Unit 4 Paper: Health

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(Selected Essay 1: *Acemoglu and Johnson vs. Bleakley*)

Acemoglu and Johnson's conclusion that disease eradication's increase in life expectancy led to a reduction in per-capita GDP growth is limiited by their large dataset built from diverse sources and by the tumultuous period of study. If we take their conclusions to hold, however, their results can coexist with Bleakley's conclusion that disease eradication, especially in reducing childhood morbidity, can lead to several improvements.

Acemoglu and Johnson's study is heroic: they collect data on tens of countries over a period ranging mostly from 1940-1980, to study the effects of disease eradication efforts during that time. Acemoglu and Johnson sought data from several sources with different levels of accuracy, and studied these points on a series of plots to compare various countries. Even an impeccable study, when performed over a collection of less-than-impecable datasets, will suffer from a comparison of the data. Other sources of noise in the data are the events that parallel disease eradication in the 1940-1980's, namely world war, reconstruction, and the cold war. Making conclusions involving economic growth during this period is a difficult task. It is unclear that growth in another 40-year period would see a similar pattern.

Given these limitations, Acemoglu and Johnson focus on one important facet of disease eradication: mortality. As Bleakley points out in his review of related work, some diseases are widespread but primarily weaken the ailing rather than killing them. For example, malaria is estimated to have killed .4% of the estimated 247M infected in 2008 [1]. Acemoglu and Johnson's study of predicted mortality and life expectancy positions their work differently from Bleakley's work on malaria, which primarily affects morbidity. In this light, Acemoglu and Johnson's findings on disease eradication do not contradict Bleakley's. The net effect of mortality reduction may be reduced per-capita output, but the net effect of morbidity reduction, especially in children, may be increased income and literacy, as Bleakley finds.

In his analysis of Acemoglu and Johnson's work [2], Bleakley mentions a case in which morbidity reduction affects population size differently than mortality reduction. Hookworm treatment, which reduces childhood morbitidy and rarely affects mortality, appears to be correlated with a reduction in fertility. Bleakley's interpretation of this result is that once parents realize that their children are capable of higher output, their need to produce more children decreases. More work remains to determine how parents' projection of their children's output and a reduction in fertility affect per-capita GDP growth.

Unlike literacy and income, which appear to be positively correlated with malaria eradication in the regions studied by Bleakley, years of schooling have an inconsistent relationship with malaria eradication. Years of schooling may be more indicative of a

region's capacity to handle additional population growth. In Mexico, Bleakley finds that years of schooling decreased as malaria was eradicated. From this, we can gain insight into potentiale causes for Acemoglu and Johnson's findings. Even if Acemoglu and Johnson had only considered childhood mortality, one would not be surprised if their results regarding reduced per-capita output were similar: a system that can not support an influx of children in need of education will not see increased output from the population once the children grow. Fighting disease should coincide with other development efforts if we want to see increases in aggregate growth from a healthier population.

Acemoglu and Johnson set out to analyze a larger and noisier dataset than Bleakley, and thus their work should be taken with the limitations that come from effects outside of their control. With these limitations in mind, it is possible to imagine a world where the findings in both papers are realistic. Reduced mortality may reduce per-capita output in aggregate unless countries can support the increased population growth. Assuming a supportive system, added focus on childhood morbidity can better position youth to increase output.

References

[1] World Health Organization. World Malaria Report, 2008. http://apps.who.int/malaria/mediacentre/wmr2008/malaria2008.pdf

[2] Bleakley, Hoyt. Comments on Acemoglu and Johnson "Disease and Development." http://home.uchicago.edu/ bleakley/Bleakley_Comments_Acemoglu_Johnson.pdf