Davis did not shy away from the realities of his suggestions; "Demographically speaking, there are only three ways of [slowing growth] - by raising the death rate, encouraging emigration, or lowering the birth rate." While he quickly noted that India's objective must be "to stop population growth before a rise in mortality automatically stops it," he emphasized that "a *temporary* rise in mortality would not necessarily represent a regression in the *total* standard of living." He did not advocate for an active policy to raise mortality but saw such a situation - like

---

<sup>127</sup>Hauser, Philip. Interview with Philip Hauser at Dr. Hauser's home. Interview by Jean van der Tak. Transcript, November 12, 1988, p. 52.

For examples of his techniques that were adopted by the Indian government, see Hansen, Morris H., and Philip M. Hauser. "Area Sampling-Some Principles of Sample Design." *The Public Opinion Quarterly* 9, no. 2 (1945): 183-93. <https://www.jstor.org/stable/2745221>. and Hauser, Philip M. "Research Potentialities in Burma." *Population Index* 19, no. 4 (1953): 260-72. <https://doi.org/10.2307/2731066>.

<sup>128</sup> Davis, *Population of India and Pakistan*, p. 222.

“a sudden epidemic that quickly killed 50 million people... if its incidence were highest in the non-productive ages” - could dramatically improve the “average real income of the remaining population” and make possible “social reforms that would otherwise be more difficult.” He worried that public health initiatives, while admirable, would worsen the population problem; “a policy of reducing deaths but not reducing births can lead to an unbalanced situation.” He noted that the policy to reduce births could be a private one, as in the US, but without a policy of family limitation either publicly promoted or privately accepted, “Public health success would thus defeat itself.”<sup>129</sup> Emigration could work to reduce population pressure, but without corresponding reductions in fertility “it seems only a question of time until they will overflow the land and sink back to the usual Indian standard.” Such a temporary relief was “a palliative rather than a solution,” and without the social and technological changes that cause a drop in fertility, “the rest of the world would be filled with Indians and Pakistanis.”<sup>130</sup> Birth control offered more lasting success to India, he argued. A natural decrease would follow an Indian industrial revolution; “industrialize at once and thus create overnight the conditions that will cause people voluntarily to limit their fertility.” However, more practical and immediate results would likely follow a campaign to “bring birth control immediately to the people,” though Davis allowed that the two approaches were not mutually exclusive.<sup>131</sup> Both faced obstacles - the lack of a “perfected” contraceptive, moral and religious opposition to birth control, and the heavy social and monetary costs of rapid industrialization - but lesser options would not succeed on their own. India and Pakistan, Davis stated, “must necessarily incorporate planned parenthood” into plans to improve standards of living. He stopped short of the apocalyptic - “unwillingness to

---

<sup>129</sup> Davis, *Population of India and Pakistan*, p. 223-224.

<sup>130</sup> Davis, *Population of India and Pakistan*, p. 224-225.

<sup>131</sup> Davis, *Population of India and Pakistan*, p. 226.

[reduce fertility] will not necessarily result in perpetual poverty ... or in absolute catastrophes” - but tried to emphasize that any prudent course of action must include a population policy, including birth control. Abstaining would result in “greater poverty than would otherwise be the case” and Davis claimed that “exactly this sort of comparative loss that all policy, including population policy, is designed to avoid.”<sup>132</sup> In his estimation, birth control was a necessary part of the program to improve life in India, alongside temporary emigration policy and rapid, country-wide industrialization.

Ansley Coale and Edward Hoover followed Davis in the OPR’s work on India with their 1958 *Population Growth and Economic Development in Low-Income Countries*. Their work did not make specific policy recommendations, but did serve to further entrench the idea that economy and population were intimately connected. Reduced population growth rates had “immediate economic advantages.” However, they also criticized the strictly Malthusian camp for “divert[ing] attention from the relative merits of feasible alternative patterns of population development.” Hoover and Coale worried that vocal pessimism about the population situation did more harm than good, as each incorrect prediction only emboldened skeptics who saw no reason to reduce population, seemingly confirming that the demographers knew nothing.<sup>133</sup> Indeed, the misunderstanding between those adamantly pro-control or anti-control irritated Ansley Coale for years; in later life, he recalled that many had missed the point that things in India would not be a disaster without fertility reduction and rejected the Malthusian label. Instead, it “just would have been a lot better -- and still would be -- if they would reduce fertility.” He even regretted including “Population Growth” in the title of the book, as he argued

---

<sup>132</sup> Davis, *Population of India and Pakistan*, p. 227-231.

<sup>133</sup> Coale, Ansley J., and Edgar Malone Hoover. *Population Growth and Economic Development in Low-Income Countries: A Case Study of India’s Prospects*. Princeton, N.J: Princeton University Press, 1958., p. 332-334.

“growth is peripheral” and not the singular determinant of economic development.<sup>134</sup> Still, the main thrust of the book equated high fertility with slower economic growth in most circumstances.

These two works formed part of a development in conceptions of the demographic transition theory. The demographic transition, as laid out in 1945 by Notestein, implied that economic development led first to lower mortality and then to lower fertility. Davis, Coale, and Hoover found the inverse connection also had truth to it, as high fertility would negatively impact economic growth. Therefore, the economy depended on fertility and fertility depended on the economy; any plan of action must address both variables.

Armed with this new theory, American demographers weighed the potential responses. American demographers worked to build international relationships through professional organizations and through education programs. Indian organizations, like the Indian Institute for the Study of Population founded by Sripati Chandrasekhar (himself a student of Columbia University in New York), invited Americans to serve on their advisory committees, while American and international organizations looked to recruit aspiring demographers from around the world, and specifically in India.

International organizations facilitated communication between American and Indian demographers in this period. The International Union for the Scientific Study of Population (IUSSP) had several Indian members at its reconstitution in 1947, including Mukherjee, Chidambara Chandrasekaran, Chand, and K.C.K.E. Raja.<sup>135</sup> Ansley Coale considered the IUSSP

---

<sup>134</sup> Coale, Ansley. Interview in Dr. Coale’s office. Interview by Jean van der Tak. Transcript, May 11, 1988., p. 145, 160.

<sup>135</sup> Conception, Mercedes. *The IUSSP in History*. International Union for the Scientific Study of Population, 1985. [https://iussp.org/sites/default/files/The\\_IUSSP\\_in\\_History.pdf](https://iussp.org/sites/default/files/The_IUSSP_in_History.pdf), p. 41.



a valuable connection between western demographers and their counterparts in less developed countries, and recalled that in later years Indians were the second-largest nationality in the organization's membership, second only to the US.<sup>136</sup> The United Nations Population Commission, established in 1946, also served as a valuable staging ground for Americans to organize and fund programs in underdeveloped countries. Programs like *The Determinants and Consequences of Population Trends* (1953), funded and directed by the UN Population Commission, involved the work of many international demographers, including Indians like Chidambara Chandrasekaran.<sup>137</sup> Philip Hauser and Kingsley Davis served as first and second US Representatives to the Commission, Hauser from 1947-1951 and Davis from 1954-1961. Davis recalled that "family planning" as a term didn't quite catch on during his tenure, as the Commission preferred "birth control." For a program with "remarkably little politicization," Davis reflected that they had managed to work with a contentious topic rather well.<sup>138</sup> Hauser reflected similarly; "[population control] was sensitive, but I would not agree that it could not be brought up... it seems to me we raised questions about population control during the first five years." He felt that population control's later sensitivity stemmed from "changes in the Administration and an increased voice of the right in the United States."<sup>139</sup> Still, the UN and its funding opened doors for demographers around the world, and the Demographic Training and

---

<sup>136</sup> Coale, Ansley. Interview in Dr. Coale's office. Interview by Jean van der Tak. Transcript, May 11, 1988., p. 152.

<sup>137</sup> Hauser, Philip. "The Early Years of the Population Commission." *Bulletin of the United Nations Population Division*, no. 19/20 (1986): 2-5., p. 2-5. United Nations. *The Determinants and Consequences of Population Trends; a Summary of the Findings of Studies on the Relationships between Population Changes and Economic and Social Conditions*. Its Population Studies, No. 17. New York: United Nations, Dept. of Social Affairs, Population Division, 1953. <https://catalog.hathitrust.org/Record/002241804>.

<sup>138</sup> Davis, Kingsley. Interview with Kingsley Davis. Interview by Jean van der Tak. Transcript, May 1, 1989., p. 25.

<sup>139</sup> Hauser, Philip. Interview with Philip Hauser at Dr. Hauser's home. Interview by Jean van der Tak. Transcript, November 12, 1988., p. 48-49.

Hauser's sentiment echoes a common theme in historical writing; much has been written on the impact of domestic American politics on the birth control movement around the world.

Research Centre in Bombay - one of its first and largest training centers - brought American expertise directly to India to research and train demographers there.

Perhaps the most significant of these international organizations, however, was the Population Council (PC), an offshoot of the Rockefeller Foundation tasked specifically to deal with population issues. John D. Rockefeller III founded the organization in 1952, after a meeting with a wide range of people interested in population problems, including demographers like Notestein, Davis, and Thompson.<sup>140</sup> Many prominent Americans worked with or in the PC. For example, eugenicist Frederick Osborn and demographer Frank Notestein were the foundation's first two presidents, and many prominent American demographers, like Dudley Kirk, who was Director of the Demographic Division of the Population Council from 1954 to 1967, were involved with the organization in other roles.<sup>141</sup> The PC supported a number of programs, finding funding for research grants, fellowships, and graduate education. In 1958, the PC released *Population: an International Dilemma*, a summary of the a series of roundtable discussions over the previous two years.<sup>142</sup> It decried high fertility in less developed countries, saying that it “tends to impede national movements for promoting education and the acquisition of new skills” as well as negative effects on personal and public health and family life.<sup>143</sup> The report addressed many things, including a plan of action to develop an acceptable and effective birth control program that would be adopted internationally.<sup>144</sup> Part of this acceptability precluded certain

---

<sup>140</sup> Connelly, Matthew. “Population Control in India: Prologue to the Emergency Period.” *Population and Development Review* 32, no. 4 (2006): 629–67. <http://www.jstor.org/stable/20058922>. , p. 634.

<sup>141</sup> van der Tak, Jean. *Demographic Destinies: Interviews with Presidents and Secretary-Treasurers of the Population Association of America*. Vol. 1-From 1947 to 1960. PAA Oral History Project 1-Presidents. Population Association of America, 2005., p. 6, 115.

<sup>142</sup> Osborn, Frederick. *Population: An International Dilemma*. New York: Population Council, Inc., 1958., p. vii-ix.

<sup>143</sup> Osborn, *An International Dilemma*, p. 11.

<sup>144</sup> Osborn, *An International Dilemma*, p. 54-55.

techniques: abortion was “certainly not an acceptable means” though it was “widely used in time of crisis,” and sterilization was “at best a limited medical means.” Without other options, any program had to rely on “only partly effective and not easily accepted” methods, some of which “require materials out of reach of peasant populations” or “unusual self-control.”<sup>145</sup> To develop and advance these techniques, the PC concluded that “the United States with its wealth and great number of technical schools has a particular responsibility, which unfortunately it is far from meeting.”<sup>146</sup> Communication and education took first priority for the PC, followed closely by research, and the US needed to play a central role in it, and help advocate for contraceptives around the world. This shift from study to advocacy inspired many; Frank Notestein resigned as head of the OPR at Princeton in 1959 to become the PC’s second executive officer. This move to “an organization specifically set up to do something” by one of the world’s leading demographers inspired Donald Bogue to lean on the advocacy angle.<sup>147</sup> Though many would later count Bogue as a “forerunner in [international family planning]” Bogue himself credited those who had laid the groundwork - the demographers and birth control advocates, like Indian philanthropist Lady Rama Rau, an early financier of family planning clinics.<sup>148</sup> The spread of these organizations clearly inspired many demographers to look towards specific programs to reduce population growth.

Education was the first to be tackled; India needed its own body of demographers and Americans could train them. For example, in 1956 the United Nations had partnered with the

---

<sup>145</sup> Osborne, *An International Dilemma*, p. 56.

<sup>146</sup> Osborne, *An International Dilemma*, p. 60.

<sup>147</sup> Bogue, Donald. Interview during the PAA annual meeting. Interview by Jean van der Tak. Transcript, March 30, 1989., p. 48.

<sup>148</sup> Bogue, Donald. Interview during the PAA annual meeting. Interview by Jean van der Tak. Transcript, March 30, 1989., p. 43.

Indian government to establish the Demographic Training and Research Centre (DTRC), in Chembur, Bombay to train Indian demographers. The UN Population Commission assigned “a certain number of experts” - often American demographers - there for year-long terms, and the Population Council funded research positions there as well.<sup>149</sup> Kingsley Davis served on the UN Population Commission from 1954 to 1961 and helped direct many Americans to the DTRC.<sup>150</sup> Many prominent American demographers spent time in India as a result. Ronald Freedman, founder of the Population Studies Center at the University of Michigan in 1961, recalled that his two months there on a Population Council research trip in 1960 sparked his interests in the region.<sup>151</sup> Many prominent names appeared on the staff directory of the DTRC over the next few years: Henry Shryock was UN demographer there in 1957-1958, Donald Bogue followed him in 1958-1959, as well as many students.<sup>152</sup> Philip Hauser, first Director of what is now called the Population Research Center at the University of Chicago, recalled interest from the Ford Foundation and US government to provide fellowships for students from the Third World, where “there was practically nobody who could be called a demographer.” These fellowships, initially focused on Asia and Latin America, involved training students from abroad and sending them back to their home countries “to provide the basic data for policy, which they badly needed.”<sup>153</sup>

---

<sup>149</sup> Raja, K. C. K. E. “The Demographic Training and Research Centre, Chembur, Bombay.” In *The 6th International Conference on Planned Parenthood, Report of Proceedings, February 14-21, 1959, Vigyan Bhavan, New Delhi, India.*, 293–96. London: International Planned Parenthood Federation, 1959. <https://www.popline.org/node/475329>, p. 293-296.

<sup>150</sup> Davis, Kingsley. Interview with Kingsley Davis. Interview by Jean van der Tak. Transcript, May 1, 1989., p. 25.

<sup>151</sup> Freedman, Ronald. Interview at the Population Studies Center, U of Michigan. Interview by Jean van der Tak. Transcript, June 12, 1989., p. 73-75.

<sup>152</sup> Bogue, Donald. Interview during the PAA annual meeting. Interview by Jean van der Tak. Transcript, March 30, 1989., p. 41-42.

and Shryock, Henry. Interview at Dr. Shryock’s Home. Interview by Jean van der Tak. Transcript, February 5, 1988., p. 86.

<sup>153</sup> Hauser, Philip. Interview with Philip Hauser at Dr. Hauser’s home. Interview by Jean van der Tak. Transcript, November 12, 1988., p. 40-41.

Donald Bogue, who began his career under Whelpton and Thompson at Scripps and later joined Hauser as Associate Director of the PRC at Chicago in 1953, recalls training many prominent Indian students. He claimed that this had a sort of network effect, such that returning students would recommend the program at Chicago and so received “a large number of people from India.”<sup>154</sup> Freedman recalled “put[ting] a lot of emphasis on our Third World students going home.” In one case, he actually travelled with a recent graduate back to India, doing “a lot of table-pounding in many of these places to make sure these students were given an opportunity to do the work they were capable of doing.”<sup>155</sup> Dudley Kirk, a colleague of Notestein’s from the early days of the OPR and the Population Council’s Director of the Demographic Division from 1954-1967, noted that the Population Council aimed to send masters and PhD students back to the DTRC or to government or university positions in India.<sup>156</sup> Education formed a major pillar of the American program to turn the tide of population in India, and many prominent Indian demographers trained at American universities or under American professors at demographic training centers in India.

As the push for international advocacy increased in intensity, American demographers still carried on another important debate: what should population policy look like for the developing world? Tensions ran high on the subject; Hauser recalled a shouting match at an early PAA meeting in 1949 when Kingsley Davis “excoriated” the guest speaker, a Catholic priest, for

---

<sup>154</sup> Bogue, Donald. Interview during the PAA annual meeting. Interview by Jean van der Tak. Transcript, March 30, 1989., p. 46.

<sup>155</sup> Freedman, Ronald. Interview at the Population Studies Center, U of Michigan. Interview by Jean van der Tak. Transcript, June 12, 1989., p. 88.

<sup>156</sup> Kirk, Dudley. Interview at Dr. Kirk’s home, Stanford, CA. Interview by Jean van der Tak. Transcript, April 29, 1989., p. 123.

the Catholic Church's position on family planning.<sup>157</sup> Some, like Davis were quite pessimistic about the situation - he called "population being a function of economic development" the "usual mumbo-jumbo" - and strongly objected to any obstacles to reduce fertility in the developing world, eventually calling for direct family planning programs without waiting for socioeconomic changes to bring down birth rates.<sup>158</sup> Others, like Coale and Hoover, took a less apocalyptic view of the situation, but still held that reducing fertility would help. The complicated flux of domestic politics, changing theory, and an insistence on international appeal meant that programs to reduce fertility had to be careful about what they advocated. Family planning emerged here to as effectively equivalent to "birth control" - simple, cheap, effective, and acceptable - and Indian became the first country of concern to embrace the policy. American demographers flocked to the funding and opportunities in India to spread American expertise and encourage family planning programs in the absence of formal US government support.

## **THE US GOVERNMENT GETS INVOLVED**

1961 marked a turn in the tides for population control in India. India unveiled its Third Five Year Plan, with a dramatically increased budget of 50 crores (Rs. 500,000,000) for family planning programs. Indeed, the chapter of the plan that outlined the program - in previous years called simply "Health" - was now "Health and Family Planning."<sup>159</sup> That same year, the United States formed the Agency for International Development (USAID). The groundwork and funding existed now to support large scale family planning research, and the preceding decades of

---

<sup>157</sup> Hauser, Philip. Interview with Philip Hauser at Dr. Hauser's home. Interview by Jean van der Tak. Transcript, November 12, 1988., p. 57.

<sup>158</sup> Davis, Kingsley. Interview with Kingsley Davis. Interview by Jean van der Tak. Transcript, May 1, 1989., p. 18-19, 25. and Dennis Hodgson, "Demography as Social Science and Policy Science."

<sup>159</sup> "3rd Five Year Plan." Government of India, Planning Commission, 1961. <http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html>., Chapter 32, Section 60-64.

research had reaffirmed that high fertility was a hazard and something must be done to stop it, especially in developing countries like India.

In American circles, this trend towards activism for family planning, rather than strictly researching causes and effects of population trends, created a rift in demography. Some, like Hauser, felt this new push towards practicality violated or cheapened the scientific nature of demography. Others, like Bogue, however, saw it as a monumental responsibility. In his presidential address to the PAA in 1964, Bogue said that year marked “one of the great landmarks of social-science research progress.” Fertility control programs in Asia - specifically Pakistan, modern Bangladesh, Singapore, Malaya, Hong Kong, Taiwan, modern Sri Lanka, and to a lesser extent India - had “left no doubt that by planned intervention they had induced a downward change in the birth rate in high-fertility populations.” This “demographic breakthrough” was something of a revolution in the field, convincing demographers who only a few years earlier had “tended to hold the gloomy view that only a small miracle could save many nations from disaster because of rapid population growth” that a solution existed. 1964 marked, or so his title suggested, a shift “From Projection to Control” of population growth; demography had real potential to take an active role.<sup>160</sup> His endorsement built on the increased attention and funding the “population problem” was getting in the past few years.

Others, even population control advocates, were more hesitant to see family planning as part of demography proper. Philip Hauser, PAA president following Bogue in 1965, made distinction between “science” and “social policy.”<sup>161</sup> He urged demographers to consider the motives and realities of family planning in its impact on their work and for family planning

---

<sup>160</sup> Bogue, Donald J. “The Demographic Breakthrough: From Projection to Control.” *Population Index* 30, no. 4 (1964): 449–54. <https://doi.org/10.2307/2732225>, p. 449-450, 453-454.

<sup>161</sup> Hauser, Philip. “The Transition from High Fertility to Low Fertility”, 1965. p. 419.

activists to understand the central value of demography to their programs.<sup>162</sup> Though they depended on each other and should cooperate, demography and family planning were separate and distinct; one was science and the other was activism.

Neither Hauser's nor Bogue's address resolved the debate about the role of family planning in demography. Bogue recalled that, at the time, he "felt more like a demographer who was being punished for being an active family planner as part of his job." Still, he counted many prominent demographers among those "in the faith that something could be done" about population control; he mentioned Ronald Freedman and Frank Notestein by name.<sup>163</sup> Freedman, though admittedly "not as great an enthusiast and optimist as Don Bogue was" on family planning, still felt that the split between family planners and demographers was never "a real dichotomy."<sup>164</sup> Importantly, Bogue noted that "all of the professionals at the Population Council were of that philosophy," that is, that family planning was not distinct from the "real science" of demography.<sup>165</sup> Demographers who moved to these international aid organizations tended to see family planning not only as real science, but also as essential.

When Bogue started the official journal of the PAA, *Demography*, in 1964, using funds from the Ford Foundation no less, he heaped coal on the fire of this debate. The most infamous involved the 1968 issue of *Demography*, Volume 5, Number 2, "Progress and Problems of Fertility Control Around the World." On the cover, Bogue featured an inverted red triangle - the

---

<sup>162</sup> Hauser "Transition from High Fertility to Low Fertility", p. 427.

<sup>163</sup> Bogue, Donald. Interview during the PAA annual meeting. Interview by Jean van der Tak. Transcript, March 30, 1989., p. 47-48.

<sup>164</sup> Freedman, Ronald. Interview at the Population Studies Center, U of Michigan. Interview by Jean van der Tak. Transcript, June 12, 1989., p. 81.

<sup>165</sup> Bogue, Donald. Interview during the PAA annual meeting. Interview by Jean van der Tak. Transcript, March 30, 1989., p. 53.



symbol of India's family planning program.<sup>166</sup> Several articles in that issue spoke to the feeling of necessary and immediate action; for instance, Notestein called high fertility the "demographic crisis of the less developed world."<sup>167</sup> Many in the organization took issue with the focus on family planning and population control, seeing it as an attempt to take over professional demography groups by family planning advocates rather than "real" scientists.<sup>168</sup> Dudley Duncan, a PAA president, agreed that a good deal of the organization's membership felt that the PAA's "scientific role evidently yielded to advocacy" with such a move. In fact, that issue ended Bogue's tenure as *Demography's* first editor; Beverly Duncan, a colleague of Bogue's at Chicago as a Research Associate at the Population Research Center and wife of Dudley, took over and reversed many of Bogue's decisions, especially the focus on family planning articles.<sup>169</sup>

Even beyond questioning the boundaries of demography, some questioned the efficacy of family planning programs at all. Kingsley Davis, once an ardent proponent of family planning programs, criticized the assumption that family planning constituted population control. In a 1967 article "Population Policy: Will Current Programs Succeed?" he argued that, despite its many benefits - especially "freeing women from the need to have more children than they want" - family planning only implied regulation at the individual level; "What is rational in the light of

---

<sup>166</sup> Bogue, Donald. Interview during the PAA annual meeting. Interview by Jean van der Tak. Transcript, March 30, 1989., p. 58-59. and Bogue, Donald J. "The Demographic Breakthrough: From Projection to Control." and Bogue, Donald J. "How Demography Was Born." *Demography* 30, no. 4 (1983): 519-21. <https://doi.org/10.2307/2061803>.

<sup>167</sup> Notestein, Frank W. "The Population Council and the Demographic Crisis of the Less Developed World." *Demography* 5, no. 2 (1968): 553-60. <https://doi.org/10.2307/2060245>, p 553

<sup>168</sup> Glick, Paul. Interview at Dr. Glick's home. Interview by Jean van der Tak. Transcript, May 9, 1989., p. 129, and Hawley, Amos. Interview at Dr. Hawley's home. Interview by Jean van der Tak. Transcript, April 6, 1988. p. 244, and Duncan, Dudley. Interview at Dr. Duncan's home. Interview by Jean van der Tak. Transcript, May 3, 1989., p. 193

<sup>169</sup> Duncan, Dudley. Interview at Dr. Duncan's home. Interview by Jean van der Tak. Transcript, May 3, 1989., p. 192-194.

a couple's situation may be totally irrational from the standpoint of society's welfare."<sup>170</sup> He feared that "unthinking identification of family planning with population control is an ostrich-like approach in that it permits people to hide from themselves the enormity and unconventionality of the task." Still, Davis insisted that more was needed to effectively control population growth.<sup>171</sup> He was not alone in this; others saw family planning as insufficient, feeling that more directed - and coercive or compulsory - methods would be needed; China's One Child Policy became a focusing point for such critics. Years later, Davis stated that China had "taken seriously the motivation side" with its One Child Policy.<sup>172</sup> Hauser, though he found its methods "perhaps abhorrent," had to admit that China had been successful in reducing population growth.<sup>173</sup> Dudley Kirk called China the "outstanding example" in "effective population policy."<sup>174</sup> There was not a universal voice - Frank Notestein reportedly claimed that "Coercive measures to force contraceptive practice are more likely to bring down the government than the birth rate." - but many felt coercion was necessary.<sup>175</sup> Though these comments came in the late 1980s, they illustrate clearly that some saw family planning as too soft an answer to a pressing problem and that coercive methods - however morally distasteful - could achieve meaningful results.

The same year as Bogue's controversial final issue of *Demography*, Paul Ehrlich brought public attention back to population growth with his rather alarmist *Population Bomb*.<sup>176</sup> Not only

---

<sup>170</sup> Davis, Kingsley. "Population Policy: Will Current Programs Succeed?" *Science* 158, no. 3802 (1967): 730-39. <http://www.jstor.org/stable/1723056>, p. 736-737.

<sup>171</sup> Davis. "Population Policy: Will Current Programs Succeed?", p. 739.

<sup>172</sup> Davis, Kingsley. Interview with Kingsley Davis. Interview by Jean van der Tak. Transcript, May 1, 1989., p. 19-20.

<sup>173</sup> Hauser, Philip. Interview with Philip Hauser at Dr. Hauser's home. Interview by Jean van der Tak. Transcript, November 12, 1988, p. 51

<sup>174</sup> Kirk, Dudley. Interview at Dr. Kirk's home, Stanford, CA. Interview by Jean van der Tak. Transcript, April 29, 1989., p. 117.

<sup>175</sup> Coale, Ansley. Interview in Dr. Coale's office. Interview by Jean van der Tak. Transcript, May 11, 1988., p. 160.

<sup>176</sup> Ehrlich, Paul R. *The Population Bomb*. Rev. Rivercity, Mass: Rivercity Press, 1975., p. i-iii.

the burgeoning environmentalist movement, but also politics found population growth concerning. In his 1965 State of the Union address, President Lyndon B. Johnson said “I will seek new ways to use our knowledge to help deal with the explosion in world population and the growing scarcity in world resources.”<sup>177</sup> Even the President of the United States spoke in terms of the “population explosion.” Concern over population growth in American circles had boiled over and a new wave of demographers were turning their funding and talents to advocacy and activism in the world of population control, sparking new debates about the boundaries of demography as a science and questions of effective solutions. American interests and responses came from different points of concern, and were, at least publically, constrained by different political concerns.

## **CONCLUSION**

American involvement in India’s family planning program only began at the invitation of India’s government, after the initial planning and program had begun. It also cannot be overemphasized that American and Indian motivations for seeking to reduce population growth in India were radically different, even if their scientific communities collaborated to solve India’s “population problems.” While American research, funding, and education were invaluable to population scientists in India, the impetus to initiate a population policy and the design of the policies themselves were the products of Indian labor, not American suggestions. The involvement of private aid organizations, the United Nations, and later the US government all offered opportunities to support and influence India’s scientific community rather than supplant it. Indeed, some Indians enthusiastically embraced American ideas, but this does not mean all

---

<sup>177</sup> Johnson, Lyndon B. *Public Papers of the Presidents of the United States: Lyndon B. Johnson, 1965*. Vol. 1. Washington, DC: Government Printing Office, 1966., p 1-9.

Indian scientists blindly followed American advice, nor did the government, as the next chapter will demonstrate. Similarly, their motivations still differed significantly.

### CHAPTER 3 - POPULATION POLICY AFTER INDEPENDENCE

As India approached independence, and even afterwards, the subject of population played a central role in national politics. A majority of demographers and numerous economists and politicians, though not all, feared the consequences of continued population growth, especially in the 1940s, when considerable growth rates around two percent annually had been maintained for quite some time. From this concern came a number of solutions with varying ideological slants, though agricultural and land reform generally featured prominently, to prevent the recurrence of famine. Ultimately, the goal of any population policy was a better standard of living for Indians across the board. As a result, most proposed solutions involved some degree of economic and agricultural planning to secure a steady food supply and provide stable incomes to millions, while developing industry in India.

Many population scientists, however, took population policy further, seeking to slow, stop, or even reverse population growth. The realities of independence tempered earlier proposals, and brought others to the forefront. Some, especially among socialist economists, suggestions on curbing population growth were fairly tame, ranging from passive programs like relying on industrial growth and rising standards of living to drive down the birth rate or active ones, like Gandhi's insistence on "self-control or Brahmacharya."<sup>178</sup> Others, like Chandrasekhar, took more severe positions, like calls to forcibly limit the number of children a couple could have via sterilization. Unsurprisingly, this wide range of proposals engendered aggressive debates. Push and pull between the innocuous and extreme spawned serious discourse both in government and in scientific circles regarding population policy; should India adopt a policy and,

---

<sup>178</sup> Gandhi, Mohandas. "Birth Control." *Young India*, March 12, 1925. in Mahatma Gandhi. *Young India: 1924-1926*. Current Thought Press: Madras, 1927. <https://archive.org/details/in.ernet.dli.2015.211139/>.

if so, what would it look like? The result was the world's first national family planning program in 1951 as a part of the First Five Year Plan.<sup>179</sup> Independent India had embraced a population control program to supplement its plan to develop and modernize India.

Indians worked within their own institutions and governments to advance policies aimed at reducing population growth after independence. At times, their more ambitious methods were tempered by conservative forces in India, and consciously reined in to allow for continued American aid. To that end, this chapter is concerned with the debates over population policy after Indian independence up to 1970 and the reasons that family planning “won;” how a country with such serious political, though not formally organized, opposition to artificial birth control before independence would come to have the world's first national family program only twenty-five years later. It follows two major threads, scientific discussion and government policy in India. American aid played a role in developing India's population studies community and in funding responses to population growth, but this chapter argues that the driving forces behind population policy were Indian motivations, with American aid supplementing it.

Family planning emerged as the main avenue of India's population policy because it was a consensus term. It was inoffensive enough that politicians and scientists alike could read into it what they wanted, and so support and funding could be raised, both in the United States and in India. The stringent Gandhian could envision a program of self-discipline and education, while the ardent neo-Malthusian could see active limits on reproduction. Family planning was a compromise that all parties could pursue, and this compromise, as well as the rhetoric of overpopulation, had serious consequences for the subsequent decades of India's population

---

<sup>179</sup> Visaria, “From Family Planning to Repro. Health” <https://www.jstor.org/stable/2991871>, p. S44.

policy. The balance between Indian ambition and American concerns resulted in a family planning program designed to appease both parties.

It may help to restate some basic definitions here for the benefit of the reader. Population policy involves an active role on the part of the government in achieving certain demographic targets, be they rates of birth and death or a stable population of a specific number. In India, this proposed number was doubly important; it served as a goal for demographic change, but also as a target for consumer industrial production. Likewise, population control is generally used to refer to population policies aimed at reducing rates of growth or total population. Birth control and contraception are largely used interchangeably - most references this chapter utilizes predate the public availability of “the pill” after 1960 - to refer to artificial methods of reducing the number of births, though some sources do specify “non-appliance methods,” like the rhythm method or *coitus interruptus*.<sup>180</sup> The reader should note, however, that these definitions are not necessarily universal - part of the argument involves the ambiguity of the term “family planning” - and some authors may draw stark distinctions where others conflate terms.

In terms of chronology, the bulk of this chapter will cover the period from around 1950 to 1970. The debates around population policy change dramatically after independence - no longer are these hypothetical discussions of what India ought to try eventually, but now are considered serious policy proposals. American sources make similar distinctions, though the body of serious policy-targeted literature before independence is comparatively scant. This timeframe allows the chapter to follow developments in India and building American enthusiasm; a midpoint at 1961 marks both the beginning of USAID, which changed the nature of American scientific

---

<sup>180</sup> The Food and Drug Administration approved Enovid as the first oral contraceptive in the US in 1960 and the UK in 1961 (as Enavid).

involvement, and the 1961 Indian census and Third Five Year Plan, which accelerated the kinds of programs both governments undertook.<sup>181</sup> The period from 1961 to 1970 highlights the impact of these connections on India's population policy moving forward. This focus on an earlier period avoids the well-worn considerations of US government involvement and the complicated relationship of the US, India, and Pakistan in the 1970s. Instead, this period focuses on the origin of these proposed solutions, and allows us to connect these early proposals to later programs in India. Family planning emerged here, and only accelerated later; understanding the trajectory of population policy begins long before the US government involved itself.

## **INDEPENDENCE COMES TO INDIA**

Before India gained independence in 1947, the concerns of the population-minded in India focused on issues specific to India's standing in the British Empire and the world. Many politically-oriented population scholars saw the turmoil of World War II and the global reorganization that followed as opportunities to win victories, both in the fight against growing population and for an independent India. It is important to remember that for Indians, the problem of population was largely a problem of national development and living standards; their objective was not decrease in the number of people for its own sake, but to "restrict our population until we are able to feed, clothe, and educate those who already exist."<sup>182</sup> Food security, chief among these fights, stood at the center of a large body of writing, and many authors insisted that the government take steps to ensure neither the ongoing and widespread malnutrition nor the devastating Bengal famine of 1943 could occur again in India. Reliable food

---

<sup>181</sup> Poitrow, p. 62-65.

<sup>182</sup> Subash Chandra Bose in Gyan Chand, *India's Teeming Millions: A Contribution to the Study of the Indian Population Problem* (London: George Allen & Unwin Ltd, 1939), p. 296-7. At the time, Bose was president of the Indian National Congress Party.



supply would reduce mortality and was one of the foundational pieces of a successful population policy in the minds of many Indian scholars. Others, especially economists like Chand or Ghose, touted the benefits of industrialization and economic development in lifting the people of India out of poverty and naturally reducing fertility rates. Still, like Chandrasekhar, others looked at the mass migrations of post-war Europe and posited that similar movements could reduce immediate population pressures in India. Practical concerns in the face of the “population problem” married well to the goals of the nationalist and socialist politicians looking to develop independent India. This wide range of potential or partial solutions - industry, social change, agricultural reform, and emigration - found long life in Indian thought on methods to relieve population pressure.

A result of this enduring focus on population studies was India’s standing in demography, internationally. It was one of the countries with the most developed apparatus for studying population. At the first post-war meeting of the International Union for the Scientific Study of Population (IUSSP) in 1949, Indians were only outnumbered by French, American, British, Italian, and Swiss attendees (though the conference was held in Switzerland). Sripati Chandrasekhar, PC Mahalanobis, and KB Madhava were in attendance, some of the best-known figures in Indian population thought. Madhava was elected Vice President of the IUSSP Assembly; clearly, Indians had some stature amongst the international demographic community.

183

---

<sup>183</sup> Kiser, Clyde V. “The 1949 Assembly of the International Union for the Scientific Study of Population.” *Population Index*, Vol. 16, No. 1, Jan. 1950. P. 13-20.

## Demography after Independence

The Constitution of the Republic of India came into effect in 1950, and the newly independent republic did two things in the following year that dramatically reshaped the discussion on population control in India. First, it initiated its first census for 1951 under the direction of demographer R.A. Gopaldaswami, who had served as secretary on the Famine Inquiry Commission. Second, it established a Planning Commission and charged this commission to draft the first of India's Five Year Plans. The committees that drafted these plans cited widely from Indian authors - and even a few Americans - on the population problem. Moreover, these documents formed the basis for population policy in India. Any future assessment of India's situation would be a direct response to the analysis of the Census, and especially the Five Year Plans, the guiding documents of Indian development.

The First Five Year Plan, which began planning in 1950 and was finally published in December of 1952, laid out a fairly comprehensive plan to develop infrastructure, resource industries, and agriculture especially across the country, with objectives to be met by 1956. The plan also included directives for social policies: transportation, education, labor, housing, and health. Chapter thirty-two, the chapter on health, included a short list of priorities for medical advancement in India. This list included clean water supply, "control of malaria," rural health initiatives, "health services for mothers and children," medical training and education, "self-sufficiency in drugs and equipment," and lastly "family planning and population control."

<sup>184</sup> The plan cited "recent increase in the population... and the pressure exercised on the limited

---

<sup>184</sup> Planning Commission, "1st Five Year Plan" (Government of India, 1951), <http://www.planningcommission.nic.in/plans/planrel/fiveyr/welcome.html>, Chapter 32, Section 8.

resources of the country” as creating “urgency of the problem of family planning and population control.”<sup>185</sup>

Still, the authors acknowledged that little could be said definitively about methods. The report called for exploration of the “suitability, acceptability and effectiveness” of different methods of family planning. It did, however, suggest that if the population “can be educated to accept the rhythm method” and use it to effect, the government should support and spread the rhythm technique, since it “avoid[ed] enormous expenditure” while also “securing the ethical values that community life would gain by the self-imposed restraint which the rhythm method involves.” While the report also advocated for support of private “voluntary agencies” studying chemical and mechanical contraceptives, the only course of government action it supported directly was the rhythm method.<sup>186</sup>

This tempered many of the recommendations from the Committee of Population Growth and Family Planning, who published their report in April 1951. This committee, made up of many respected demographers - Gopaldaswami the Census Director, Gyan Chand, and Chidambara Chandrasekaran - who had all espoused neo-Malthusian concerns, put forth a more aggressive plan of action than the Five Year Plan, with its panel of politicians. The program advocated for a national family limitation program, state-supported facilities for voluntary sterilization and contraceptive education, and research for “inexpensive, safe and efficacious methods of birth control suitable for all classes.” The Committee also rehashed concerns of the Bhore Committee from 1946. Specifically, the program worried that advocates of self-control should “not expect significant results,” called for a raise of the minimum age of marriage, and

---

<sup>185</sup> Planning Commission, “1st Five Year Plan”, Chapter 32, Section 105.

<sup>186</sup> Planning Commission, “1st Five Year Plan”, Chapter 32, Section 107.

adoption of contraceptives, without regard for moral concerns. Contraception was not sinful, nor would it “promote looseness of sexual relations and weaken family ties,” they argued, though the government should focus on developing the economy and improving accuracy of demographic data over promoting contraceptives.<sup>187</sup>

This is not to say the entire committee was in blind agreement; Dr. Sushila Nayyar, who had been Gandhi’s personal physician, vehemently disagreed with the promotion of contraceptives, as a firm believer in Gandhi’s policy of “self-control.” The obverse was also true; another committee member called for universal access to contraceptives through the Health Department, family planning in medical education, a media campaign for smaller family sizes, and “the policy of sterilization of the unfit.”<sup>188</sup> Still, the rhythm method plan was not quite the widespread access to sterilization or contraceptive advice that most of the committee’s members had argued for.

Gopaldaswami followed this report with his report on the 1951 Census, published in 1953. This census finally answered the long-standing concerns of most population scholars that new and more accurate data was needed to fully understand the causes and consequences of population growth. His commentary, however, did very little to assuage any fears about population in India. Apart from the general demographic figures and tables, Gopaldaswami included a chapter predicting the trends in population until the year 1981, three censuses in the future. His grim estimation involved the perennial concerns over food security and birth rates, and his solutions included improved agricultural output and movement to “limit births to

---

<sup>187</sup> Notestein, Frank W. “Policy of The Indian Government on Family Limitation.” *Population Index* 17, no. 4 (1951): 254–63. <https://doi.org/10.2307/2730939>, p. 255-259.

<sup>188</sup> Notestein, Frank W. “Policy of The Indian Government on Family Limitation.” *Population Index* 17, no. 4 (1951): 254–63. <https://doi.org/10.2307/2730939>, p. 259-261.

approximate parity with deaths and thereby achieve a substantially stationary population.”<sup>189</sup>

Still, he stressed that “our effort to keep pace with unchecked growth of population is bound to fail at some point;” if India should fail to reduce fertility, eventually agricultural improvement would prove insufficient. He directly invoked the Bengal famine of 1943 and warned that “we shall not be able to overcome our existing shortages and also in addition keep pace with the unchecked growth of population.”<sup>190</sup> He likewise argued that “industrialisation is not the answer to the food problem.” Gopaldaswami called the willful increasing in numbers without regard for the impact of population growth dangerous and stated that India should ‘resolve to put an end to this increase [in population] as soon as possible.’<sup>191</sup> He described a system in which patriotic married couples would “accept it as their duty (to themselves, to their family, and to that larger family - the nation) that they should avoid improvident maternity” and that if it should occur, it should be met with “social disapproval, as any other form of anti-social self-indulgence.” As he defined it, “improvident maternity” involved child-birth by a mother who already has given birth three times and has at least one living child. This was not a question of individual means but of “national necessity;” “even if the individual can afford it, the nation cannot.” Supposedly, such births accounted for as much as forty-five percent of all births in India, and so reducing the birth rate of women who have many children and making small families the norm should be the government’s first objective.<sup>192</sup>

To that end, Gopaldaswami made several recommendations about the nature of a program to curb “improvident maternity.” As with most government plans, he called for research into

---

<sup>189</sup> Gopaldaswami, RA. “Census of India: 1951”, 1953. Government of India., p. 227

<sup>190</sup> Gopaldaswami, “Census of India 1951”, p. 207.

<sup>191</sup> Gopaldaswami, “Census of India 1951”, p. 209-210.

<sup>192</sup> Gopaldaswami, “Census of India 1951”, p. 217-218.

contraceptive methods, stipulating that any recommendations must be harmless, economic, efficient, and acceptable, by order of decreasing importance. He also called for spreading of the rhythm method despite its flaws. “During the first decade or so of married life,” couples using the rhythm method could reduce the numbers of births in a collective sense, but it was not a solution for couples with three children “in the context of... the abolition of improvident maternity” or for women who faced serious medical risks from pregnancy. He called for research into “coitus interruptus” - the “pull-out method” - to judge its efficacy as well. Gopaldaswami even advocated for research into indigenous contraceptive practices. At the same time, he advocated for male sterilization as relatively safe, effective, and easy to provide on a large scale.<sup>193</sup> All this depended on education and funding, but he expressed confidence that “once the mind of the people has been won, the rest will be easy.”<sup>194</sup>

The release of the census results spawned a new wave of scholarship on the population problem in India. Sripati Chandrasekhar wrote two major works as a result, *Population and Planned Parenthood in India* in 1955 and *Hungry People, Empty Lands* in 1954. *Empty Lands* rehashed the emigration policy dispute again, calling for international agreement on population policy and casting the population problem as a global one. Invoking Warren Thompson and William Vogt, he warned that inequitable distribution of population and resources would lead to a third world war unless the powerful nations of the world worked with the “regions where he population problems are most acute... Asia and the Far East.” Such cooperation should involve five parts: an end to colonialism, universal access to birth control, a system of planned

---

<sup>193</sup> Gopaldaswami, “Census of India 1951”, p. 217-226.

<sup>194</sup> Gopaldaswami, “Census of India 1951”, p. 224.

international migration, industrialization, and agricultural development.<sup>195</sup> He compared population growth to an arms race between rivaling nations, and insisted that international adoption of contraception to limit world population was necessary for “lessening want and the possibility of war.” It would be wiser to “prevent unwanted ‘immigration from heaven’” rather than wipe out overpopulated regions with nuclear weapons. Likewise, he argued that “effective if not compulsory” contraceptives would be necessary to curb growth, especially amongst emigrants, lest they “simply transfer their old wasteful demographic process to the new country” or the new space in the home country be refilled with too many people.<sup>196</sup> Clearly, birth control and international cooperation formed two of the central pillars of Chandrasekhar’s vision for addressing problems of population growth; India’s problem affected not just India, but the entire world.

Chandrasekhar’s other work in response to the census, *Population and Planned Parenthood in India*, unsurprisingly concerned access to birth control. In it, he laid out a case for family planning as a means to solve India’s problems. Throughout, he praised the government’s fledgling family planning program, noting that its plan was “progressive and scientific” and that they had a “pioneering nature” as nothing of the sort had been attempted in India - or anywhere else - before.<sup>197</sup> Similarly, he commended the Indian government for recruiting a World Health Organization (WHO) planned parenthood expert to help build their program. He criticized Rajkumari Amrit Kaur, then the Minister of Health, for only advancing the rhythm method for consideration, which he attributed to “her loyalty to Gandhian thought.”<sup>198</sup> While he

---

<sup>195</sup> Chandrasekhar, S., ed. *Hungry People and Empty Lands: An Essay on Population Problems and International Tensions*. 1 edition. London; New York: Routledge, 1954., p. 244-246.

<sup>196</sup> Chandrasekhar, *Hungry People*. p. 253-255.

<sup>197</sup> Chandrasekhar, S. *Population and Planned Parenthood in India*. London: Allen & Unwin, 1955., p.82.

<sup>198</sup> Chandrasekhar, S. *Population and Planned Parenthood in India*., p. 83.

acknowledged that the rhythm method may have useful results, he stressed that the government could explore other options.

He also cited issues with education and adoption of the simple methods used to illustrate the rhythm method as reasons to explore other options, despite the moral or religious objections of some. Chandrasekhar drew on the example of Dr. Abraham Stone, an American family planning expert, who had run a pilot program testing the efficacy of the rhythm method using colored beads. The beaded necklaces, using colored beads to track where a woman was in her menstrual cycle, had multiple issues in practice: they were difficult to read in the dark, they could be forgotten or bumped such that the beads did not reflect the current cycle, and some women refused to use them or would not touch them during their periods. Some even “mistook the beads to be charmed amulets” and “thought it was enough to push the beads” to prevent pregnancy. Furthermore, not every woman had the same cycle, so each necklace had to be personally tailored to be effective, or risk regular failures.<sup>199</sup> For the women who could not risk pregnancy, Chandrasekhar advocated research into more effective or permanent solutions, but assented to the promotion of the rhythm method. Though ineffective on an individual level, he thought it likely to “ease population pressure *nationally*” and those women who participated would be part of India’s “significant contribution” to family planning around the world. The rural Indian mother would “pioneer the way ... for other underdeveloped countries in Asia, Latin America, and Africa.”<sup>200</sup>

From these issues, Chandrasekhar posed two “obvious conclusions.” First, the women of India needed proper education on reproduction and health with an aim to help them see that

---

<sup>199</sup> Chandrasekhar, S. *Population and Planned Parenthood in India.*, p. 84-86.

<sup>200</sup> Chandrasekhar, S. *Population and Planned Parenthood in India.*, p. 86.



“large families and population growth constitute a problem and jeopardize the realization of a better level of living.” Second, the government must provide a simple, effective, harmless, and morally acceptable means of controlling fertility.<sup>201</sup> He offered many potential alternatives - *coitus interruptus*, *coitus reservatus*, condoms, contraceptive jelly, diaphragms, hormone treatments, and even sterilization - each with its own advantages and flaws.<sup>202</sup> Importantly, Chandrasekhar praised family planning education while also calling for access to birth control. In his ideal family planning system, access to birth control - including contraceptives - was a necessity, alongside education. If India could pioneer an effective and widely accepted system to reduce fertility, this process could be exported around the world, contributing to the solution of what he, and many other population scientists, saw as a global problem.

Also of note is Chandrasekhar’s effort to organize demographers and engage a national and international audience with Asian - and specifically Indian - population problems. He founded the Indian Institute for Population Studies (IIPS) in 1950 to “carry on basic research and bring new demographic data to light” and popularize demography. and established its journal Population Review in 1957 with himself as editor.<sup>203</sup> On the “International Advisory Board” of the organization were professors and researchers from around the world, but none more numerous than American demographers Kingsley Davis, Philip Hauser, Warren Thompson, and ecologist William Vogt, who served as advisors.<sup>204</sup> International authors, especially Americans, appeared in the journal with articles on India, China, and proposed policies. The IIPS connected

---

<sup>201</sup> Chandrasekhar, S. *Population and Planned Parenthood in India.*, p. 87.

<sup>202</sup> Chandrasekhar, S. *Population and Planned Parenthood in India.*, p. 59-68.

<sup>203</sup> “Editor’s Note”, *Population Review*, 1958. Vol 6, No. 2, p. 4.

<sup>204</sup> “Editor’s Note”, *Population Review*, 1957. Vol 1, No. 1, p. i.

the neo-Malthusian movement in the United States directly to part of India's growing field of demographers.

Economist Gyan Chand also made a return to the realm of population problems with his 1954 *Some Aspects of the Population Problem of India*. In it, he revisited some of his earlier views from *India's Teeming Millions* in light of the new data and lamented that “the accelerated rate of growth of population ... has not been clearly appreciated by our people or the planning authorities.” However, he showed similar distaste for those who failed to “realise the inadequacy of the Malthusian premises,” claiming that “family planners are doing themselves and the cause for which they stand disservice” by wholeheartedly embracing Malthusian principles. In the wake of independence and the adoption of a socialist government, Chand called for a new thinking on population policy, one that acknowledged family limitation as a part “even on Marxist assumptions” and that access to contraception should be “independent of the theories of over or under-population.”<sup>205</sup> Through this book, Chand walked back a few of his more extreme positions from *India's Teeming Millions* and suggested some points for India's government to consider on the subject of population.

In contrast to Gopalaswami and Chandrasekhar, who worried about the results of the new census showing increased growth rates, Chand took the opposite stance. Despite the “accelerated rate of growth” in India, “the population problem is not our most important or urgent problem” and planning for the future should not assume economic reform cannot enhance standards of living, despite population growth. Instead, he argued that planners should focus their attention on the economy, because “we cannot solve any of our major problems... within the limits of the

---

<sup>205</sup> Chand, Gyan. *Some Aspects of the Population Problem in India*. Bihar: Patna University, 1956., p. i-iii.

present economic system.”<sup>206</sup> He argued that merely slowing or stopping population growth would not eliminate “hunger, poverty, disease and blank despair” for large parts of the population. In fact, he accused “our foreign family-planning experts and their ardent supporters” of parroting overpopulation as the root cause of all problems to distract from other solutions. However, he did acknowledge that population policy had a place in “long-range policy,” but could not be allowed as a “means of staving off the revolution,” only as “an integral part of a revolutionary process.”<sup>207</sup> The essential distinction for Chand was that “cost of growth of population” counted much more seriously than simple concerns over number. If costs could be reduced and the means of subsistence increased accordingly, there was no reason to worry about rates of growth or even absolute numbers.<sup>208</sup>

Chand did not dispute that India needed a population plan or at least an “interim policy.” However, he emphasized that such policy should not treat “population control as an alternative to basic social changes.” Population control should not simply look to impose numerical restrictions, but should aim at “planned growth” instead, providing an optimally sized population for the economy and providing targets for consumer goods production. He conceded that infinite growth was not feasible, but countered that neither could an ideal level of population be estimated.<sup>209</sup> Effectively, he believed population policy should result in a stable population that benefited the country socially and economically. However, he contested the alarmism about the population projections in the 1951 census as foolish, since no concrete idea of the optimal population size existed. Pushing to reduce fertility could not solve current problems of poverty

---

<sup>206</sup> Chand, Gyan. *Some Aspects.*, p. 9.

<sup>207</sup> Chand, Gyan. *Some Aspects.*, p. 10.

<sup>208</sup> Chand, Gyan. *Some Aspects.*, p. 105.

<sup>209</sup> Chand, Gyan. *Some Aspects.* p. 143-147.

and hunger, nor could even the staunchest Malthusian claim to know what number of people India would need, at least with any plausible degree of accuracy.

Chand also elaborated on the methods of such a population plan. Many Indians had accepted contraception, he argued, partly due to “conservative, and even reactionary trends” that favored “the status quo” as much as “rational outlook having gained the upperhand.”

Contraception was simultaneously a force to prevent change and a rational advancement. He criticized “the men in authority” for “compromising with the backward-looking section of the people by officially adopting and propagating” the rhythm method, calling it “ineffective” and ethically “very doubtful.”<sup>210</sup> Indeed, he criticized the moral basis for the rhythm method that

supposed abstinence preserved “the ethical value” and noted that any method that depends on abstinence, even only part of the time, had deep flaws that hampered its effectiveness. He worried that “our limited available resources are being wasted” and effective contraception delayed by this insistence on deference to Gandhian abstinence.<sup>211</sup> Despite the “reactionary

forces behind this policy,” Chand still found it a good thing that the government had begun constructing and funding clinics to provide and educate the public on contraception.<sup>212</sup> This, coupled with “international cooperation for [contraceptive research]” could yield a much more effective method that did not sacrifice efficacy for moral or ethical reasons of “doubtful value.”

<sup>213</sup> Sterilization, though “a perfect means” of contraception, was irreversible and so also flawed.

The ideal contraceptive method would be one that induced “temporary sterilization” but could also be undone at any time.<sup>214</sup> Any successful plan depended on a safe and effective method that

---

<sup>210</sup> Chand, Gyan. *Some Aspects.*, p. 89-90.

<sup>211</sup> Chand, Gyan. *Some Aspects*, p. 92-93, 102-3.

<sup>212</sup> Chand, Gyan. *Some Aspects*, p. 90.

<sup>213</sup> Chand, Gyan. *Some Aspects*, p. 104.

<sup>214</sup> Chand, Gyan. *Some Aspects*, p. 107.

put choice in the hands of the individual, rather than enforcing state-approved goals or reliance on ineffective methods.

Furthermore, he argued that contraception and family planning were directly connected. Contraception, generally assumed to be a form of “family limitation and restriction of population,” was actually a method of “family regulation.” This important distinction rested on the fact that “large families are as compatible with contraception as small families and birth-controllers can ... have families of seven as they now have families of two or three.” Allowing people to space their children’s births and to regulate their number of children - to plan their family - would ensure that “every child is a wanted child.”<sup>215</sup> This “planned parenthood” benefitted India not because it meant a restriction of population or of growth, but because it “makes the growth of family and also of population purposeful.”<sup>216</sup> It made growth an individual choice, while still being useful in population planning to make fertility “subservient to personal and general will.”<sup>217</sup> As a result, Chand stated that “family planning and contraception have now become interchangeable terms” as “the former is really a polite term for the latter.”<sup>218</sup> Family planning “is and has to be much more” than simply family limitation. Instead, Chand saw it as “a creative art of the highest importance in which the community and the individuals both play a crucial role.”<sup>219</sup> Education on, and access to effective methods of, family planning would allow Indians to shape their own communities and allow parents to match their families to their means. By such a plan, India could never be overpopulated, since ideally no child would be born to circumstances where their parents could not support them.

---

<sup>215</sup> Chand, Gyan. *Some Aspects*, p. 104.

<sup>216</sup> Chand, Gyan. *Some Aspects*, p. 105.

<sup>217</sup> Chand, Gyan. *Some Aspects*, p. 106.

<sup>218</sup> Chand, Gyan. *Some Aspects*, p. 107.

<sup>219</sup> Chand, Gyan. *Some Aspects*, p. 108-109.

While contraceptive access and population planning formed important pillars of economic planning - both of which Chand advocated for - Chand took issue with “the intrusion of foreigners in the arena of controversy” namely “Americans - some of them in high places” who made India into a “necessary dyke against the menace of communism.”<sup>220</sup> He went on:

This interest is the growth of population in this country is shared by a significant section of public opinion because it is assumed that unless population is checked, the future would be lost to communism; and a holy crusade is being carried on by our benevolent foreign experts and their Indian allies for arresting the increase of population in order to save more the soul than the body of the people of this country.<sup>221</sup>

He also noted the concern of many in the Western world surrounded the marked decline in European and Euro-descended fertility “while that of Oriental people has markedly increased.” Concerns raged in many circles over the dangers this might have presented to “the maintenance and extension of Western values and culture.” Western culture needed protection from the “explosive possibility of the population position in India and China,” or so authors like Robert Cook, an American demographer, eugenicist, and editor of *The Journal of Heredity*, argued. Chand rebuffed these ideas for their “Inhumanity more than unsoundness” and accused those so concerned about population of being worried over “denial of their dues to the resurgent Oriental peoples.” Still, Chand called on the government to accept their assistance in medical and other fields for the benefit of the Indian people and to “take into account the consequential readjustments” that improved health and growth will create, namely the “need for family limitation.”<sup>222</sup> Chand acknowledged that much of the concern from American and British demographers on India came from prejudiced opinions of Indians or Asian cultures, but still called for cooperation. If science and technology could be advanced from working with these

---

<sup>220</sup> Chand, Gyan. *Some Aspects*, p. 3-4.

<sup>221</sup> Chand, Gyan. *Some Aspects*, p. 5.

<sup>222</sup> Chand, Gyan. *Some Aspects*, p. 13.

foreign Malthusians, Indians could be healthier and better fed, and India would receive the assistance it needed to make family planning widespread, not out of fear of overpopulation but because it had many other benefits for the country.

The term “family planning” then is a complicated one. For the government in this early period, family planning largely meant education - teaching women about why limiting family size and spacing out births could be beneficial and crude methods to achieve the same. If Indian women learned of the benefits of smaller or planned families, they would naturally embrace techniques to limit or space their births. While the government did not formally oppose contraceptives, the only program that received official endorsement was the rhythm method. This sparked some criticism from prominent Indian demographers, who saw this as only a good start in the face of what many perceived to be serious danger; education alone would be insufficient. Even those who disagreed that India stood on the precipice of a population disaster had reason to criticize the faulty ethics of ineffective methods. Family planning, to them, ought to incorporate much more than just a rough technique for reducing fertility. It should exhaust every avenue to find or invent improved contraceptives or other methods to reduce fertility, ideally voluntary, and thus population pressure. Family planning then, emerges as a consensus term; it was broad enough to encompass the vague goals and methods of the national planning program and garner support from most, either as a complete plan or as a start. Birth control advocates, Neo-Malthusians, and ardent socialists could all see benefit in the term family planning. It fit well in the framework of national and economic planning as a means to achieve an optimal population for national defense and the economy. It was vague enough that Gandhians could see it as a promotion of self-discipline and abstinence, while the Neo-Malthusians could see potential

for more involved measures, including sterilization or further restrictions on the number or spacing of births. Even non-Gandhian opponents of the Malthusians, like Chand, wanted access to birth control more widespread as part of a program of family planning and education to promote healthy growth and family welfare. By the mid-1950s, family planning had “won;” the Second Five Year Plan in 1956 dramatically increased family planning funding from 65 lakhs (Rs. 650,000) in 1951 to nearly five crores (Rs. 50,000,000) showed renewed government interest in promotion family planning, and even made allowances for contraceptive testing programs.<sup>223</sup> By 1961, at the time of the Third Five Year Plan, the section in the Plan was no longer titled “Health,” but “Health and Family Planning” and allocated a staggering 50 crores (Rs. 500,000,000) to advance education and training, public communication, services, demographic, medical, and biological research.<sup>224</sup> Demographers and politicians both could agree on family planning as an inoffensive title for their proposed population policies. The debates over population problems were far from settled, but the groundwork had been laid for a response to India’s population growth, which decreasingly few did not consider problematic.

The 1950s saw a number of organizations formed for the purpose of studying population or supporting the family planning program, involving many leading population scholars. Apart from Chandrasekhar’s Indian Institute for Population Studies, economist VKRV Rao founded the Institute for Economic Growth (IEG) in 1958 in New Delhi. The IEG immediately acquired the Population Research Centre (PRC) that Rao, as head of the Research Advisory Committee, had

---

<sup>223</sup> “2nd Five Year Plan.” Government of India, Planning Commission, 1956. <http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html>., Ch 25, section 54-56.

<sup>224</sup> “3rd Five Year Plan.” Government of India, Planning Commission, 1961. <http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html>., Ch 32, Section 60-68.



recommended be built in New Delhi the previous year.<sup>225</sup> The ISI in Calcutta also received a demographic research unit in 1957, and another was built in Kerala, though many other institutions would receive demographic or population research centers in the following decades.

226

Another institution of central importance was the UN Demographic Training and Research Center, Bombay (DTRC), established in 1956.<sup>227</sup> Many American scholars, like Philip Hauser and Donald Bogue, had their first introduction to population studies in India through the DTRC or worked there as consultants. The DTRC's first director was Dr. KCKE Raja, the noted public health advocate, who was succeeded by Chidambara Chandrasekaran in 1959, one of the earliest names in Indian demography.<sup>228</sup> In 1949, Lady Rama Rau, and Indian philanthropist and colleague of American birth-controller Margaret Sanger, established the Family Planning Association of India in Bombay.<sup>229</sup> These organizations, and their international connections, brought American experts and funding to India by the invitation of Indian organizations and the Indian government to help build the foundation for a population policy that would curb population growth.

---

<sup>225</sup> Institute for Economic Growth. "Population Research Centre." <http://www.iegindia.org/POPULATION-RESEARCH-CENTRE>.

<sup>226</sup> Indian Statistical Institute "Institute History: 1957." <https://www.isical.ac.in/~repro/history/public/timepage/1957>.

<sup>227</sup> Raja, K. C. K. E. "The Demographic Training and Research Centre, Chembur, Bombay." In *The 6th International Conference on Planned Parenthood, Report of Proceedings, February 14-21, 1959, Vigyan Bhavan, New Delhi, India.*, 293–96. London: International Planned Parenthood Federation, 1959. <https://www.popline.org/node/475329>.

<sup>228</sup> Chandrasekaran, C. *The Life and Works of a Demographer: An Autobiography*. New Delhi ; New York: Tata McGraw-Hill Pub. Co. Ltd, 1999., p. 125-6.

<sup>229</sup> Agarwala, S. N. "Population Control in India: Progress and Prospects." *Law and Contemporary Problems* 25, no. 3 (1960): 577–92. <https://doi.org/10.2307/1190756>, p. 581.

## Developments After 1961

The Third Five Year Plan, the 1961 Census, and the introduction of USAID further invigorated debates around population policy in India. Among the Indian cohort, some of the more extreme voices rose to the top. In 1964, Sripati Chandrasekhar was elected to a seat in India's upper house of Parliament, the Rajya Sabha, as a member of India's National Congress Party. In 1967, Prime Minister Indira Gandhi appointed him Minister for Health, putting him in charge of India's family planning programs. While he had held some extreme views in earlier decades, he embraced even more radical positions in the 1960s. He embraced a "cafeteria method" as minister, advocated all manner of methods, including reimbursing individuals for voluntary sterilization, forcibly limiting couples to three children (he himself had been sterilized after his third daughter was born), eating beef to increase the amount of food, and even supporting a year of abstinence.<sup>230</sup> He later embraced abortion as well, as "prevention is always

---

<sup>230</sup> DOMMEN, ARTHUR J. "India's Family Planning Minister Gets Backing: Dr. Chandrasekhar to Aim at Revitalizing Problem-Plagued Birth Control Project." *Los Angeles Times (1923-1995); Los Angeles, Calif.* March 19, 1967, sec. E. <http://search.proquest.com/docview/155684403/abstract/F6121CE5EF7546E4PQ/1>.

"Foe of Overpopulation: Sripati Chandrasekhar." *New York Times*. 1967.

<http://search.proquest.com/docview/117681912/abstract/1F325EE14F934929PQ/1>.

SATAKOPAN, R. "India Birth Control Chief Fights Critics." *Chicago Tribune (1963-Current); Chicago, Ill.* January 14, 1968, sec. 1A.

<http://search.proquest.com/docview/170506275/abstract/D49E8DE95F614D58PQ/1>.

Service, Bernard D. Nossiter *Washington Post Foreign*. "India Decries Pope's Edict." *The Washington Post, Times Herald (1959-1973); Washington, D.C.* August 4, 1968.

<http://search.proquest.com/docview/143467317/abstract/AA0A172BD13649F0PQ/1>.

"Sterilization Plan Backed, Indian Says." *New York Times*. 1967.

<http://search.proquest.com/docview/118080583/abstract/5A56A15DF4374E3APQ/1>.

Studies, S. Chandrasekhar Director of the Indian Institute for Population. "One Answer to India's 'Explosion.'" *The Washington Post, Times Herald (1959-1973); Washington, D.C.* February 5, 1961, sec. Outlook. <http://search.proquest.com/docview/141330676/abstract/24FDE285B78D43B6PQ/1>.

"Year's Abstention From Sex Is Urged by Indian Official." *New York Times*. 1968.

<http://search.proquest.com/docview/118279105/abstract/4ABA4BC64F994656PQ/1>.

better than cure, but cure, when possible, should never be denied,” and advocated for India to liberalize its laws on the subject.<sup>231</sup>

He continued to lecture in the United States and author books on issues of population in this period. Among others, he published an updated version of his *India's Population* subtitled *Facts, Problem, and Policy* in 1967. In the book, itself based on a lecture he delivered at Harvard University's Centre for Population Studies in 1966, gave a brief history of India's family planning program and lamented that “Despite all the debate and discussion, the money and effort, the foreign aid and advice, India's family-planning programme has so far been a failure.” Only in areas where “the summary method of sterilization” was used had there been “even a slight dent in the birth rate.”<sup>232</sup> Such positions had once been his own expert opinion; now they directly influenced the plan and policy of the Indian government.

In both America and India, population concerns grew and scientists and politicians collaborated on various means of reducing fertility, some bordering on coercive. Rhetoric and a sense of scientific backing fueled this acceleration, as did racial, cultural, and religious biases and Cold War fears. The increasing interaction between these two countries and their scientific communities only deepened the belief that action must be taken.

## **Conclusion**

Family planning emerged as a potential consensus solution to the problem of uncontrolled population growth for a number of reasons. First and foremost, it was a broad term

---

<sup>231</sup> Chandrasekhar, S. *Abortion in a Crowded World: The Problem of Abortion with Special Reference to India*. London: Allen & Unwin, 1974., p. 80.

“War against hunger won, but against poverty lost” Even though India survived the food crisis with the help of new practices and genetically modified wheat (for more, see Norman Borlaug), poverty remained rampant.

<sup>232</sup> Chandrasekhar, S. *India's Population: Facts, Problem and Policy*. Meenakshi Prakashan, 1967., p. i, 47.

that could be interpreted widely. For conservatives in Indian and American political circles, it excluded more extreme measures like abortion, sterilization, or even contraceptives. Moreover, it cost comparatively little to spread, as educational “non-appliance” methods, like the rhythm method, could achieve fair results without the material expense of supplying contraceptive devices or medical services in rural areas. Perhaps most importantly, for many demographers especially, family planning implicitly included contraceptives alongside education and health services. In this way, family planning could reduce population growth without waiting on economic changes - indeed, some felt that decreased population growth would actually stimulate economic growth. On top of that, education and accessibility would help spread the small family norm, leading to more voluntary engagement with methods of family limitation. Voluntary engagement and personal choice played a large role in support; few were willing to embrace coercive methods to curtail growth, at least before the 1960s. Family planning could encompass all of the desired aspects of a population control policy at the interpretation of the individual. Its adoption was not universal, and even its staunchest proponents criticized it for its various shortcomings or its separation from “real science,” but family planning still dominated the discussion of population control.

The popularity of family planning benefited from the close relationship between India and the United States. From early theories and education, American ideas framed the discussion of population in and about India. Later, aid and professional organizations brought more formal institutional ties and funding to deepen the connection between the two countries’ demographic communities. As programs began to succeed, Americans and Indians alike saw a turning point; they replaced the pessimism of the 1950s with renewed vigor for spreading population control

methods. Still, we can see that this impetus to control population predates the involvement of American money - either from private aid organizations like the Population Council, or from the US government through programs like AID - Indian and American scholars had built off each others' works for years. They had collectively crafted a solution - generic and vaguely worded to suit their particular goals - but it was India's government and institutions that made it a reality. Family planning became a pillar of India's national plan and a fixture in Americans' plans for the wider world. It should come as little surprise then, that a 1968 Population Council film to explain the advantages of family planning opened with the symbol of the Indian family planning program; India served as the poster child for government-sponsored population control methods around the globe.<sup>233</sup> While the complicated story of Indian-American relations and the family planning program does not end in 1970, this period clearly demonstrates how family planning "won" in Indian and American thought.

---

<sup>233</sup> "Family Planning" (1968) Walt Disney Co. and Population Council.  
<https://www.youtube.com/watch?reload=9&v=t2DkiceqmzU>

## **Conclusions**

High fertility in India alarmed scientists and politicians in both India and the United States in the early twentieth century for many reasons. Americans worried at least nominally about international conflict, and later communism. However, some implicitly or even explicitly racist or eugenic motivations existed as well. Indians, on the other hand, were more concerned with national standards of living, public health, and economic development than abstract worries over conflict. In fact, population concerns were employed in support of movements for India's independence and the end of racialized immigration laws around the world. Like their American counterparts, there were less altruistic motives as well; caste, region, and especially religion make appearances in the biases of Indian authors blaming superstitious peasants or warning against too many Muslim births, or things of that nature. Still, in the 1930s and 1940s, a new vision of population growth as dangerous emerged independently in the United States and India.

Though Americans had global concerns, India became their ideal subject; it was large enough, rural enough, densely-populated, and had a large body of statistics for research. India formed the basis of an international model that could be exported around the world. Southeast Asia, and later Africa, received the same treatment by international organizations, oftentimes under supervision of students trained in India by Americans. Professional organizations like the PAA in the US or IISP in India connected demographers in these growing fields, and international organizations like the Population Council or the IUSSP gave them opportunity to interact, exchanging ideas and techniques, as well as working together in India.

India's population policy was the result of cooperation, yes, but not exclusively received from American experts. Concerns of Indians predated American interests and Indians took the initiative before Americans were invited to help curtail population growth; this was a

collaborative effort, with Americans supporting an existing Indian initiative. The cooperative effort of these two communities produced serious concern in scientific and political circles; there was little doubt that India had pressing population problems. This rhetoric spawned a push to reduce fertility, to control population growth so that India would not suffer the ill effects that some demographers predicted. A Malthusian lean explains their general approach: reduce births first, since any improvement in the supply of material or food will only lead to more growth. Ever more severe solutions were proposed by demographers - forcible sterilization being one of them, even in the 1950s - though most never saw implementation.

The push and pull between inaction and extreme reaction led to a compromise. India became the first country in the world to enact a family planning program, chosen for its wide appeal. Family planning did not stand to offend the Gandhian faction who wanted to rely on education and self-discipline, nor did it offend most demographers, who saw in it an opportunity to provide the latest and most effective contraceptive methods to solve the population problem. This paradigm lasted for decades and the Indian government still supports a family planning program today, though its methods have changed over the intervening years.

Many of the apocalyptic claims of those demographers have not come to pass. India's population today is well over one billion, far exceeding their predictions. The planet has not imploded, nor have there been any major wars. India is not even starving like they feared, thanks in no small part to the work of agronomist Norman Borlaug and the Green Revolution of the 1970s that dramatically increased food yields. While its population still grows, India has avoided catastrophe.

However, population control has a troubled history, and India is no different. A good deal of the literature this thesis has examined came from Western-educated authors, many of whom were not Indian, writing at length about the dangers that Indian people posed to the world. They predicated their solutions on the idea that fewer children in India was a good thing. The implicit and explicit racial-, religious-, and class- or caste-based biases of the authors had deep and lasting impacts on the lives that were shaped - or even prevented - by their proposed policies. Many of the “main characters” here, especially Americans like Dudley Kirk, received serious scrutiny in later life for their attachment to the various eugenics societies. The reader should bear all this in mind. For all their humanitarian language about improving the lives of millions, many of these demographers harbored serious prejudices.

Those prejudices constitute one of the many avenues of continued study that this project suggests. More detailed backgrounds on the lives and views of these figures, beyond simply their roles as demographers, may reveal other problematic views and their consequences. This is especially true for the Indian scholars, whose biographical information is sadly lacking, and for whom records and archival material is far more difficult to find and access. That sort of personal detail, and especially correspondence, would no doubt illuminate their professional connections and the spread of ideas between India and the United States.

Another potential avenue would be more detailed study of India’s political situation regarding population control. Many Indian demographers spent parts of their career in government ministries or even legislature, and many politicians had complicated views on population. This perspective could continue to salvage India’s participation in the fight against high fertility from a historiography dominated by Western scholars and American aid money.



Family planning, for all its shortcomings, was the result of a collaborative process that balanced the perceived needs of a developing India with the desire to reduce fertility. This opposition to population growth developed in India and the United States for different reasons, but their shared concern led these two scientific communities to work together on understanding and solving the “population problem.” Their cooperative relationship and the language they used give us a small insight into the original intentions and motivations of family planning programs. Their alarmist language help us understand why the Indian government would adopt such harsh measures when family planning had not worked as effectively as once hoped. The concerns that fueled the Emergency in 1975 did not materialize out of thin air - they had been building for decades - and the modern reliance on sterilization fulfills many of the 1950s plan’s requirements for contraceptives: low-cost, no resupply infrastructure, and effective.

## Bibliography

### Primary

- “1st Five Year Plan.” Government of India, Planning Commission, 1951.  
<http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html>.
- “2nd Five Year Plan.” Government of India, Planning Commission, 1956.  
<http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html>.
- “3rd Five Year Plan.” Government of India, Planning Commission, 1961.  
<http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html>.
- Adarkar, B. P. “The Future Trend of Population Growth in India.” *Sankhyā: The Indian Journal of Statistics (1933-1960)* 3, no. 1 (1937): 41–49.  
<http://www.jstor.org/stable/40383801>.
- . “The Future Trend of Population Growth in India.” *Sankhyā: The Indian Journal of Statistics (1933-1960)* 3, no. 1 (1937): 41–49. <http://www.jstor.org/stable/40383801>.
- Arriaga, Eduardo E., and Kingsley Davis. “The Pattern of Mortality Change in Latin America.” *Demography* 6, no. 3 (1969): 223–42. <https://doi.org/10.2307/2060393>.
- Banerji, D. “Family Planning in India: The Outlook for 2000 AD.” *Economic and Political Weekly* 9, no. 48 (1974): 1984–89. <http://www.jstor.org/stable/4364205>.
- Bogue, Donald. “Hypotheses for Family Planning Derived from Recent and Current Experience in Asia.” *Studies in Family Planning* 1, no. 3 (1964): 6–9.  
<https://doi.org/10.2307/1965265>.
- Bogue, Donald J. “A Long-Term Solution to the AFDC Problem: Prevention of Unwanted Pregnancy.” *Social Service Review* 49, no. 4 (1975): 539–52.  
<http://www.jstor.org.ezproxy.lib.vt.edu/stable/30015297>.
- . “A Technique for Making Extensive Population Estimates.” *Journal of the American Statistical Association* 45, no. 250 (1950): 149–63.  
<https://doi.org/10.2307/2280675>.
- . “How Demography Was Born.” *Demography* 30, no. 4 (1983): 519–21.  
<https://doi.org/10.2307/2061803>.
- . “Progress and Problems of World Fertility Control.” *Demography* 5, no. 2 (1968): 539–40. <https://doi.org/10.2307/2060243>.
- . “Prospects for Population Control.” *Journal of Farm Economics* 49, no. 5 (1967): 1094–97. <https://doi.org/10.2307/1236987>.

- . “The Demographic Breakthrough: From Projection to Control.” *Population Index* 30, no. 4 (1964): 449–54. <https://doi.org/10.2307/2732225>.
- Bose, Subhas Chandra. *CONGRESS PRESIDENT: Speeches, Articles, and Letters January 1938–May 1939*. Orient Blackswan, 2004.
- Brownlee, Kimberly, David Chelminski, Mary Koslovsky, and Bea Bridenbaugh. “Sripati Chandrasekhar Papers, MSS-189.” Ward M Canaday Center for Special Collections, 2007 2002. [http://www.utoledo.edu/library/canaday/HTML\\_findingaids/MSS-189.html](http://www.utoledo.edu/library/canaday/HTML_findingaids/MSS-189.html).
- Chand, Gyan. *India’s Teeming Millions: A Contribution to the Study of the Indian Population Problem*. London: George Allen & Unwin Ltd, 1939.
- . *Some Aspects of the Population Problem in India*. Bihar: Patna University, 1956.
- Chandrasekaran, C. “CULTURAL PATTERNS IN RELATION TO FAMILY PLANNING IN INDIA.” *Journal of Tropical Pediatrics* 2, no. 1 (June 1, 1956): 37–42. <https://doi.org/10.1093/oxfordjournals.tropej.a057408>.
- . *The Life and Works of a Demographer: An Autobiography*. New Delhi ; New York: Tata McGraw-Hill Pub. Co. Ltd, 1999.
- Chandrasekhar, S. *Abortion in a Crowded World: The Problem of Abortion with Special Reference to India*. London: Allen & Unwin, 1974.
- . *American Aid and India’s Economic Development*. New York: Praeger, 1966.
- . *Asia’s Population Problems: With a Discussion of Population and Immigration in Australia*. New York: Praeger, 1967.
- . “How India Is Tackling Her Population Problem.” *Foreign Affairs* 47, no. 1 (1968): 138–50. <https://doi.org/10.2307/20039360>.
- , ed. *Hungry People and Empty Lands: An Essay on Population Problems and International Tensions*. 1 edition. London; New York: Routledge, 1954.
- . *India’s Population: Facts, Problem and Policy*. Meenakshi Prakashan, 1967.
- Chandrasekhar, S. *Population and Planned Parenthood in India*. London: Allen & Unwin, 1955.
- Chandrasekhar, S. “Population Pressure in India.” *Pacific Affairs* 16, no. 2 (1943): 166–84. <https://doi.org/10.2307/2751957>.
- . “The Prospect for Planned Parenthood in India.” *Pacific Affairs* 26, no. 4 (1953): 318–28. <https://doi.org/10.2307/2752868>.
- Chandrasekhar, Sripati. *India’s Population: Fact and Policy*. New York, N.Y: Asia Press - The John Day Company, 1946.

- Coale, Ansley J., and Edgar Malone Hoover. *Population Growth and Economic Development in Low-Income Countries: A Case Study of India's Prospects*. Princeton, N.J: Princeton University Press, 1958.
- Davis, Kingsley. "India and Pakistan: The Demography of Partition." *Pacific Affairs* 22, no. 3 (1949): 254–64. <https://doi.org/10.2307/2751797>.
- . Interview with Kingsley Davis. Interview by Jean van der Tak. Transcript, May 1, 1989.  
[http://www.populationassociation.org/wp-content/uploads/PAA\\_Presidents\\_1961-76.pdf](http://www.populationassociation.org/wp-content/uploads/PAA_Presidents_1961-76.pdf).
- . "Population Policy: Will Current Programs Succeed?" *Science* 158, no. 3802 (1967): 730–39. <http://www.jstor.org/stable/1723056>.
- . *The Population of India and Pakistan*. Vol. item 07983. Princeton, N.J: Princeton University Press, 1951.  
[http://dsp.lib.vt.edu/crl.html?sid=Summon:CRL&rft.au=Davis,%20Kingsley,%201908-&title=The%20population%20of%20India%20and%20Pakistan&rft.pub=Princeton%20University%20Press.&rft\\_dat=ocm37520532](http://dsp.lib.vt.edu/crl.html?sid=Summon:CRL&rft.au=Davis,%20Kingsley,%201908-&title=The%20population%20of%20India%20and%20Pakistan&rft.pub=Princeton%20University%20Press.&rft_dat=ocm37520532).
- Duncan, Otis Dudley, Ronald Freedman, J. Michael Coble, and Doris P. Slesinger. "Marital Fertility and Size of Family of Orientation." *Demography* 2 (1965): 508–15.  
<https://doi.org/10.2307/2060135>.
- "Editorial." *Sankhyā: The Indian Journal of Statistics (1933-1960)* 1, no. 1 (1933): 1–4.  
<http://www.jstor.org/stable/40383662>.
- "Foe of Overpopulation: Sripati Chandrasekhar." *New York Times*. 1967.  
<http://search.proquest.com/docview/117681912/abstract/5E892706889D4680PQ/25>.
- Gandhi, Mohandas. *The Collected Works of Mahatma Gandhi*. Vol. 26. Delhi: The Publications Division, Ministry of Information and Broadcasting, Government of India, 1967.
- Ghose, Bimal C. *Planning for India*. 2nd ed. Oxford University Press, 1945.
- Ghosh, Dwarkanath. *Pressure of Population and Economic Efficiency in India*. New Delhi: Oxford University Press, 1946.
- Hansen, Morris H., and Philip M. Hauser. "Area Sampling-Some Principles of Sample Design." *The Public Opinion Quarterly* 9, no. 2 (1945): 183–93.  
<https://www.jstor.org/stable/2745221>.

- Hauser, Philip. "The Early Years of the Population Commission." *Bulletin of the United Nations Population Division*, no. 19/20 (1986): 2–5.
- Hauser, Philip M. "Research Potentialities in Burma." *Population Index* 19, no. 4 (1953): 260–72. <https://doi.org/10.2307/2731066>.
- Health Survey and Development Committee. *Report of the Health Survey and Development Committee*. Vol. 1. 2 vols. Delhi: Manager of Publications, 1946.
- . *Report of the Health Survey and Development Committee*. Vol. 2. 2 vols. Delhi: Manager of Publications, 1946.
- Heer, David M. "Abortion, Contraception, and Population Policy in the Soviet Union." *Demography* 2 (1965): 531–39. <https://doi.org/10.2307/2060137>.
- "India. The Famine Inquiry Commission." *Population Index* 12, no. 3 (1946): 171–73. <https://doi.org/10.2307/2730240>.
- Indian Institute for Population Studies, ed. *Population Review*. La Jolla, Calif. [etc: Indian Institute for Population Studies], n.d.
- "Indian Statistical Institute: Thirteenth Annual Report: 1944-45." *Sankhyā: The Indian Journal of Statistics (1933-1960)* 7, no. 2 (1945): 217–31. <https://www.jstor.org/stable/25047849>.
- Johnson, Lyndon B. *Public Papers of the Presidents of the United States: Lyndon B. Johnson, 1965*. Vol. 1. Washington, DC: Government Printing Office, 1966.
- Mahalanobis, P. C. "Distribution of Muslims in the Population of India: 1941." *Sankhyā: The Indian Journal of Statistics (1933-1960)* 7, no. 4 (1946): 429–34. <http://www.jstor.org/stable/25047887>.
- . "The Need of a Sample Survey of the Growth of Population in India." *Sankhyā: The Indian Journal of Statistics (1933-1960)* 3, no. 1 (1937): 58–58. <http://www.jstor.org/stable/40383805>.
- Mahalanobis, P. C., Ramkrishna Mukherjea, and Ambika Ghosh. "A Sample Survey of After-Effects of the Bengal Famine of 1943." *Sankhyā: The Indian Journal of Statistics (1933-1960)* 7, no. 4 (1946): 337–400. <http://www.jstor.org/stable/25047881>.
- Malthus, Robert Thomas. *An Essay on the Principle of Population*. St. Paul's Church-Yard, London: J. Johnson, 1798. <http://www.esp.org/books/malthus/population/malthus.pdf>.
- Mukerjee, Radhakamal. *Food Planning for Four Hundred Millions*. St. Martin's Street, London: Macmillan and Co., Ltd., 1938.
- . *Races, Lands, and Food*. New York: Dryden Press, 1946.

- Mukherjee, Radhakamal. *Population: Report of the Sub-Committee*. Edited by K. T. Shah. National Planning Committee Series. Bombay: Vora & Co. Publishers, Ltd., 1947. <https://archive.org/details/in.ernet.dli.2015.85649>.
- Notestein, Frank. "Population: The Long View." In *Food for the World*, edited by TW Schultz, 36–57. Chicago, IL: University of Chicago Press, 1945.
- Notestein, Frank W. "Policy of The Indian Government on Family Limitation." *Population Index* 17, no. 4 (1951): 254–63. <https://doi.org/10.2307/2730939>.
- . "The Population Council and the Demographic Crisis of the Less Developed World." *Demography* 5, no. 2 (1968): 553–60. <https://doi.org/10.2307/2060245>.
- Osborne, Frederick. *Population: An International Dilemma*. New York: Population Council, Inc., 1958.
- Planning Commission. "1st Five Year Plan." Government of India, 1951. <http://www.planningcommission.nic.in/plans/planrel/fiveyr/welcome.html>.
- Poornapregna, V. N., K. V. Krishna Sastry, and K. B. Madhava. "Maternity Statistics from Mysore." *Sankhyā: The Indian Journal of Statistics (1933-1960)* 1, no. 1 (1933): 63–75. <http://www.jstor.org/stable/40383666>.
- Raja, K. C. K. E. "Comments on 'The Future Trend of Population Growth in India.'" *Sankhyā: The Indian Journal of Statistics (1933-1960)* 3, no. 1 (1937): 49–54. <http://www.jstor.org/stable/40383802>.
- . "The Demographic Training and Research Centre, Chembur, Bombay." In *The 6th International Conference on Planned Parenthood, Report of Proceedings, February 14-21, 1959, Vigyan Bhavan, New Delhi, India.*, 293–96. London: International Planned Parenthood Federation, 1959. <https://www.poline.org/node/475329>.
- Ravenholt, R. T. "The A.I.D. Population and Family Planning Program--Goals, Scope, and Progress." *Demography* 5, no. 2 (1968): 561–73. <https://doi.org/10.2307/2060246>.
- Rockefeller], [John D. "On the Origins of the Population Council." *Population and Development Review* 3, no. 4 (1977): 493–502. <https://doi.org/10.2307/1971690>.
- Tauber, Irene B. "Demographic Modernization: Continuities and Transitions." *Demography* 3, no. 1 (1966): 90–108. <https://doi.org/10.2307/2060066>.
- The Famine Inquiry Commission. "Famine Inquiry Commission Report on Bengal." Government of British India, May 1945. <https://archive.org/details/in.ernet.dli.2015.206311/page/n7>.

- “The Life and Works of a Demographer: An Autobiography: C Chandrasekaran: 9780074630655: Amazon.Com: Books.” Accessed May 30, 2019.  
<https://www.amazon.com/life-works-demographer-autobiography/dp/0074630652>.
- The Mysore Population Study; Report of a Field Survey Carried out in Selected Areas of Mysore State, India*. New York, 1961.  
<http://hdl.handle.net/2027/mdp.39015075003601>.
- Thompson, Warren S. *Population: A Study in Malthusianism*. Vol. LXIII. Studies in History, Economics, and Public Law 153. New York: Columbia University Press, 1915.  
<https://archive.org/details/cu31924013756386>.
- United Nations. *The Determinants and Consequences of Population Trends; a Summary of the Findings of Studies on the Relationships between Population Changes and Economic and Social Conditions*. Its Population Studies, No. 17. New York: United Nations, Dept. of Social Affairs, Population Division, 1953.  
<https://catalog.hathitrust.org/Record/002241804>.
- Wyon, John B., Stephen L. Finner, David M. Heer, Nadipuram R. Parthasarathy, and John E. Gordon. “Delayed Marriage and Prospects for Fewer Births in Punjab Villages.” *Demography* 3, no. 1 (1966): 209–17. <https://doi.org/10.2307/2060073>.

## Secondary

- Agarwala, S. N. “Population Control in India: Progress and Prospects.” *Law and Contemporary Problems* 25, no. 3 (1960): 577–92. <https://doi.org/10.2307/1190756>.
- Alexander, Denis, and Ronald L. Numbers, eds. *Biology and Ideology from Descartes to Dawkins*. Chicago: The University of Chicago Press, 2010.
- Alper, Joseph S., ed. *The Double-Edged Helix: Social Implications of Genetics in a Diverse Society*. Baltimore: Johns Hopkins University Press, 2002.
- Anderson, Benedict R. O’G. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. Rev. ed. London ; New York: Verso, 2006.
- Appadurai, Arjun. “Number in the Colonial Imagination.” In *Orientalism and the Postcolonial Predicament: Perspectives on South Asia*, edited by Carol Appadurai Breckenridge and Peter van der Veer. South Asia Seminar Series. Philadelphia: University of Pennsylvania Press, 1993.
- Bacaër, Nicolas. *A Short History of Mathematical Population Dynamics*. New York: Springer Verlag, 2011.

- Bandarage, Asoka. *Women, Population and Global Crisis: Political-Economic Analysis*. London ; Atlantic Highland, NJ, USA: Zed Books, 1997.
- Bashford, Alison. *Global Population: History, Geopolitics, and Life on Earth*, 2016.
- . “Population, Geopolitics, and International Organizations in the Mid Twentieth Century.” *Journal of World History* 19, no. 3 (2008): 327–47.  
<https://www.jstor.org/stable/40542618>.
- Bjorn, Claus, Alexander Grant, and Keith J Stringer. “Nations, Nationalism and Patriotism in the European Past.” *Speculum*. 70, no. 3 (1995): 705.
- Borrie, W. D. “The Population Issue in India: A Review Article.” *Pacific Affairs* 36, no. 1 (1963): 74–78. <https://doi.org/10.2307/2754775>.
- Bose, Ashish. “Population Research: Deteriorating Scholarship.” *Economic and Political Weekly* 38, no. 44 (2003): 4637–39. <http://www.jstor.org/stable/4414213>.
- Caldwell, John C. “Malthus and the Less Developed World: The Pivotal Role of India.” *Population and Development Review* 24, no. 4 (1998): 675–96.  
<https://doi.org/10.2307/2808021>.
- . “Malthus and the Less Developed World: The Pivotal Role of India.” *Population and Development Review* 24, no. 4 (1998): 675–96. <https://doi.org/10.2307/2808021>.
- Caldwell, John C., and Pat Caldwell. *Limiting Population Growth and the Ford Foundation Contribution*. London ; Dover, N.H: F. Pinter, 1986.
- “Census of India - History of Indian Census.” Accessed May 1, 2019.  
[http://censusindia.gov.in/Data\\_Products/Library/Indian\\_perceptive\\_link/History\\_link/censushistory.htm](http://censusindia.gov.in/Data_Products/Library/Indian_perceptive_link/History_link/censushistory.htm).
- Chatterji, Joya. “The Fashioning of a Frontier: The Radcliffe Line and Bengal’s Border Landscape, 1947-52.” *Modern Asian Studies* 33, no. 1 (1999): 185–242.  
<http://www.jstor.org/stable/313155>.
- Coale, Ansley J. “Kingsley Davis (20 August 1908-27 February 1997).” *Proceedings of the American Philosophical Society* 143, no. 3 (1999): 453–54.  
<http://www.jstor.org/stable/3181957>.
- Cohen-Cole, Jamie. *The Open Mind: Cold War Politics and the Sciences of Human Nature*. Chicago, IL, UNITED STATES: University of Chicago Press, 2014.  
<http://ebookcentral.proquest.com/lib/vt/detail.action?docID=1588380>.
- Concepcion, Mercedes. *The IUSSP in History*. International Union for the Scientific Study of Population, 1985. [https://iussp.org/sites/default/files/The\\_IUSSP\\_in\\_History.pdf](https://iussp.org/sites/default/files/The_IUSSP_in_History.pdf).



- Connelly, Matthew. *Fatal Misconception: The Struggle to Control World Population*. Cambridge (Mass.); London: Belknap Press of Harvard University Press, 2008.
- . “Population Control in India: Prologue to the Emergency Period.” *Population and Development Review* 32, no. 4 (2006): 629–67. <http://www.jstor.org/stable/20058922>.
- Copland, Ian. “The Princely States, the Muslim League, and the Partition of India in 1947.” *The International History Review* 13, no. 1 (1991): 38–69. <http://www.jstor.org/stable/40106322>.
- Donaldson, Peter J. *Nature against Us: The United States and the World Population Crisis, 1965-1980*. Chapel Hill: University of North Carolina Press, 1990.
- Dongen, Jeroen van. *Cold War Science and the Transatlantic Circulation of Knowledge*. Leiden, NETHERLANDS: BRILL, 2015. <http://ebookcentral.proquest.com/lib/vt/detail.action?docID=4397546>.
- Ehrlich, Paul R. *The Population Bomb*. Rev. Rivercity, Mass: Rivercity Press, 1975.
- Engerman, David C. “Social Science in the Cold War.” *Isis* 101, no. 2 (2010): 393–400. <https://doi.org/10.1086/653106>.
- Erickson, Paul. “Mathematical Models, Rational Choice, and the Search for Cold War Culture.” *Isis* 101, no. 2 (2010): 386–92. <https://doi.org/10.1086/653105>.
- Eves, Howard W. “A Very Brief History of Statistics.” *The College Mathematics Journal* 33, no. 4 (2002): 306–8. <https://doi.org/10.2307/1559052>.
- Farber, Paul Lawrence. *Mixing Races: From Scientific Racism to Modern Evolutionary Ideas*. Baltimore: Johns Hopkins University Press, 2011.
- Freymann, Moyo W. “Population Control in India.” *Marriage and Family Living* 25, no. 1 (1963): 53–61. <https://doi.org/10.2307/349008>.
- “Global Population : History, Geopolitics, and Life on Earth (EBook, 2014) [WorldCat.Org].” Accessed April 4, 2019. <https://www.worldcat.org/title/global-population-history-geopolitics-and-life-on-earth/oclc/1041533322>.
- Green, Marshall. “The Evolution of US International Population Policy, 1965-92: A Chronological Account.” *Population and Development Review* 19, no. 2 (1993): 303–21. <https://doi.org/10.2307/2938439>.
- Greenhalgh, Susan. “The Social Construction of Population Science: An Intellectual, Institutional, and Political History of Twentieth-Century Demography.” *Comparative*

- Studies in Society and History* 38, no. 1 (1996): 26–66.  
<http://www.jstor.org.ezproxy.lib.vt.edu/stable/179337>.
- Gupta, Uma Das. “Indian Statistical Institute: Numbers and beyond, 1931–47.” In *Science and Modern India*. Pearson India, 2010.  
[http://proquest.safaribooksonline.com/book/math-and-science/9788131728185/part-vi-umbrella-institutions-for-teaching-basic-sciences-in-the-colleges-universities/chapter03\\_3\\_xhtml](http://proquest.safaribooksonline.com/book/math-and-science/9788131728185/part-vi-umbrella-institutions-for-teaching-basic-sciences-in-the-colleges-universities/chapter03_3_xhtml).
- Halfon, Saul E. *The Cairo Consensus: Demographic Surveys, Women’s Empowerment, and Regime Change in Population Policy*. Lanham, MD: Lexington Books, 2007.
- Hartmann, Betsy. “Liberal Ends, Illiberal Means: National Security, ‘Environmental Conflict’ and the Making of the Cairo Consensus\*.” *Indian Journal of Gender Studies* 13, no. 2 (June 1, 2006): 195–227.  
<https://doi.org/10.1177/097152150601300204>.
- . “Population Control I: Birth of an Ideology.” *International Journal of Health Services* 27, no. 3 (July 1, 1997): 523–40.  
<https://doi.org/10.2190/BL3N-XAJX-0YQB-VOBX>.
- . “Population Control in the New World Order.” *Development in Practice* 2, no. 3 (1992): 210–15. <http://www.jstor.org/stable/4029048>.
- . *Reproductive Rights and Wrongs: The Global Politics of Population Control and Contraceptive Choice*. 1st ed. New York: Harper & Row, 1987.
- Hauser, Philip. “The Early Years of the Population Commission.” *Bulletin of the United Nations Population Division*, no. 19/20 (1986): 2–5.
- Herring, Ann, and Alan C Swedlund, eds. *Human Biologists in the Archives: Demography, Health, Nutrition, and Genetics in Historical Populations*. Cambridge; New York: Cambridge University Press, 2005.
- Heyck, Hunter, and David Kaiser. “Introduction.” *Isis* 101, no. 2 (2010): 362–66.  
<https://doi.org/10.1086/653097>.
- Hodgson, Dennis. “Demography as Social Science and Policy Science.” *Population and Development Review* 9, no. 1 (1983): 1–34. <https://doi.org/10.2307/1972893>.
- . “Orthodoxy and Revisionism in American Demography.” *Population and Development Review* 14, no. 4 (1988): 541–69. <https://doi.org/10.2307/1973624>.
- . “The Ideological Origins of the Population Association of America.” *Population and Development Review* 17, no. 1 (1991): 1–34. <https://doi.org/10.2307/1972350>.

- Iriye, Akira. *Global Community: The Role of International Organizations in the Making of the Contemporary World*, c2002.
- Ittmann, Karl. "Demography as Policy Science in the British Empire, 1918-1969." *Journal of Policy History* 15, no. 4 (2003): 417–48.  
<https://muse-jhu-edu.ezproxy.lib.vt.edu/article/48406/pdf>.
- Ittmann, Karl, Dennis D. Cordell, and Gregory Maddox, eds. *The Demographics of Empire: The Colonial Order and the Creation of Knowledge*. Athens: Ohio University Press, 2010.
- Iyer, Samantha. "Colonial Population and the Idea of Development." *Comparative Studies in Society and History; Cambridge* 55, no. 1 (January 2013): 65–91.  
<http://dx.doi.org.ezproxy.lib.vt.edu/10.1017/S0010417512000588>.
- Jackson, John P., and Nadine M. Weidman. *Race, Racism, and Science: Social Impact and Interaction*. Santa Barbara, Calif: ABC-CLIO, 2004.
- Kalinovsky, Artemy M., and Sergey Radchenko, eds. *The End of the Cold War and the Third World: New Perspectives on Regional Conflict*. Cold War History. New York, NY: Routledge, 2011.
- Kammaing, Harmke, Geert Somsen, Dr. Ernst Hamm, and Dr. Robert M. Brain. *Pursuing the Unity of Science: Ideology and Scientific Practice from the Great War to the Cold War*. London, UNITED KINGDOM: Taylor & Francis Group, 2016.  
<http://ebookcentral.proquest.com/lib/vt/detail.action?docID=4530629>.
- KCR Raja. "Fond Memories of Dr. Kuttiettana Raja." *KCR Raja* (blog), July 4, 2011.  
<http://kcr Raja.com/2011/04/360/>.
- Kiser, Clyde V. "The 1949 Assembly of the International Union for the Scientific Study of Population." *Population Index* 16, no. 1 (1950): 13–20.  
<https://doi.org/10.2307/2730719>.
- Ledbetter, Rosanna. "Thirty Years of Family Planning in India." *Asian Survey* 24, no. 7 (1984): 736–58. <https://doi.org/10.2307/2644186>.
- Magnello, Eileen, and Anne Hardy. *The Road to Medical Statistics*. Amsterdam; New York, NY: Rodopi, 2002.
- Martin, Douglas. "Dr. Sripati Chandrasekhar, Indian Demographer, Dies at 83." *New York Times*. June 23, 2001, Saturday Late edition.
- MAULDIN, W. PARKER. "The Population Of India: Policy, Action And Research." *Economic Digest* 3, no. 2 (1960): 14–33. <http://www.jstor.org/stable/41239646>.

- May, Elaine Tyler. *Homeward Bound: American Families in the Cold War Era*. Fully rev. and updated 20th anniversary ed. New York, NY: Basic Books, 2008.
- Merchant, Emily Klancher. "A Digital History of Anglophone Demography and Global Population Control, 1915–1984." *Population and Development Review* 43, no. 1 (March 1, 2017): 83–117. <https://doi.org/10.1111/padr.12044>.
- Minkler, Meredith. "Consultants or Colleagues: The Role of US Population Advisors in India." *Population and Development Review* 3, no. 4 (1977): 403–19. <https://doi.org/10.2307/1971683>.
- Muehlenbeck, Philip E., ed. *Religion and the Cold War: A Global Perspective*. Nashville: Vanderbilt University Press, 2012.
- , ed. *Religion and the Cold War: A Global Perspective*. Nashville: Vanderbilt University Press, 2012.
- "Obituary: Professor Gyan Chand." *Indian Journal of Agricultural Economics* XXXVIII, no. 1 (March 1983). <https://ageconsearch.umn.edu/record/270554/files/14%20Obituary.pdf>.
- Oreskes, Naomi, and John Krige. *Science and Technology in the Global Cold War*. Cambridge, Mass., UNITED STATES: MIT Press, 2014. <http://ebookcentral.proquest.com/lib/vt/detail.action?docID=3339890>.
- Piotrow, Phyllis Tilson. *World Population Crisis: The United States Response*. Law and Population Book Series, no. 4. New York: Praeger, 1973.
- "ProQuest Ebook Central - Reader." Accessed April 4, 2019. <https://ebookcentral-proquest-com.ezproxy.lib.vt.edu/lib/vt/reader.action?docID=999509>.
- Ramsden, Edmund. "Frank W. Notestein, Frederick H. Osborn, and the Development of Demography in the United States." *The Princeton University Library Chronicle* 65, no. 2 (2004): 282–316. <http://www.jstor.org/stable/10.25290/prinunivlibrchro.65.2.0282>.
- Rao, Mohan. *From Population Control to Reproductive Health: Malthusian Arithmetic*. New Delhi ; Thousand Oaks, Calif. ; London: Sage Publications, 2004.
- Rindzevičiūtė, Eglė. *The Power of Systems: How Policy Sciences Opened Up the Cold War World*. Cornell University Press, 2016. <http://www.jstor.org/stable/10.7591/j.ctt1d2dmw5>.
- Robertson, Thomas. *The Malthusian Moment: Global Population Growth and the Birth of American Environmentalism*. New Brunswick, N.J: Rutgers University Press, 2012.

<https://ebookcentral-proquest-com.ezproxy.lib.vt.edu/lib/vt/reader.action?docID=999509>.

- Rodríguez, Maria I., Lale Say, and Marleen Temmerman. "Family Planning versus Contraception: What's in a Name?" *The Lancet Global Health* 2, no. 3 (March 1, 2014): e131–32. [https://doi.org/10.1016/S2214-109X\(13\)70177-3](https://doi.org/10.1016/S2214-109X(13)70177-3).
- Rosental, Paul-André. "The Novelty of an Old Genre: Louis Henry and the Founding of Historical Demography." *Population* 58, no. 1 (2003): 103.
- Ryder, Norman B. "Frank Wallace Notestein (1902-1983)." *Population Studies* 38, no. 1 (March 1984): 5–20. <http://login.ezproxy.lib.vt.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=sih&AN=11700604&site=eds-live&scope=site>.
- Saksena, R. N. "Obituary: Radha Kamal Mukerjee [1889-1968]." *Sociological Bulletin* 17, no. 2 (1968): ii–iv. <http://www.jstor.org/stable/23619305>.
- Samuel, T. J. "The Development of India's Policy of Population Control." *The Milbank Memorial Fund Quarterly* 44, no. 1 (1966): 49–67. <https://doi.org/10.2307/3349038>.
- Sharma, Rajendra K. *Demography and Population Problems*. Atlantic Publishers & Dist, 2004.
- Sharpless, John. "World Population Growth, Family Planning, and American Foreign Policy." *Journal of Policy History* 7, no. 1 (1995). [https://www-cambridge-org.ezproxy.lib.vt.edu/core/services/aop-cambridge-core/content/view/06551E6F91F003FFEE7C36636508B48A/S0898030600004152a.pdf/world\\_population\\_growth\\_family\\_planning\\_and\\_american\\_foreign\\_policy.pdf](https://www-cambridge-org.ezproxy.lib.vt.edu/core/services/aop-cambridge-core/content/view/06551E6F91F003FFEE7C36636508B48A/S0898030600004152a.pdf/world_population_growth_family_planning_and_american_foreign_policy.pdf).
- Silvia, Adam M. "Modern Mothers for Third World Nations: Population Control, Western Medical Imperialism, and Cold War Politics in Haiti." *Social History of Medicine* 27, no. 2 (May 1, 2014): 260–80. <https://doi.org/10.1093/shm/hku004>.
- Simpson, Christopher, ed. *Universities and Empire: Money and Politics in the Social Sciences during the Cold War*. Cold War and the University. New York: New Press : Distributed by W.W. Norton & Co, 1998.
- Solovey, Mark. *Shaky Foundations: The Politics-Patronage-Social Sciences Nexus in Cold War America*. Studies in Modern Science, Technology, and the Environment. New Brunswick, N.J: Rutgers University Press, 2013.

- Solovey, Mark, and Hamilton Cravens. *Cold War Social Science: Knowledge Production, Liberal Democracy, and Human Nature*. New York, UNITED STATES: Palgrave Macmillan, 2012. <http://ebookcentral.proquest.com/lib/vt/detail.action?docID=858927>.
- Sreenivas, Mytheli. "Population Policy in India: The Role of the Rockefeller Foundation and the Population Council." Rockefeller Archive Center, 2010. <https://rockarch.org/publications/resrep/sreenivas.pdf>.
- Stein, Burton, and David Arnold. *A History of India*. Hoboken, UNITED KINGDOM: John Wiley & Sons, Incorporated, 2010. <http://ebookcentral.proquest.com/lib/vt/detail.action?docID=485640>.
- "The World's Most Common Contraception Has a Dark Past." Pulitzer Center, September 11, 2018. <https://pulitzercenter.org/reporting/worlds-most-common-contraception-has-dark-past>.
- Trow, G.W.S. "INDIA'S HAPHAZARD BIRTH-CONTROL PROGRAM." *Ekistics* 25, no. 149 (1968): 232–33. <http://www.jstor.org/stable/43614666>.
- Visaria, Leela, Shireen Jejeebhoy, and Tom Merrick. "From Family Planning to Reproductive Health: Challenges Facing India." *International Family Planning Perspectives* 25 (1999): S44–49. <https://doi.org/10.2307/2991871>.
- Westad, Odd Arne. *The Global Cold War: Third World Interventions and the Making of Our Times*. 1st pbk. ed. Cambridge ; New York: Cambridge University Press, 2007.