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Were Indian Famines ‘Natural’ Or ‘Manmade’?

Tirthankar Roy
London School of Economics

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Tirthankar Roy

London School of Economics

Abstract

Keywords: Were the Indian famines natural (geographical) or manmade (political) in origin? I review the theories of Indian famines and suggest that a mainly geographical account diminishes the role of the state in the occurrence and retreat of famines, whereas a mainly political account overstates that role. I stress a third factor, knowledge, and suggest that limited information and knowledge constrained state capacity to act during the nineteenth century famines. As statistical information and scientific knowledge improved, and prediction of and response to famines improved, famines became rarer.

JEL Codes: N15, N35, Q54, F54

Keywords: Famine, Colonialism, Natural Disaster, India, Environment

¹ An earlier version of the paper was discussed in a workshop titled ‘Struggling nations – phrasing famines,’ held in the University of Iceland, Reykjavik, 19-20 May 2016. The discussion led to significant improvements in the draft. I wish to thank the participants in the workshop.

Famines were a frequent occurrence in South Asia until 1900, and were often devastating in impact. A series of nineteenth century famines were triggered by harvest failure. Food procurement for World War II, combined with a crop failure, caused the harshest famine of the twentieth century, the 1943 Bengal famine. Famine-like conditions recurred also in 1966 and in 1972, but the extent of starvation-induced death was limited on both occasions. Why did these episodes develop? Why did they cause death and distress on a very large scale at times? Why did the frequency of their occurrence fall in the twentieth century?

The world history of famines tends to approach these questions by using two keywords, 'natural' and 'manmade.' These terms are not rigorously defined anywhere, but they are widely used as a way to analyse the causes of famines and famine intensity.²

Usually, natural refers to a large and sudden mismatch between demand for and supply of food, caused by a harvest failure, though the disastrous effects that follow can sometimes be attributed to a prehistory of bad diet and malnutrition. Modern famine analysts and historians owe their conception of 'natural' to Thomas Malthus. Malthus used the word 'nature' in a wide range of senses, including the 'natural carelessness' with which some populations reproduced. But one meaning is particularly relevant in this context. This meaning is expressed in the sentence: 'Famine [is] the last and most dreadful mode by which nature represses a redundant population.' In other words, famine is the inevitable result of overpopulation.³ Using 'Indostan' or India as one of his examples, Malthus suggested that the yield of land was so low here and the population ordinarily lived with so little food that the effect of a 'convulsion of nature' such as a crop failure could be immediate and devastating.

Manmade now-a-days almost always refers to some sort of political action that shifts food away from one group to another.⁴ It connotes state failure. The state has a particularly important role to play because famine relief should not be priced nor withheld from anyone. State relief often fails to be enough, it is said, because politicians believe in an ideology that advocates weak relief, and the political system allows them to get away with it. The political factor is especially common during wars, in despotic regimes, and during temporary

² For a discussion of the historiography, see Cormac O'Grada, *Famines: A Short History*, Princeton: Princeton University Press, 2009. For usage of 'natural' and 'manmade' without a definition, see 'Famine: Natural or Man Made?' World Ecology Report, 20(2), 2008, http://worldinfo.org/wp-content/uploads/library/wer/english/2008_Winter_Vol_XX_no_4.pdf (accessed 3 June 2016).

³ *An Essay on the Principle of Population*, London: J. Johnson, 1798, 36.

⁴ In this sense, 'Russian and Soviet famines were largely man-made.' W.A. Dando, 'Man-made Famines: Some Geographical insights from an Exploratory Study of a Millennium of Russian Famines,' *Ecology of Food and Nutrition*, 4(4), 1976, 219-34.

breakdown of states, though the chain of events that leads to such actions might include an actual or a rumoured crop failure. In current scholarship, it is sometimes suggested that late twentieth century famines are often manmade in the sense that they are usually caused by political factors.⁵ This is plausible because food is traded in larger volumes more cheaply now than a century and a half ago, so that absolute scarcity conditions cannot possibly last unless there are deliberate obstacles to the supply and distribution of food. However, the political factor was not necessarily large in earlier times, when trade costs were considerably higher than they are now and the volume of world food production was a fraction of what it is today.

In the Indianist literature, manmade can have another construction, cultural beliefs that shaped the scale of private charity during disasters. Nobody thinks that this factor made a substantial difference to famine intensity, but it could have made a difference to the coping strategies of particular groups.

All of the three interpretations - geography, manmade-as-political, and manmade-as-cultural - have been prominent in the scholarship and popular history of past Indian famines, especially for the time when detailed records of famines were kept. This starts as recently as the mid-nineteenth century, though the occurrence of famines in India has a much longer history. The years for which some systematic documentation exist were also the years when more than half of India was ruled first by the British East India Company (until 1858), and then the British Crown (1858-1947). The political angle in the second approach, therefore, is directly or indirectly influenced by readings of European colonialism in the region.

The theory of 'natural' disaster has gone through many shifts. Although the intellectual influence of Malthus was strong upon a section of the colonial officialdom, the influence was overridden from the 1870s by commissions of enquiry that investigated the causes of the Indian famines. 'Nature,' thereafter, referred specifically to a vulnerable agrarian environment. The basic premise was that in a tropical region, water was a scarcer resource than land, but when monsoon rain was the main source of water, a big risk attached to the supply of this resource. Famine risk, thus, was embedded in the seasonal variability of monsoon rain. A shadow of Malthus persisted, but overpopulation was not the main focus any more. A further shift occurred in the early 1980s. Michelle McAlpin's work published

⁵ 'More recent famines have been smaller events, more restricted in place and time. Most have been 'man-made' rather than the result of poor harvests,' Cormac O'Grada, 'Making Famine History,' *Journal of Economic Literature*, 45(1), 2007, 5-38.

around then emphasizes trade costs, once again staying within a mainly geographical account.⁶

In a number of papers and a book, Amartya Sen argues that the apathy and inaction of the imperial Government, compounded by market failure, caused the Bengal famine of 1943.⁷ Sen's work enables asking how politics matters in humanitarian crises. Insofar as the state forms of a contract between the citizens and the rulers, famine relief should be a contractual obligation and inadequate relief a breach of a social contract. We can, then, ask if colonial regimes respected a social contract at all or not. The answer in Sen is that colonialism as a form of rule did not feel compelled to meet this obligation.

The argument has become so influential that other famine historians apply the framework to reread the nineteenth century famines. A particularly well-known work is that of Mike Davis, whose study of nineteenth century tropical famines uses the word 'manmade' to mean made-by-the-colonial-state.⁸ Davis attributes the mass death and human misery that followed the late nineteenth century famines to politics, specifically, adherence to capitalist ideology by the imperial states. The view that the late-nineteenth century famines were caused by colonialism is now treated in many circles as an axiom. For example, in the website on famines maintained by the World Peace Foundation, the explanatory notes attribute past famines to 'colonialism' whenever India pops up in the list. The mechanism is that 'famines struck ..as a result of forcible integration [of India] into the global-imperial economy in a subordinate position.'⁹

A theory of cultural failure can be traced to B.M. Bhatia. The author of a pioneering book on Indian famines, Bhatia believes that in precolonial India, 'caste and joint family systems imposed the obligation of looking after the old, the infirm, the poor, and the destitute' so well that 'the state had hardly any need to intervene.'¹⁰ British colonial rule destroyed this ideal of mutual help and social cohesion, turning scarcities into famines.

How useful are the keywords 'manmade' and 'natural' for the historiography of Indian famines? Let us subject them to a simple test. Famines were more frequent in the nineteenth

⁶ *Subject to Famine: Food Crisis and Economic Change in Western India, 1860-1920*, Princeton: Princeton University Press, 1983.

⁷ *Poverty and Famines: An Essay on Entitlement and Deprivation*, Oxford: Oxford University Press, 1983.

⁸ Mike Davis, *Late Victorian Holocausts: El Niño Famines and the Making of the Third World*, London: Verso, 2000.

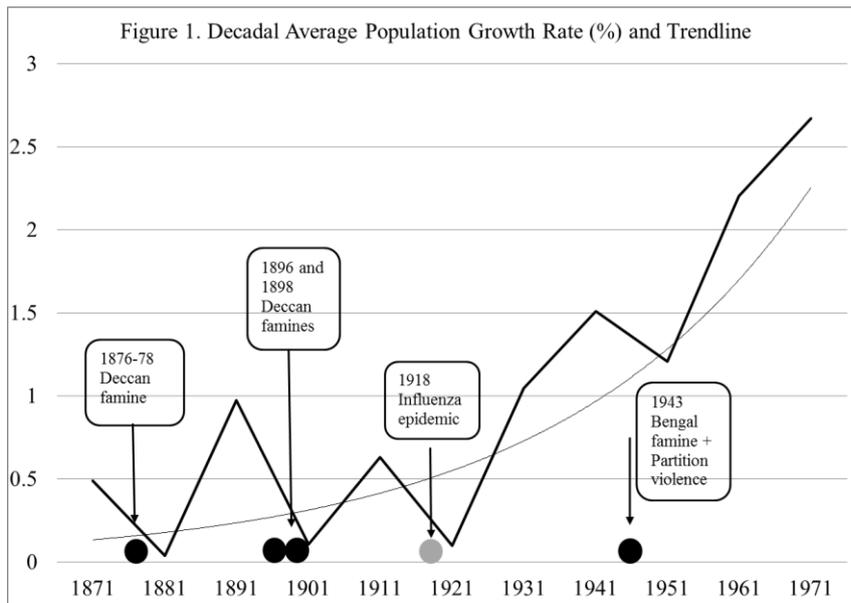
⁹ The sentence, straight from a 1970s dependency school textbook, begs the questions why the settler colonies escaped bad famines, and non-colonies suffered these. <http://fletcher.tufts.edu/World-Peace-Foundation/Program/Research/Mass-Atrocities-Research-Program/Mass-Famine> (accessed 3 June 2016).

¹⁰ B.M. Bhatia, 'Famine and Agricultural Labour in India: A Historical Perspective,' *Indian Journal of Industrial Relations*, 10(4), 1975, 575-594.

century and became less frequent after 1900, resulting in a permanent fall in mortality rates, and a demographic transition (see Figure 1). Almost the entire natural increase in population in the last quarter of the nineteenth century was removed due to the three great famines of 1876, 1896 and 1898. But thereafter, episodes of food scarcity did not lead to mass mortality on the scale they did in the past. The smooth fitted line shows that the transition occurred around 1915, and there was no significant population shock thereafter, the 1943 Bengal famine notwithstanding. Any worthwhile causal model should be able to explain both the frequent occurrence of famines and the increasing rarity of famines with reference to a single variable. If the cause of the famines was climate, we should expect that famines disappeared because climate changed around 1915. If the cause of the famines was colonialism, we should expect that famines disappeared because colonialism ended around 1915. But of course, neither of these statements is true, which means that these terms do not really explain anything. At the very least, they need to be seriously qualified.

In this essay, I suggest two specific qualifications. One of these applies to the word ‘natural.’ The interpretation of geographical agency in famines has steadily moved away from Malthusian food-vs-population discourse towards trade costs and barriers to market integration. This shift is yet to be integrated in the famine scholarship. Secondly, the ‘manmade’ famine approach overstates the capacity of the states. It implicitly assumes that state capacity is limited by the beliefs, intentions, and interests of politicians. In fact, state power was limited also by the small fiscal capacity of the state in colonial India. It was limited by geography or ‘nature’ itself, and by the paucity of scientific knowledge about the phenomena. In the long run, the state gained knowledge that improved its capacity to cope. The notion of an adaptive state needs to find a place in the famine scholarship.

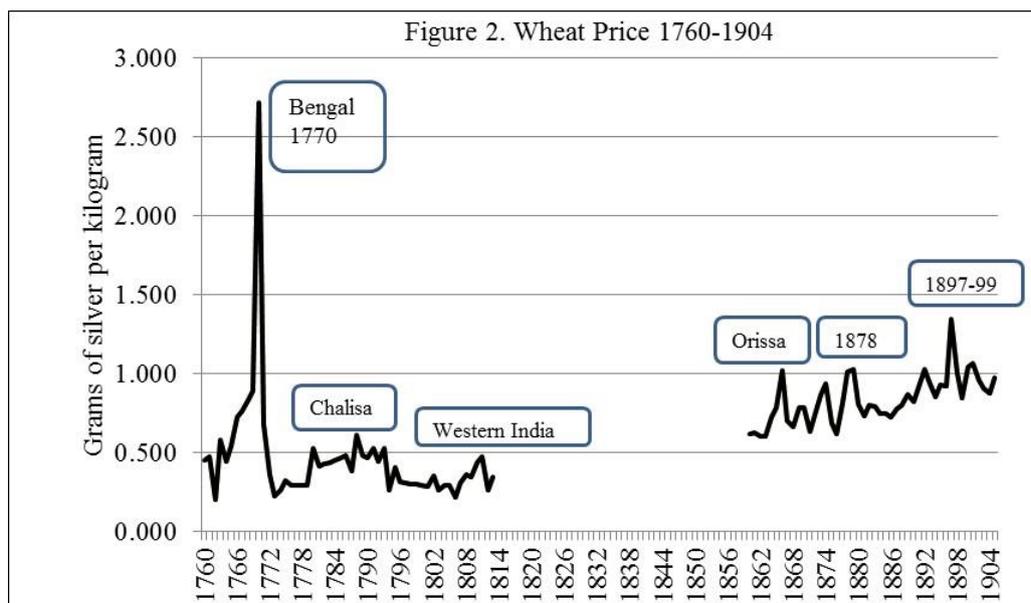
The rest of the essay has five sections. In the first two sections, I discuss the application of two theories - natural, and manmade-as-political - in the Indian context more fully. The next two sections follow up the critique of the political theory by discussing state relief and accumulation of knowledge respectively. Finally, I take a brief look at the argument that famines were manmade in the cultural sense.



Source: Census of India. Refers to undivided India.

The geographical theory of Indian famines

Some of the best-documented episodes occurred after British rule began in India. The 1769-70 famine in Bengal followed two years of erratic rainfall, but was worsened by a smallpox epidemic. The 1783-4 famine again followed a crop failure over a wide area. Known as the Chalisa, it reached near the then Company territories but did not exactly penetrate these. The 1812-3 famine in western India, which affected the Kathiawar region especially, came in the wake of several years of crop loss due to attacks by locusts and rats. The Guntur famine of 1832-3 followed crop failure as well as excessive and uncertain levels of taxation on peasants. In at least three episodes in nineteenth century western India – 1819-20 in Broach, 1820-2 in Sind, and 1853 in Thana and Colaba – famines were caused by monsoon flooding and resultant crop loss. The 1865-7 famine in coastal Orissa followed several seasons of erratic rainfall, but was worsened by the persistent refusal of the local administration to import food. In the last quarter of the nineteenth century, major famines causing in excess of a million deaths occurred thrice, 1876-8, 1896-7 and 1899-1900. In each case, there was a crop failure of unusual intensity in the Deccan plateau. In the twentieth century, major famines were fewer. In 1907-8, an extensive crop failure and epidemic threat was effectively tackled by the state relief machinery. As mentioned before, the 1943 war famine was the last major episode to occur in the region.



Source: Global Prices and Incomes History Group, <http://gpih.ucdavis.edu/> (accessed 3 June 2016). Dataset contributed by Peter Lindert and Roman Studer.

The proximate cause of famines, without exception, was a sharp rise in food prices, which in turn reduced real wages and caused starvation, malnutrition and epidemic, mainly among agricultural labourer groups. Problems appear when we try to explain the rise in prices with supply shocks such as harvest failure or demand shocks such as warfare. As Figure 2 shows, many famines were associated with large and small spikes in grain prices. It is, however, impossible to predict a stable quantitative relationship between the degree of stress and the extent of price rise, because the relationship was mediated by too many unknowns, including information, infrastructure, and fiscal and trade policy.

The geographical theory holds that price shocks were the result of supply shocks. Many of the cases described above illustrate uncertainty over monsoon rainfall in an arid tropical climate, and consequently, the size of harvest and supply of food in the market. In the oldest general theory of causation, ecology has a fundamental role, and supply shocks a proximate one. Developed and advocated by the official fact-finding missions directly involved with famines in India, especially the Famine Inquiry Commission and the Irrigation Commission, the explanation insisted that agriculture under tropical monsoon conditions involved excessive dependence on dry or rain-fed cultivation, consequently low productivity of land as well as high risk of harvest failure. One of the first large-scale enquiries, Indian Famine Commission of 1880, concluded that, 'the devastating famines to which the provinces of

India have from time to time been liable are in all cases to be traced directly to the occurrence of seasons of unusual drought.¹¹ Not all regions were equally affected, of course. But those ‘poor in soil, their rain-fall precarious, little .. artificial irrigation [were] severely affected whenever drought visited.’¹² One of the last colonial-era Famine Inquiry Commissions summed up the view thus: ‘the primary problem is that of underdevelopment of resources.’¹³

This is the ecological account of famines. When it was first articulated, it disputed an assumption shared by some British Indian administrators that famines represented Malthusian checks on population growth, and that human or state intervention could not or should not try to solve the problem.¹⁴ Others believed in a moral hazard, that state relief would make many people, who were not too distressed, to seek relief.¹⁵ The Commissions’ advocacy changed both attitudes. It had two specific effects, the formation of an emergency-response or a relief system the implementation of which was left to the provinces, and justification for government investment in irrigation canals.

Were the Commissions correct in their reading of the causation of famines? The introduction set out a simple test for famine theory of any kind. A good theory must explain the occurrence of famines and the disappearance of famines within a single model. A hard-core geographical theory does not meet that condition, because rainfall patterns and average temperature did not change dramatically in the last 150 years. A geographical theorist may contend that appropriate response to mitigate the geographical condition would include irrigation investment, which in turn, would enable multiple cropping and reduce the impact of one failed crop. This proposition was true, and on this basis, irrigation investment was earnestly advocated by the Commissions, but it is not very relevant. Subject to the available engineering knowledge and budget constraint, investment in irrigation tended to be biased towards regions that had snowmelt perennial river systems, some of which were not particularly water scarce or famine prone. The arid regions were not well served by interventions to mitigate the effects of aridity.

In a modified geographical approach, the accent falls not upon harvest shocks as such, but on trade costs. In this variant, price rise during famines is seen to be a result of supply

¹¹ India, *Report of the Indian Famine Commission. Part I: Famine Relief*, London: HMSO, 1880, 7.

¹² *Ibid.*, 5.

¹³ The 1945 Commission, cited in Ashish Bose, ‘The Population Puzzle in India,’ *Economic Development and Cultural Change*, 7(3), Part 1, 1959, 230-248.

¹⁴ S. Ambirajan, ‘Malthusian Population Theory and Indian Famine Policy in the Nineteenth Century,’ *Population Studies*, 30(1), 1976, 5-14; Simon Commander, ‘Malthus and the Theory of ‘Unequal Powers’: Population and Food Production in India, 1800-1947,’ *Modern Asian Studies*, 20(4), 1986, 661-701.

¹⁵ David Hall-Matthews, ‘The Historical Roots of Famine Relief Paradigms’ in Helen O’Neill and John Toye, eds., *A World Without Famine?*, Macmillan, Basingstoke and London, 1998, 107-121.

failure, but emphasis falls on a variable mediating the two sides - market infrastructure. Michelle McAlpin contends that the cause of the nineteenth century Deccan famines was that, relative to the scale of a harvest shock, the market failed to move grain in sufficient quantities over the large region. In the twentieth century, the capacity of markets to move grain at cheaper rates improved greatly. McAlpin conducted tests of the hypothesis, directly by trying to explain famine outbreaks in Bombay in the period 1870-1920, and indirectly by asking why famines disappeared between 1900 and 1943. She concludes that 'deficient rainfall caused the crop failures' in both times. After 1900, the relief system worked steadily better to prevent mass mortality, but more importantly, trade costs fell with the growth of the railway network.¹⁶ Drawing a clear lesson from these findings is difficult because of a further factor, control of epidemic diseases, which in fact accounted for more deaths than did starvation in the earlier famines. McAlpin attributes epidemic control (control of cholera especially) to famine prevention itself, but the interdependence between nutrition, disease, and death remains open to question.¹⁷

McAlpin's book, a consolidation of her mainly statistical essays, appeared in the same year that Sen published his book on famines.¹⁸ In view of Sen's mainly political account of famines, many readers believed that McAlpin underestimated political agency. In any case, the reception to the book was sharply critical.¹⁹ Recent statistical research, in fact, supports

¹⁶ M.B. McAlpin, 'Famines, Epidemics, and Population Growth: The Case of India,' *Journal of Interdisciplinary History*, 14(2), 1983, 351-66. M.B. McAlpin, 'Dearth, Famine, and Risk: The Changing Impact of Crop Failure in Western India, 1870-1920,' *Journal of Economic History*, 39(1), 1979, 143-57.

¹⁷ On the relationship between famine and non-famine causes of mortality, a rich literature exists. The most important references should include Arup Maharatna, *The Demography of Famines. An Indian Historical Perspective*, New Delhi: Oxford University Press, 1996; Tim Dyson, 'On the Demography of South Asian Famines,' *Population Studies*, 45(1), 1991, 5-25 (Part I), 45(2), 1991, 279-292 (Part II); and Kohei Wakimura, 'Famines, Epidemics and Mortality in Northern India 1870-1921,' in Peter Robb, Kaoru Sugihara and Haruka Yanagisawa, eds., *Local Agrarian Societies in Colonial India: Japanese Perspectives*, Richmond, Curzon, 1996, 280-310.

¹⁸ McAlpin, *Subject to Famine*; Sen, *Poverty and Famines*.

¹⁹ Although Paul Greenough in the *Journal of Economic History* and the *American Historical Review*, and Peter Robb in the *Economic History Review*, were favourable, most reviews were hostile. David Arnold criticizes 'her disinclination to consider the negative consequences of British rule,' Crispin Bates says that 'McAlpin has merely reproduced the neo-classical prejudices and naivety .. common to many so-called 'cliometricians',' and Amrita Rangasami calls the book 'a falsification of history.'¹⁹ David Kopf, in a mildly sympathetic review calls it an 'idealization of colonial rule and rulers.' Arnold, Review in *Journal of Peasant Studies*, 12(4), 1985, 132-135; Bates, Review in *Modern Asian Studies*, 19(4), 1985, 866-871; Rangasami, 'The McAlpin Capers,' *Economic and Political Weekly*, 19, 1984, 1524-1528; Kopf, review in *Journal of Interdisciplinary History*, 16(1), 1985, 177-179. V. Damodaran, in a study of the 1770 famine in Bengal criticizes McAlpin's claim that growth of trade was a mitigating factor, and suggests that 'the gradual erosion of traditional systems of subsistence and its ecological basis, access to common lands, trees etc.' in the wake of commercialization made famines more likely. Given the available evidence, this is a plausible hypothesis, but not well established for 1770. It gets more support in a second case study, 1896-7 famine in the forested Chotanagpur area. See 'Famine in Bengal: A Comparison of the 1770 Famine in Bengal and the 1897 Famine in Chotanagpur,' *Medieval History Journal*, 10(1-2), 2007, 143-181. The message that no one generalization about trade is likely to apply to all regions of India equally is a sound one.

McAlpin's main results. The hypothesis that reduced costs of trade, or the 'openness' of agricultural producers to trade, mitigated famines has received support in a work by Robin Burgess and Dave Donaldson, who conclude their econometric study with the finding that 'rainfall shortages had large effects on famine intensity in an average district before it was penetrated by India's expanding railroad network. But the ability of rainfall shortages to cause famine disappeared almost completely after the arrival of railroads.'²⁰ That openness to trade may have mitigated famines in the twentieth century has a corollary – openness did not worsen famines in the nineteenth century. Classical liberal economists advocated free trade, and the Indian nationalists contended that free trade made famines more likely and weakened the relief effort.²¹ McAlpin claimed that the nationalists were wrong. Again, statistical research shows that she may have been right on the point.²²

Roman Studer's recent work on market integration establishes two propositions that support McAlpin's market theory of famines. First, price correlations between market sites were lower in India for similar distances than in Europe in the eighteenth and early nineteenth century, suggesting that 'trade networks and market structures were shaped by geography more directly than by political boundaries' in both regions, and that 'nature burdened India with more hurdles to overcome.' The correlation rose in India from the late nineteenth century, showing the effect of railways and cheap bulk transportation in reducing trade costs. Secondly, within the Deccan plateau, which was dominated by an arid and undulating landscape, market density was relatively small. The fact that McAlpin also studies the same broad region, makes the propositions particularly relevant.²³ I have suggested, in the same spirit, that physical communication barriers made information about local agricultural conditions scarce and slow to travel, which affected the quality and speed of response to famines in the nineteenth century.²⁴

Do these works conclusively show that the trade cost version of the geographical causation theory is better than the other alternatives? They do not, because the political dimension remains undeveloped in this approach, notwithstanding a description of relief works. The broader question – does the nature of the state matter to the response to a

²⁰ Robin Burgess and Dave Donaldson, 'Can Openness Mitigate the Effects of Weather Shocks? Evidence from India's Famine Era,' *American Economic Review*, 100(2), 2010, 449-453.

²¹ On the Indian nationalists, see Bipan Chandra, *The Rise and Growth of Economic Nationalism in India*, New Delhi: People's Publishing House, 1966.

²² On this test, see Martin Ravallion, 'Trade and Stabilisation: Another Look at British India's Controversial Foodgrain Exports,' *Explorations in Economic History*, 24(4), 1987, 354-370.

²³ Roman Studer, *The Great Divergence Reconsidered. Europe, India, and the Rise to Global Economic Power*, Cambridge: Cambridge University Press, 2015.

²⁴ Tirthankar Roy, *Natural Disasters and Indian History*, New Delhi: Oxford University Press, 2012.

humanitarian crisis? – remains more or less unaddressed. For a perspective that builds on a theory of the state, we have to turn to the political theory of famines.

The political theory of Indian famines

Until about 1980 the ecological account held strong in economic history textbooks. The accusation that the British Indian state did less than it could during the great famines of the nineteenth century, and made things worse by its support for free trade, had in fact been made by the Indian nationalists. But the accusation appealed mainly on an emotional plane. In the late-1970s, Amartya Sen helped establish the nationalist thesis that famines represented what Arnold calls ‘the negative consequences of British rule’ on a solid foundation.²⁵ The theory has two parts, one part explains causation of famines and another explains the degree of exposure of population groups, with the concept of ‘entitlement’. The second aspect is linked to a problem of deciding who suffers the most during famines, and the answer varies somewhat depending on whether the famine is caused by supply shock or price shock without supply shortfall.²⁶ This second aspect is not directly relevant to the present paper, and will remain outside it.²⁷

The first part of the theory states that price shocks can occur independently of supply shocks, leading to sharp fall in real wage in terms of food prices, and thus, famine. The theory does not offer a generalizable hypothesis on *why* price shocks might occur without supply shocks. Sen illustrates the proposition with the example, from South Asia, of the 1943 Bengal famine and 1974 Bangladesh famine. The 1943 famine happened during World War II and large purchase of food for the military. A demand shock led by the state was the immediate cause of the famine. The deeper cause was ‘the conspicuous failure of the Government’ to predict and to ‘break’ the famine.²⁸

1943 was a war famine, and war complicates the story of the response. Around August 1942, the Japanese occupation of Burma turned the external border of Bengal the eastern front of the World War II. Because the demand spike was caused by the War, and the supply shortfall had owed to disruption of Indo-Burma trade after Japanese occupation of Burma, the

²⁵ Sen, ‘Famines as Failures of Exchange Entitlements,’ *Economic and Political Weekly*, 11(31/33), 1976, 1273-80; *Poverty and Famines*.

²⁶ See the useful discussion in respect of the Bengal famine in Cormac O’Grada, ‘The Ripple That Drowns? Twentieth-Century Famines in China and India as Economic History,’ *Economic History Review*, 61(S1), 2008, 5-37.

²⁷ For a discussion of the debate around entitlement, see Martin Ravallion, ‘Famines and Economics,’ *Journal of Economic Literature*, 35(3), 1997, 1205-1242.

²⁸ Sen, *Poverty and Famines*, 78-79.

state in a sense created the crisis, unlike in ecological accounts, where the state responded to an exogenous crisis. The fact that mass deaths did occur in Bengal has led Sen and a number of historians of the episode to hold politicians' bad faith responsible for the deaths.²⁹ The famine occurred because the colonial state deliberately did not meet its social obligations. Sen's reading of the evidence suggests that the famine was engineered by the state, out of indifference, or a mistaken faith in markets. In his words, 'the disastrous confusion behind imperial policies' that if there was no absolute shortage of food a famine was impossible, caused the famine to happen.³⁰ In an earlier statement, Sen blamed market failure and speculative hoarding of food by merchants to explain the famine.³¹ A stronger indictment of the Raj, which held colonial intention to hurt as the responsible factor, can be found in Madhusree Mukherjee's study of the famine.³²

The approach has been influential for a number of reasons. First, it makes the ecological account valid only some of the time, if at all. It suggests that we should look at inequality in the capacity to command food during any major food crisis in order to understand its effects. There is a further reason for its wide influence. Although this approach is not in the main a critique of colonialism, a critique of despotic states is an integral part of the analysis. This side was later extended into an explanation of why famines disappeared. Comparing postwar India and China, Sen attributes the disappearance of famines in India to the democratic political system and free press, which made politicians answerable for mass starvation. 'In the field of famine prevention,' the argument goes, 'the contrast between India and China may have at least as much to do with politics as with economics. A big difference is made, I believe, by the pluralist nature of the Indian polity.'³³ India, of course, developed such a polity only after 1947. Even though not wholly a criticism of colonialism, Sen's statement that 'there has been no famine in India since Independence' begs the notion that independence led to the disappearance of famines, and therefore, colonialism had caused them.

There are three major weaknesses of the political theory of famines as articulated by Sen. First, the nature of the state cannot explain the disappearance of famines, and therefore, nor can they explain their causation. The disappearance of famines did not start in 1947 but

²⁹ Madhusree Mukherjee, *Churchill's Secret War*, New York: Basic Books, 2009; Asok Mitra, 'Famine of 1943 in Vikrampur Dacca,' *Economic and Political Weekly*, 24(5), 1989, 253-64.

³⁰ Quoted by Mark B. Tauger in an exchange in the *New York Review of Books*, see <http://www.nybooks.com/articles/2011/05/12/bengal-famine/> (accessed 30 April 2016).

³¹ Sen, 'Famines as Failures.'

³² *Churchill's Secret War*.

³³ Amartya Sen, 'Indian Development: Lessons and Non-Lessons,' *Daedalus*, 118(4), 1989, 379-92.

around 1915 (Figure 1), when India was still a colony, and democratic experiments had not begun. This statement is mildly qualified by the Bengal famine of 1943, but is not upset by it. Other scholars who have researched the 1943 Bengal famine have offered somewhat different interpretations of the episode. Mark B. Tauger and Cormac O'Grada consider that Sen underestimates the supply shock and overestimates market failure.³⁴ Islam suggests that the number of near-destitute was already large in Bengal, owing to a slow-developing mismatch between food and population, when the famine struck.³⁵ Although generally in agreement on the point that the Bengal famine did not happen because of a supply shock, Paul Greenough argues that government regulation of the grain market led to adverse expectations, and in turn, rise in prices.³⁶ Another analysis by Lance Brennan also reveals a complicated pattern of response.³⁷ Greenough and Islam discuss a gradual process of diminishing returns to agriculture in the Bengal delta, which had made a crisis likely.³⁸ Bose places the famine in the backdrop of a post-Depression crisis in the small peasant economy of Bengal, where 'the subsistence foundations of agriculture had for some time been cracking.'³⁹ Some of this research points at the unstable and divided nature of the provincial government as a factor behind weak relief effort.

These issues apart, there is a third fundamental problem of the political approach. A claim that famines were 'manmade' implies that the failure of relief was somehow intentional. The political theory makes this claim explicitly, by suggesting that the factor contributing to famine intensity was located outside the domain of production, even economics. It was formed of ideological positions or self-interested priorities defined by powerful actors. This hypothesis implicitly assumes that the capacity of the state was given exogenously, usually adequate for effective relief, but it was deliberately underutilized. This assumption seems to be shared by most contributors to the famine literature. At least, it has not been seriously challenged. Because the politician was a free agent, he or she was culpable for the crime of not acting. In Mukherjee's account, none other than Winston Churchill was

³⁴ Mark B. Tauger, 'Entitlement, Shortage and the 1943 Bengal Famine: Another Look,' *Journal of Peasant Studies*, 31(1), 2003, 45-72. O'Grada, 'The Ripple,' concludes, 'in the case of Bengal, .. there was indeed a 'FAD' [food availability decline] and that denying this has led to an undue historiographical focus on hoarding,' that is, speculative trade. In the case of 1974 too, a supply shock was present.

³⁵ M. Mufakharul Islam, 'The Great Bengal Famine and the Question of FAD Yet Again,' *Modern Asian Studies*, 41(2), 2007, 421-440.

³⁶ Paul Greenough, *Prosperity and Misery in Modern Bengal: The Famine of 1943-44*, New York: Oxford University Press: New York, 1982.

³⁷ Lance Brennan, 'Government Famine Relief in Bengal, 1943,' *The Journal of Asian Studies*, 47(3), 1988, 541-566.

³⁸ Islam, 'The Great Bengal Famine.'

³⁹ Sugata Bose, 'Starvation amidst Plenty: The Making of Famine in Bengal, Honan and Tonkin, 1942-45,' *Modern Asian Studies*, 24(4), 1990, 699-727.

the most culpable of all actors. Whatever the merits of the view for 1943, how sound is the general argument that relief was a matter of free choice?

Was the state free to act?

Natural disasters from a long time past elicited actions organized by the state and actions organized by social bodies. Economic historians have sometimes answered the question, how colonialism made a difference, by drawing on interpretations of precolonial patterns of response. The accent in these discussions tends to fall on ideologies rather than on capacities, which, I suggest, is a misleading thing to do.

Commenting on the Bengal famine of 1769-70, Prasannan Parthasarathi writes that ‘pre-British political practice .. was to [organize] food distribution on a massive scale.’⁴⁰ If this is true, the subsequent history of colonial famines would mean that the pre-British rules were welfare-minded whereas British rule was not. This proposition is not testable because no one can say how large or how effective precolonial relief effort really was. The unfinished debate on whether the Mughal state was centralized or decentralized leaves the responsibility for relief open to question, and hard to test. Dharma Kumar holds a cautious position on precolonial state activity. ‘Pre-British governments in India,’ she writes, ‘did try to counteract the effects of famine by takkavi loans, the distribution of grain from public granaries, and so on; in addition, temples and rich individuals provided charity in cash and food. But public and private resources were limited.’⁴¹ Furthermore, the position that the precolonial state was highly active in famine relief seemingly contradicts B.M. Bhatia’s conclusion that the state did not need to act at all in precolonial India because society stepped in to feed the hungry. The truth is that both arguments are speculative, and stem from the assumption that colonialism destroyed a mythical golden age, whether that of the welfare state or of an altruistic society.

In fact, the scale of the event was never predictable in natural disasters, and therefore, no insurance or preparedness could be fool proof. The event impaired state capacity. For example, famines caused grain riots, which was a type of crime the police would not deal with in normal times. Variability of scale raises a particular problem for the historian as it did for contemporary states. Davis traces the origins of nineteenth-century famines to the ENSO (El Niño Southern Oscillation) in the eastern Pacific, and consequent climatic disturbances in

⁴⁰ *Why Europe Grew Rich and Asia did not*, Cambridge: Cambridge University Press, 2012, 78.

⁴¹ Dharma Kumar, ‘States and Civil Societies in Modern Asia,’ *Economic and Political Weekly*, 28(42), 1993, 2266-2269.

the rest of the world, especially in monsoon wind patterns in India.⁴² ENSO, according to one set of simulations in a contentious and unfinished debate, may intensify in future due to global warming potentially causing disasters on a scale with which states do not yet have the means to cope. The point of the debate and the subsequent call for preparedness is not that the class of events predicted to occur is totally new, but that the scale changes in an unpredictable way. This debate foregrounds *variability in scale* of natural disasters as a fundamental feature of natural disasters. That an earthquake-prone area is likely to experience an earthquake is a known risk, but few would be willing to buy an insurance because the timing and the scale of the next earthquake are not measurable risks. For the economist and the historian, variability of scale means that the agencies assigned the task of relief were systematically underprepared, and the problem of matching capacity with the scale was systemic.

In the nineteenth century famines, the problem showed up as delayed action. The state possessed very limited means to collect, transmit, and process local data on harvest. The Raj was a small government. Tax revenue formed about 3 per cent of GDP and public administration 5 per cent in 1931.⁴³ It was not a weak state, for it spent a great deal of its earning on the military. But in many areas of governance it was light-touch at best. For example, it did not have a dense network of local administration. Not surprisingly, detailed reports during the 1896-7 episode revealed the extremely limited penetration of the administration in the famine-affected villages. Revenue officers could not hope to visit more than a few dozen villages near the place they were stationed, and in monsoon a fraction of that number, because travel became almost impossible along minor roads. Despite the existence of a relief operation system, it almost never worked timely. Revenue officers who were located closest to the event had no reliable way of measuring crop output. They became aware of such events months after these had begun, by observing the wanderings of emaciated people out of the districts of their origin.

As late as 1943, the debate on the Bengal famine tells us, there was massive confusion over the extent of supply and demand changes because different agencies gave different pictures. The problem was much worse in 1876. In a recent book, I have argued that the human misery following the nineteenth century famines in India had more to do with the limited means – poor information, meagre infrastructure, and small fiscal capacity – that the

⁴² *Late Victorian Holocausts.*

⁴³ British India was small not only in comparison with contemporary Britain or postcolonial India (government expenditure formed 22 per cent of GDP in 1981), but also with other emerging economies of the time such as Imperial Russia and Meiji Japan.

British imperial state had at its disposal when dealing with natural disasters of such magnitude, than with liberal ideologies or capitalism.⁴⁴

Even when a famine is not preceded by a supply shock, or preceded by only a mild one, a sharp rise in prices can occur for reasons that the state neither knows nor has the means to cope with effectively. This is shown in Brennan's study of the Bengal famine, which draws attention to something the author calls 'distributive competition.' An actual shortage of grain, however mild, or the expectation of one, fuelled by war in this case, would intensify competition for food between those who afforded to pay somewhat higher prices for grain and those who did not. Organized relief usually made a distinction between the two groups, allocating controlled markets for one and free kitchens for the other. But there was no way the government officers could decide who belonged in which set. And therefore, distributive competition ended by diverting food from the kitchens to the markets. The bigger the inequality between these two groups, the greater the relative market power of those who could afford to pay, and greater the prospect of diversion. Islam's account of 1943 suggests that inequality was already large in Bengal.⁴⁵ With the introduction of the relief system of August 20, 1943, a competition was established between the cheap grain shops and the gruel kitchens in lower Bengal. In theory the diversion was a problem of poor policing and enforcement. That policing would fail in a situation where the state was preoccupied with the War, the provincial government was racked by factional rivalry, and corruption was rife among the police, is not surprising. The intention of the imperial order did not matter very much to what happened thereafter.

If famines became disasters because state capacity to cope was limited, they also induced a learning process which contributed to gaining better capacity over time. If the causation of famines was 'manmade' to an extent, an effective response package was also manmade. States learnt lessons from natural disasters, and thus became better at dealing with them. This is a key argument of my book, *Natural Disasters in Indian History*. Let me restate the argument.

What lessons did the state learn?

Richard Grove suggests that the eighteenth century research on nature in the tropics was an expression of a developing global environmental sensibility rather than being a

⁴⁴ Roy, *Natural Disasters*.

⁴⁵ Islam, 'The Great Bengal Famine.'

specifically imperial project driven by either profit or power.⁴⁶ I argue in my book that the conceptualization of tropical cyclones, plate tectonics, and the variation in the monsoon formed a late-enlightenment enterprise, propelled by curiosity about the natural world and a desire for better prediction of natural disasters. The research led to a different kind of understanding of natural disasters like famines, earthquakes, and storms from traditional moral science and traditional natural philosophy. Famines, precisely because they caught the modern state unprepared, generated a discourse of better preparedness. The long-term outcome of that enterprise was a sophisticated meteorological office, which predicted and still predicts monsoons with remarkable accuracy.

My hypothesis questions a strand in the historiography of colonialism, which does recognize knowledge-making by the state, but applies a political motivation to it. Edward Said's *Orientalism* sees the colonial knowledge-making enterprise as a tool of governance. Influenced by Said, a number of works treat the famines as an occasion for the state to study Indian society and gather knowledge of it, which would help the British rule over Indians more intelligently.⁴⁷ My interpretation of the enterprise is that gaining power over people was not the main aim of the project. Gaining power over nature was the aim. With disasters, this would mean being able to predict disasters better. That, at least partly, was the aim of research on climate and geology.

What lessons were learnt from 1876-77, 1896-7 and 1899-1900, and how might they make a difference? One lesson learnt was that information was a key resource with which to battle famines. The system needed not only weather data, but also more and better quality of agricultural statistics. During the Orissa famine of 1866, the officers put up public notices displaying the price of rice in different markets, hoping to induce traders to send more grain to the high-priced markets. By 1900, the information gathering and dissemination effort was conducted on a much larger scale. The real need for statistics was in predicting crop output when the crop was still standing in the fields. It was in prevention of famines that 'the importance of agricultural statistics is very great'.⁴⁸

Secondly, if the famines were to yield useful knowledge, a sense of history was necessary. There was as a result a continuous increase in the volume of information

⁴⁶ *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism*, Cambridge: Cambridge University Press, 1995.

⁴⁷ U. Kalpagam, 'Colonial Governmentality and the 'Economy'', *Economy and Society*, 29(3), 2000, 418-38; Sarah Hodges, 'Governmentality, Population and the Reproductive Family in Modern India,' *Economic and Political Weekly*, 39(11), 2004, 1157-63; Gyan Prakash, *Another Reason: Science and the Imagination of Modern India*, Princeton: Princeton University Press, 1999.

⁴⁸ British Parliamentary Papers, enquiries on the 1866 Orissa famine, cited in Roy, *Natural Disasters*.

produced. For example, the volume of printed correspondence of the East India Company (then sharing power in Bengal) on the 1770 Bengal famine would not exceed a hundred pages. The 1896-7 Deccan famine produced printed correspondence amounting to more than 5000 pages, not counting private works. Some of these works, like that of Colonel Baird-Smith who analysed the Doab famines in the mid-nineteenth century, were sponsored by the government. The documentation and analyses created a continuous memory of famines from 1770 in Bengal, through 1783 in Punjab and the Doab, 1833 in Guntur, 1837 in the eastern Doab, Orissa in 1866, to the great Deccan famines of 1876, 1896 and 1899. The later reports joined the past events together, and drew lessons on what had gone wrong from a rapidly growing dataset. The Famine Codes that set out templates for relief operations drew on this resource.

Third, weather prediction was of critical importance to the task of famine prevention. In relation to Indian meteorological research from the 1870s, Katherine Anderson writes that ‘India .. provided .. an ideal laboratory in which to develop a scientific command of the unruly forces of the atmosphere. .. [K]nowledge gained and applied in India offered potential control of .. famine.’⁴⁹ Although derived from a global project, this research effort needed to develop its own distinct methods tuned to the tropical monsoon environment.

A fourth lesson learnt was that epidemic control was just as important as timely supply of food. The late nineteenth century famines also showed the demographic dynamic of such episodes more clearly than before. Famines killed their victims directly by making food unaffordable and indirectly by exposing the vulnerable population to epidemic outbreaks. Scarcity of food and water drove the poor to contaminated sources of water and poor quality food, and undernourishment weakened resistance to bacteria. Three diseases - cholera, plague and malaria - took heavy toll of life in the late-nineteenth, and all of them contributed to famine mortality. The control of diseases, in turn, contributed to a permanent decline in mortality from the second decade of the twentieth century.

Fifth, private insurance failed. The widely held belief among the peasants themselves that ‘the old hoarding system, combined with the ordinary course of trade, insured a sufficiency of grain to carry the population of any province through a single bad year’, had become an unworkable principle in the late nineteenth century because private grain stocks

⁴⁹ *Predicting the Weather: Victorians and the Science of Meteorology*, Chicago and London: University of Chicago Press, 283.

were lower than before and grain moved over longer distances rather than trading locally, so that food had to travel far to reach the needy.⁵⁰

Finally, rumours of market failure were exaggerated. Whereas it was suggested both in contemporary accounts and in present-day historiography that food markets failed because of rapacious traders working in league with politicians, sources suggest that markets worked quite well, and that the greed and speculation of the private merchant were overstated.⁵¹ Every famine gave rise to the accusation that merchants hoarded grain in anticipation of speculative gains. In most cases this was an unsubstantiated rumour. In a small town, it was too dangerous for the trader to do such a thing. In Bombay in 1897, private stocks could not be hidden from consumers, other traders, and the notables like the landlords. Any attempt to move grain during the famine risked predatory attacks by hungry mobs that patrolled the roads waiting for such chances. Peer pressure from the less fortunate traders induced others to sell. And the notables pressured the merchants in their domain to start charity work. O'Grada has examined the allegation of speculation in the 1943 Bengal famine, and found that it was turned into a bogey by the media, the politicians, and some economists.⁵² That famines should make us market-pessimists is a remarkably persistent idea. It is a core ingredient in Sen's explanation of 1943 in Bengal. It is not substantiated by historical evidence.

Colonialism points at a certain way western impact contributed to famines. Quite a different way in which that contact made a difference for the welfare of ordinary Indians involved the concept of altruism.

Did culture matter?

There was a difference between the state and society in the relief effort in that, if state relief can be seen as part of a contract and famine relief a contractual obligation, social relief was a voluntary act.⁵³ In other words, the cultural theory of famines concentrates on the place of altruism in collective action. But even though state and private actions refer to different variables that evolve by different rules, in India's case there was a shared dynamic of European expansion that shaped both spheres.

⁵⁰ British Parliamentary Papers, enquiries on the 1866 Orissa famine, cited in Roy, *Natural Disasters*.

⁵¹ David Hardiman suggests that free trade and hoarding, carried out under direct or indirect sponsorship of the colonial state, made famine conditions worse in western India. This is plausible, but how much the merchants' ability to do this was affected by the threat of grain riots, and how different the pattern of behaviour was from precolonial practices are not clearly explained, perhaps cannot be known. See Hardiman, 'Usury, Dearth and Famine in Western India,' *Past and Present*, 152, 1996, 113-156.

⁵² 'The Ripple.'

⁵³ On this distinction, see David A. Kennett, 'Altruism and Economic Behavior: II: Private Charity and Public Policy,' *The American Journal of Economics and Sociology*, 39(4), 1980, 337-353.

It has been mentioned before that Bhatia thinks society supplied the needed relief before the British came, whereas colonialism weakened that response by destroying social values. In fact, we do not know enough about how well values translated into real action in precolonial India. Kumar, in her examination of how welfare-minded the precolonial state was, suggests that the practice common before 1800 to explain disasters as divine punishment for sins committed by the sufferers could not have supplied a strong motivation to start charity.⁵⁴ Speculative as these arguments are, they raise an important question, did westernization change the nature of famine relief in the recent past?

Sociologists and anthropologists who have studied how culture made a difference from the nineteenth century, differ in their views on the evolution of philanthropic ideals during the colonial times. Dick Kooiman shows in an anthropological history of Travancore – a princely state and not a colonial territory – that nineteenth century famines broke up social cohesion among vulnerable population.⁵⁵ A large and diverse scholarship suggests that far from causing the death of altruism, colonial modernization induced new ideas of altruism as it reshaped merchant identity, notions of citizenship, and patronage relations. Historians seem to agree that charity and philanthropy took on a new meaning in the wake of Indo-European cultural encounter, and did not necessarily shrink under the weight of commercialization and colonial rule. They do not agree on what new meaning, if any, philanthropy acquired in the colonial era.

‘Voluntary famine relief activities during the 1890s,’ Georgina Brewis concludes, ‘mark a transition from traditional religious philanthropy to organised social service.’ The core process was a transformation of private effort to help from ‘club goods’ that tended to exclude some people to the more inclusive public goods. Other works on philanthropy and charity also stress that rather than an old charitable sentiment drowning under a wave of commercialization, wholly new ideals took shape, which were often encased in old idioms of social service. Carey Watt shows that among the middle classes a notion of social service emerged around the turn of the twentieth century as a part of the new nationalist sentiment.⁵⁶ It drew on traditional, sometimes religious, idioms of service, and combined these with western associational practices. Sunil Amrith says that ‘from the late nineteenth century, food was at the heart of secular interventions to improve the welfare of the population of India,’

⁵⁴ Kumar, ‘States and Civil Societies.’

⁵⁵ Dick Kooiman, ‘Mass Movement, Famine and Epidemic: A Study in Interrelationship,’ *Modern Asian Studies*, 25(2), 1991, 281-301.

⁵⁶ Carey Watt, *Serving the Nation: Cultures of Service, Association, and Citizenship in Colonial India*, New Delhi: Oxford University Press, 2005.

and shows how ‘the problem of hunger’ led to an elaboration of older religious notions of charity at the same time.⁵⁷ Mattison Mines explores public charity in Tamil Nadu performed by a type of community leaders he has called in an earlier work ‘big men’. Their sponsorship of temples, education and the arts peaked during 1915-50, partly because the British decided to honour these acts.⁵⁸ It is more than likely that the prehistory of charity organized by big men and encouraged by state recognition went back to the famines in Madras Presidency. Douglas Haynes shows that the formation of elite identity among mercantile communities also refigured notions of public charity.⁵⁹

The recent work of Brewis suggests a number of hypotheses on how private charity directed at famine relief specifically was organized and may have evolved in the colonial times.⁶⁰ The work shows that both the East India Company and the Christian missions preferred institutional relief to the sporadic relief effort organized by local landlords. ‘In periods of scarcity [the government] sought to channel and control indigenous giving.’ In the late nineteenth century, the government’s own fundraising activity operated in both Britain and in India. While the government fund dominated charitable effort and much of the money was raised in Britain, a parallel effort was under way to consolidate individual efforts into private funds. In the 1890s, the Sadharan Brahma Samaj, the Indian Association, and the Ramakrishna Mission were involved in famine relief. Along with organizing money, these associations and others that soon joined them, also organized volunteers to work in famine-stricken areas. The move was not always welcomed by the state, who wanted gratuitous charity to be available strictly on a means-tested basis. The administrators thought the Indian private charities made competition for food between the wealthier and poorer sections of the famine-affected population more likely.

The princes and landlords in India pose a particular problem to an analytical study of famine response. In practice, the distinction between state and society – public relief and altruistic actions - cannot always be maintained in this case. Nearly half the territory of India was ruled by indigenous princes and nobles. The princes and landlords dispensing relief had limited sovereign powers, but what they often lacked in political authority they compensated

⁵⁷ Sunil S. Amrith, ‘Food and Welfare in India, c. 1900-1950,’ *Comparative Studies in Society and History*, 50(4), 2008, 1010-1035.

⁵⁸ Mattison Mines, ‘The Political Economy of Patronage, Preeminence and the State in Chennai,’ in Anastasia Piliavsky, ed., *Patronage as Politics in South Asia*, Delhi: Cambridge University Press, 2014, 39-66.

⁵⁹ Douglas E. Haynes, ‘From Tribute to Philanthropy: The Politics of Gift Giving in a Western Indian City,’ *Journal of Asian Studies*, 46(2), 1987, 339-360.

⁶⁰ ‘‘Fill Full the Mouth of Famine’’: Voluntary Action in Famine Relief in India 1896-1901,’ *Modern Asian Studies*, 44(4), 2010, 887-918.

for in moral authority. Altruistic and contractual relief efforts, thus, converged in cases where famine relief was supplied by the princes. Two things we can tentatively suggest. First, their motivation to help may have been shaped by a different attitude from that of British India, but their methods were often designed after those adopted in British India. Second, their means to help were limited.

Although Travancore was not the worst sufferer from crop failures, fluctuations in grain supplies were common here in the nineteenth century, shortages being often accompanied by cholera and smallpox outbreak. The princely rulers responded by deepening irrigation tanks and channels and starting soup kitchens (or kanjee centres, kanjee being rice water). The Catholic missions took part in emergency measures, on several occasions in collaboration with the state.⁶¹ A contemporary account of the Darbhanga Raj, a large landlord estate in Bihar, showed that state intervention and patron-landlords' duty to help client-tenants, became interdependent in organized charity during a famine. The study reported that soup kitchen arrangements were run on a large scale during the 1899-1900 scarcity. 25,000-30,000 persons received one meal a day from these kitchens.⁶² These initiatives followed colonial policy to provide for free relief and food-for-work type relief. Free or gratuitous relief was supplied subject to a means test, and food-for-work was contingent on availability of projects.

These accounts of private charity show that attitudes did change, not necessarily in an adverse fashion as far as famine relief was concerned. Quantitatively speaking, however, private charity was never enough. Where measurable (as in the Darbhanga case), the total number helped by relief paled into insignificant when seen against the population that suffered. In Darbhanga this was just one per cent. We do not have data on private charity to measure how effective it was in the aggregate. This is a subject that needs to be researched further. It should not surprise us to know that the effect was not large.

Philanthropy failed, but it did not fail because cultural values were destroyed by westernization. It failed because the capacity of the sponsors was limited, and also free riding issues well-known in economic theory.⁶³

Conclusion

⁶¹ Kooiman, 'Mass Movements.'

⁶² R.W. Carlyle, 'Famine Administration in a Bengal District in 1896-7,' *Economic Journal*, 10(39), 1900, 421-430.

⁶³ Robert Sugden, 'On the Economics of Philanthropy,' *Economic Journal*, 92(366), 1982, 341-350. I explore many cases of free riding in *Natural Disasters*. The scholarship on the Bengal famine also discusses similar examples.

Were Indian famines natural or manmade? ‘Manmade,’ insofar as this means that famines were an outcome of colonial politics, is an unconvincing theory because it fails to explain the rarity of famines during late colonial rule and presumes that the capacity of the state to mitigate famines was limited only by its own intention to act. ‘Natural,’ insofar as this means that climatic shocks and geographical barriers to trade jointly caused famines, is unconvincing too because the underlying conception of the state is either undeveloped or simplistic.

In this essay, I have suggested that the effects of geographical or political causes depended on available information and knowledge, which constrained state capacity to act during disasters. As statistical information and scientific knowledge improved, prediction of and response to famines became better, and famines became rarer. This thesis does not discount the importance of either market integration or shifts in political ideology from despotism to contractarianism, behind the causation and retreat of famines. It adds an important third process that these views tend to overlook.