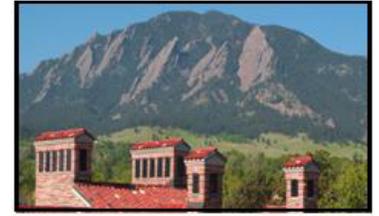


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On the Role of Human Development in the Arab Spring

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Abstract

This essay traces the impact of human development on political change, focusing on the events of the Arab Spring. Over the past generation, the Arab world experienced rapid progress in human development outcomes, including declining child mortality, extended schooling and increasing stature of women. These development gains penetrated most Arab states and subpopulations. The pathway from human development to political mobilization rests on three interlinked propositions. First, basic human development led to a dramatic increase in population needs and expectations, creating new policy challenges and reducing public dependency on regimes. Second, human development and new information technologies created new opportunities for political protest. Finally, the collective realization of human development gains resulted in new values conducive to regime change. Each proposition builds on theories of human capital accumulation over the life course that isolate the human dimension of national development. I provide provisional support for these pathways through cross-regional comparison and evidence from specific populations and sub-populations. I highlight the need for new study designs and datasets that further test this model.

Introduction

On December 17, 2010, in the provincial Tunisian town of Sidi Bouzid, a 26-year-old street vendor named Mohamed Bouazizi set himself on fire to protest his humiliation at the hands of corrupt local police, succumbing to his self-inflicted injuries January 4, 2011. Within weeks his act led to the end of the 23-year rule of Tunisian president Zine El Abidine Ben Ali. A wave of protests, uprisings, and insurrections commonly grouped under the term "Arab Spring" subsequently spread through much of the Arab world. As we move further away from those initial events, we can look beyond the precipitating causes and consider the forces underlying the revolutions. In December 2010, *Population and Development Review* published "Routes to Low Mortality in Poor Countries, Revisited," a paper highlighting the quiet but exceptional achievements of Arab nations in reducing mortality (Kuhn 2010). Mortality reductions coincided with comparable shifts in early childhood morbidity, nutrition, schooling, and other dimensions of human capability (Tabutin and Schoumaker 2005). These development gains penetrated most Arab states and subpopulations. This paper explores the logic and preliminary evidence linking improvements in human development to political mobilization in the Arab world.

At least since the storming of the Bastille in 1789, debate has raged over the socioeconomic antecedents of revolution (Komlos 2003). The more widely acknowledged framework is the Malthusian "let them eat cake" model, in which deprivation drives revolution (Schubert and Koch 2011). The bourgeois model, first articulated by Condorcet and elaborated by Marx, Habermas, and others, argues instead that improved living standards allow populations, particularly emerging working and middle classes, to engage in political change, whether revolutionary or otherwise (Habermas 1970; Boswell and Dixon 1993). Today's recessionary climate supports a neo-Malthusian inclination, and so popular explanations for the Arab Spring have highlighted food insecurity, unemployment, and frustrated youth.

Scholars have noted that such grievances alone are insufficient to explain the revolutions and have offered three interconnected narratives of change. First, some argue that popular outrage over the government's failure to meet social needs went well beyond mere grievance (Amin et al. 2012). Second, many have highlighted the role of social media and new protest movements in enabling rapid, unexpected change (Dalacoura 2012). Finally, some point to the emergence of a new pan-Arab identity oriented around justice, progress, and dignity (Lynch 2012).

The human development paradigm allows us to reconsider the human dimension of national transformation as an unfolding process of physiological, social and institutional change (Sen 1999). Theories of life course human capital have isolated the human dimension of national development, with frequent application to the study of economic growth (Fogel 1993). Yet the growth impacts of human capital can be modest in the absence of effective institutions and governance (Acemoglu and Johnson 2007). The pathway from human development to political change is thus important in its own right and for helping to clear the way for economic growth.

This essay will elaborate the pathway from human development to political change, with reference to the Arab Spring. After reviewing theories of life course human development and offering a detailed account of progress in the Arab states, I address the distinct impacts of human development on life course expectations, political mobilization, and values. To be clear, this paper will not quantify the association between indicators of human development and political

change; instead it will step back and consider the underlying processes, the existing evidence, and the need for further measurement and analysis. I conclude with a deeper exploration of variations between and within nations, and identify implications for research and practice.

From modernization to human development

The contemporary approach to development and political change emerges from modernization theory and focuses largely on schooling. Seymour Lipset highlighted the role of four indicators of economic development—wealth, industrialization, urbanization, and education—in the emergence of democratic governance (Lipset 1959; Lerner 1958). Even at this early date, Lipset argued that education increased individual capacity to engage in political action and democracy:

Education presumably broadens men's outlooks, enables them to understand the need for norms of tolerance, restrains them from adhering to extremist and monistic doctrines, and increases their capacity to make rational electoral choices (Lipset 1959: 78).

Lipset's framework treated democratic transition and regime stability as indistinguishable concepts, thus ignoring both the relationship between modernization and revolution and the possibility of democratic revolutions of the sort that occurred in Eastern Europe in the late 1980s. In the 1960s Samuel Huntington clarified the relationship between modernization and revolution, noting that modernization, including urbanization and rising literacy, could lead to rising and unmet expectations, popular frustration, and violent revolution in societies lacking strong political institutions (Huntington 1968). As a conservative and a Malthusian, Huntington cautioned policymakers against promoting too rapid modernization.

Though many mention the role of education, empirical studies in the modernization tradition continue to focus primarily on general relationships among indicators of economic or industrial change and democracy (Moore 1966; Przeworski and Limongi 1997). Yet as a simple aggregate relationship, the modernization-revolution argument is undermined by the Malthusian counterargument that regime change results not from human improvement but from human misery and, conversely, that effective social and health interventions actually bolster the political standing of a regime. The provision of basic services may be especially important in establishing state legitimacy and popular assent, particularly for regimes that are autocratic or in transition (Reich 1995; McNicoll 2006; Glassman 2007). Numerous studies document the use of social welfare as effective mechanisms of state inclusion and as a bulwark against Islamization or class consciousness in Egypt (Al-Awadi 2004; Grynkewich 2008), Libya (Lacher 2011), Tunisia (Ben Romdhane 2006; Lazaychi 2010), and Syria (Hinnebusch 2012).

Temporal factors can partially reconcile the modernization and Malthusian models, since basic interventions may carry short-term benefits and long-term costs for regimes (McDaniel 1991; Goldstone 2011). Basic interventions are often self-limiting endeavors with diminishing impact over time. This shift is clearest in immunization programs, which may lead to herd immunity, but many other health interventions also yield enduring, irreversible success or foster alternate supply routes (Omran 1971). As basic needs are met, more complex and expensive needs often emerge. This shift is evident in the tendency for health expenditure to increase inexorably as a percentage of national income and in the broadening of development priorities in national and global discourse (Thornton 2001; Hughes et al. 2010).

In the context of the Arab spring, Goldstone (2011) described the inherent conflict facing “sultanistic” regimes like those of Egypt, Tunisia, Libya and Syria

To keep the masses depoliticized and unorganized, sultans control elections and political parties and pay their populations off with subsidies for key goods, such as electricity, gasoline, and foodstuffs. When combined with surveillance, media control, and intimidation, these efforts generally ensure that citizens stay disconnected and passive. Meanwhile, as the economy grows and education expands under a sultanistic dictator, the number of people with higher aspirations and a keener sensitivity to the intrusions of police surveillance and abuse increases... As the costs of subsidies and other programs the regime uses to appease citizens rise, keeping the masses depoliticized places even more stress on the regime (Goldstone 2011: xx)

Cross-country studies have begun to elaborate the role of increased social spending demands in driving regime change in transitional societies (Haggard and Kaufman 1997; Rudra 2005). In this study, I build on this general understanding of the pathway from development to expectations by elaborating the implications of specific dimensions of human development progress on the path to political change. New theories of the human development life course help to guide the way.

Human capital, development and transformation

The human development approach separates the human contribution to socioeconomic change from nonhuman inputs like finance and natural resources. Amartya Sen argues that the human development approach is especially important to understanding nonmarket activities occurring within the family or society.

It is important to take note also of the instrumental role of capability expansion in bringing about social change (going well beyond *economic* change). Indeed, the role of human beings even as instruments of change can go much beyond economic production and include social and political development. For example, expansion of female education may reduce gender inequality in intrafamily distribution and also help to reduce fertility rates as well as child mortality rates. Expansion of basic education may also improve the quality of public debates. (Sen 1993: 296).

In Sen's framework, human capabilities are both markers of past success and stocks of potential human agency (Sen 1990). Through aggregation over time, basic capabilities like schooling and health play a foundational role both in an individual's life course and in societal development. It is also now widely recognized that rising income is not a prerequisite for improving health, schooling, or other capabilities (Preston 1975; Caldwell 1986). Efforts to maximize human capital at low cost have become the hallmarks of development agencies, including groups like the World Bank that once focused on the physical inputs to growth (Sachs 2001). Yet a deep understanding of the long-term benefits of these efforts is only just emerging.

The greatest progress in understanding human development over the life course has come in studies of health, nutrition, and physical well-being. Recent studies highlight the effect of phenotypic improvements in physical function, resulting from both improved living standards and programmatic health interventions, on physical stature, resistance to disease, and longevity

(Barker 1998; Crimmins and Finch 2006). More recently, research from the Matlab maternal and child health / family planning experiment in Bangladesh identified significant and distinct effects of child health on cognitive performance, height, and schooling (Barham 2011).

Taken together, improvements in basic human development can alter the shape of the human life course, creating entirely new patterns of human capital formation, savings, and time use across the life course. As health improves and longevity increases, adolescence begins to emerge as a distinct life stage of extended yet often variable duration (Kaplan 1997). Greater certainty of survival through adulthood, along with greater cognitive capabilities, provides powerful incentive to complete higher education. Longevity may also encourage forward-looking economic decisions like extended job searches, a choice that is also facilitated by the escape from basic material deprivation. Families and societies may have further incentive to encourage this shift as a pathway to increasing growth and opportunity (Becker 1991).

If human development reshapes the individual life course, so it may also reshape society. Robert Fogel's theory of "technophysio evolution" outlines the parameters of this effect, using evidence of changing stature among US soldiers in the nineteenth century to argue that human nutrition is the thermodynamic engine for human productivity and investment (Fogel and Costa 1997). Yet more recent studies highlight the surprisingly limited aggregate growth returns to the post-WWII epidemiologic transition outside of a relatively small number of countries in East Asia and the European Union periphery (Acemoglu and Johnson 2007). Economic growth models tend to find modest, non-negative impacts of health on likely future growth, but impacts are small relative to other drivers of GDP growth, and uncertainty is high (Weil 2007; Hughes et al. 2010). A major source of uncertainty in all models is the extent to which citizens can actually put their health to productive use given long-term institutional impediments (Acemoglu and Johnson 2007).

In light of the limits that institutions place on the returns to human capital, it is surprising that so few studies have sought to test the implications of the life course model on political or institutional change. No cross-country study to date has used improving health to predict political change, though a few Malthusian studies tie high infant mortality to the emergence of violent conflict and state failure (Goldstone et al. 2010). At present, the definitive account of human development-led political change focuses on grievance. If people with greater human capital have greater expectations, then they will be even more disappointed and more likely to act when future needs for things like employment and housing are not met (Haggard and Kauffman 1997). Campante and Chor (2012) interpret the same interaction between human capital and economic success not in terms of grievance but in terms of opportunity cost. They argue that educated people with jobs or in societies with low returns to human capital will have more time to protest, less incentive to go to work, and less to lose by engaging in protest.

Separately emphasis has been placed on the role of youth population structure and cohort size. The "youth bulge" hypothesis argues either that youth cohorts are a cause of violent political chaos or simply a barrier to democratic change. A study published just before the Arab Spring predicted that the odds of democratic transition in some Arab states would approach 50% around the year 2020, beginning in Tunisia, precisely because today's large youth cohorts would turn 40 (Cincotta 2009). To its credit, this model predicted the arrival of democratic change far sooner than models focused exclusively on political factors. But the approach could nonetheless be enhanced by considering the human development outcomes of youth cohorts themselves.

The past decade has seen serious analytical attention focused on the opportunities, challenges, and capabilities of youth, including high-profile reports like the US National Research Council's *Growing up Global* and the 2007 World Development Report (Lloyd 2005; World Bank 2006). Compared to earlier cohorts, youth around the world were healthier, better educated, and more connected to global social and economic networks than previous generations. With these advantages came higher expectations for their future. Each report highlighted the pressures and challenges of navigating key transitions into work, citizenship, marriage and parenthood; the difficulty of making policy to achieve these goals; and the threat of disorder if expectations were not met. The events of the Arab Spring offer a unique opportunity to consider these effects, beginning with the sheer scale of improvements in human development outcomes.

Human development progress in the Arab States

Over the past generation or more, the Arab states have exemplified the sort of comprehensive human development transition described in *Growing up Global*, with high impact improvements cutting across sector and affecting almost all sub-populations. Table 1 compares regional change in basic development indicators, beginning with the Human Development Index (HDI) of the United Nations Development Program (UNDP). It compares 17 core Arab states including the Palestinian Territories (henceforth referred to as "Arab States") to 23 from Latin America / the Caribbean ("Latin America"), 25 from Asia and the Pacific ("Asia"), and 46 from Sub-Saharan Africa ("Africa"). HDI for Arab States improved from 0.425 in 1980 to 0.630 in 2010, an annualized rate of about 1% gain per year that pushed the average Arab state from the 68th percentile of the national distribution to the 59th percentile. Only Asia showed more rapid improvement, and this advantage was driven largely by GDP growth, which contributes one-third of the HDI. Asia saw GDP growth of over 5% per year, compared to less than 1% for Arab States and Latin America, and close to 0% for Africa.

[Insert Table 1 about here]

Life expectancy at birth also contributes one-third of the HDI. Arab States saw substantially greater gains than other regions, rising from 58.6 to 71.4, an almost 13 year gain. In annualized terms, Arab States gained 0.7% per year, compared to 0.5% for Asia and Latin America and just 0.3% for Africa. The UN Population Division's infant mortality rate (IMR) series, which dates back to 1960, shows that IMR was slightly higher in Arab states (154 deaths per 1,000 births) than in Africa (151/1,000) for 1960, whereas today these regions have IMRs of 30 and 86, respectively. Over the 45-year period, Arab States have maintained the highest annualized rate of IMR reduction (3.6%), three times faster than in Africa (1.2%) and one-third faster than in Asia (2.7%). The pace of improvement is slightly faster than that seen in Latin America (3.4%).

Child mortality gains were facilitated by effective health service programs and by dramatic gains in nutrition. Between 1961 and 2001, the Arab States saw the fastest growth in caloric consumption per capita of any region, with a 1.1% annual gain compared to 1.0% in Asia / Pacific, 0.6% in Latin America, and 0.3% in Sub-Saharan Africa. While some of this effect relates to the rising price of oil, Egypt, with relatively limited oil resources, saw some of the most rapid increases, from 2086 calories per person in 1961 to 3,355 in 2001.

Though the Arab States did not outperform other regions in schooling, the region kept up with the rapid global pace of improvement. The “expected schooling” of children is a synthetic cohort estimate of the years of schooling a child would expect to complete if current grade-to-grade transition rates applied throughout her life course. It is thus more sensitive to recent policy than the actual schooling measure, which also includes older adults. Expected schooling for Arab states has risen from 8.0 years in 1980 to 11.4 years in 2010, a 1.2% annual gain. By comparison, Asia has gained 1.3% per year and Latin America 1.0% per year.

These gains permeated across the Arab states, almost without exception. Table 2 charts the improvement in life expectancy, infant mortality, and expected schooling for five historic Arab sub-regions. As the dominant Arab nation in terms of cultural influence and population size, Egypt (population 78.3 million) is shown separately. The Maghreb includes Algeria, Morocco, Tunisia, and Libya (total population 83.7 million). The Mashriq includes Iraq, Syria, Jordan, Lebanon, and Occupied Palestinian Territory (population 65.8 million). The Gulf includes Saudi Arabia, United Arab Emirates, Kuwait, Oman, Qatar, and Bahrain (population 38.6 million). Yemen (23.8 million) is shown separately due to its unique history, oil resources, and level of development compared to its Gulf neighbors.

[Insert Table 2 about here]

Each subregion experienced substantial improvements in basic human development indicators. With a few exceptions, the rate of improvement was comparable across the subregions. Yemen saw the most substantial gains in life expectancy and infant mortality, but remained well behind other regions in absolute terms. The Gulf became the most educated subregion overall. The Mashriq fell from the top to the middle on all indicators, though even this shift conceals considerable heterogeneity. Syria, Jordan, and the Palestinian Territories saw improvements comparable to other subregions, leaving just only the conflict-affected nations of Lebanon and Iraq as outliers from the regional trend of transformative progress.

While all Maghreb countries saw substantial gains, a noticeable gap began to emerge favoring Tunisia and Libya over Morocco and Algeria, as shown in Table 3. Whereas mortality patterns were once comparable, IMR in Libya and Tunisia is now about one-third lower than in Morocco and Algeria. Life expectancy is 2-3 years higher. More notable is the schooling gap. With expected schooling of 16.5 years and 14.5 years respectively, Libya and Tunisia had become regional leaders, leaving Morocco and Algeria well behind at 12.8 years and 10.5 years, respectively. These variations are borne out by variations in social spending in the four countries and by studies of welfare policy. Tunisia’s used social welfare to foster state inclusion, targeting areas that were poor and at risk of Islamization (Ben Romdhane 2006). Morocco and Algeria, by contrast, withheld welfare services from such marginal areas (Lazaychi 2010).

[Insert Table 3 about here]

Human development progress permeated most subpopulations of the Arab states and was most rapid among disadvantaged groups. By 1980, male and female child mortality rates were already comparable in most Arab societies, a pattern that has persisted over time. Few datasets offer a long time series of inequity by socioeconomic status or region, but the Egypt DHS provides six data points between 1988 and 2008, as shown in Figure 1. Between 1988 and 2008, under-5

mortality of children whose mothers had no schooling dropped 75%, from 161 to 44 deaths per 1,000 children. In 1988, children of mothers with no schooling were more than three times as likely to die as children whose mothers had secondary schooling, a gap that was small and statistically insignificant by 2008. While under-5 mortality reductions were substantial in all regions, Upper Egypt saw the most rapid gain of 76% (from 172 per 1,000 to 42 per 1,000), once again closing the gap with other regions. Disadvantaged subpopulations remain, most notably urban informal settlers (Ibrahim 2011), but the benefits were distributed broadly.

[Insert Figure 1 about here]

Improvements in early life are further reflected in later adult health status and longevity. The Demographic and Health Surveys (DHS) allow us to track cohort change in the height of women age 15–49. Bozzoli et al. (2009) found a strong association between the probability of dying before age 15 and the height of women age 20–49 in 124 Demographic and Health Surveys from 60 countries.¹ Using these data, Figure 2 tracks cohort change in women's completed height for available DHS samples by region.² In the Arab States, women born in 1985 were on average 3cm taller than women born in 1950. Sub-Saharan Africa, by contrast, saw a height decrease, though this may be difficult to interpret in light of selective mortality from the HIV/AIDS epidemic and the inclusion of ever-poorer African states. It is nonetheless illustrative to note the height crossover for women in the two regions, with women in the selected Arab States now taller than those from Sub-Saharan Africa.

[Insert Figure 2 about here]

Improved child health and stature further translated into significant gains in adult survival, particularly for women. World Health Statistics life tables indicate that the female probability of dying between age 15 and 60 for Egypt declined from 18.2% in 1990 to 13.0% in 2009, or a 29% relative reduction. In Tunisia, adult mortality for women fell from 10.3% in 1990 to 7.0% in 2009, a 32% reduction (WHO 2012). Based on current life tables, Tunisian men and women had a slightly better chance of surviving from age 15 to 60 than men and women in the United States.

Finally, just as healthier and better educated cohorts were reaching adolescence, the Arab states began a rapid expansion in access to mass and social media, with implications for exposure to the outside world and for dissemination of information themselves. While most Arab States continue to have low levels of internet usage relative to level of GDP, the rate of growth in the past decade has been astounding. The number of internet users per 100 people in the Arab states rose from 1 per 100 in 2000, to 9 per 100 in 2005, and to 27 per 100 in 2010. Internet penetration was even higher in Tunisia (37 per 100), Jordan (39 per 100) and the Gulf states (43 per 100), though far lower in Libya (14 per 100), Yemen (12 per 100), Algeria (13 per 100), and Iraq (2 per 100) (World Bank 2012). The use of Arabic on the internet grew by 2000% between 2000 and 2008, or three times faster than the rate of growth in the use of Chinese (UNDP 2009). While no survey data track cohort variation in internet usage, user statistics suggests that the vast majority of Arab Facebook users in 2010 were age 15 to 29 (Salem and Mourtada 2011).

This human development progress has gone largely underreported, particularly in comparison to the persistent deficits in areas such as employment, women's status, and political autonomy. Throughout the 2000s, the UNDP Regional Bureau for Arab States produced a series of widely

publicized Arab Human Development reports (HDRs). The 2005 report, *Towards the Rise of Women in the Arab World*, offered a withering assessment of the physical, social, economic, and political costs, for women and society, of women's underemployment and bias against women and girls (UNDP 2006a). Other Arab HDRs focused on adolescent opportunity, political freedom, and information technology. While the reports documented progress in human development, each explicitly argued for a new social contract that would address emerging challenges. The very existence of an Arab HDR illustrates how development elites had rapidly upgraded their expectations to promote an increasingly aggressive development agenda. Below I argue that an analogous process of rising expectation was also underway at the population level.

Human development and rising expectations

Socioeconomic analysis of the Arab spring has tended to go beyond grievances to focus on a crisis of youth exclusion and a broken social contract (Amin et al. 2012; Ibrahim 2011; Dhillon et al. 2009). The stark contrast between the early life success and subsequent exclusion of youth cohorts spawned a rich literature on the causes and consequences of youth exclusion and a new vocabulary of terms such as “waithood” to characterize the long and precarious path to adulthood facing Arab youth (Singerman 2007; Assaad and Barsoum 2007). Potential consequences of youth exclusion include lost productivity, social anomie, atrophying skills, and of course civil unrest (Chaaban 2008). But these particular crises did not occur in a vacuum. While the Arab States experienced the same global economic recession as other nations, the specific crises were conditioned by decades of progress in basic human development.

Improvements in early-life human development are often followed by increasing physical and social needs and expectations that are more difficult for governments to address. Theories of the life course have highlighted the ways in which youth expectations and the transition to adulthood are colored by socialization and institutions on the one hand and emergent forms of agency and expression on the other (Hogan and Astone 1986; Bandura 2001). In her seminal study of the fluidity of life stages in demographic research, Jennifer Johnson-Hanks (2002) describes how “imagined futures” are negotiated on the basis of individual experience and socialization, only to be reimagined in the face of lived experience. In the Arab states, rising expectations did not merely require more costly programs, but rather a more complex set of interventions requiring public participation, harnessing of marketing forces, and institutional reform. While the grievance hypothesis suggests that governments can avoid their own demise by meeting new development challenges, I describe a set of challenges in employment, marriage, and food security that could only be resolved with the demise of incumbent governments.

Employment

The youth employment crisis posed the most widely publicized challenge to Arab states, yet it was also the most foreseeable and not all that dissimilar from crises facing other regions in this era or earlier eras. Youth employment rates were indeed low, but they should have been declining as a result of past human development and the entry of large, pre-fertility transition cohorts into the labor market. The roots of the employment crisis began with the shift towards longer lives and longer adolescence. Figure 3 depicts the strong relationship between past declines in infant mortality (from 1960 to 1985) and low youth employment in developing countries. Using indicator data from the International Labor Organization (ILO), I divide the

employment rate among 18 to 29 year-olds by the employment rate for all ages combined.³ The correlation between the youth employment ratio and past infant mortality decline is -0.54, stronger than the bivariate correlation of past fertility or current schooling to youth employment (not shown). Whereas nations trapped in a daily struggle for basic physical sustenance may have very high levels of youth employment, youth throughout the Arab world, as in other societies undergoing life course transition, were naturally shifting toward higher levels of life cycle investment and accumulation, with a concomitant decline in youth employment.

Within this broader pattern, a number of Arab States did experience even lower levels of youth employment than would be predicted from infant mortality reduction alone. Whereas the regression line suggests that Egypt, Tunisia, and Jordan might have expected youth employment ratios of 0.7, in fact they were more like 0.55, lower than in Singapore or Cyprus, though not as low as in South Korea or Chile. In Syria and Morocco, levels of youth employment, while lower than in the past, were perhaps higher than expected given their stages of mortality transition.

[Insert Figure 3 about here]

The youth employment deficit can be further explained by rising university graduation rates, the result of earlier development progress and state subsidies to education. In addition to keeping students out of the labor market during their studies, rapid higher education growth can result in a mismatch between labor force skills and employment opportunities (Miles 2002). In a number of Arab states, this mismatch was exacerbated by programs guaranteeing public sector employment to tertiary graduates (Dhillon et al. 2009). Such job guarantees increased the incentives to complete higher education and created an implicit employment benchmark of state failure, since all university graduates should have been gainfully employed.

Given the inevitable employment gap, the ensuing employment crisis was more nuanced than is often imagined, at least for males. Male employment was characterized by long wait times to first employment, a shift towards casual and temporary employment, and the need for social or political connections to gain higher quality jobs (Chaaban 2008; El-Said and Harrigan 2009; Salehi-Isfahani 2010). Asaad (2009) found that male unemployment rates actually declined in Egypt between the 1990s and the mid-2000s, but attributed this shift in part to a decline in job quality. Cincotta (2012) noted that between 1998 and 2008, the total number of unemployed youth in the Maghreb, where most of the revolutions took place, had in fact grown by only 1.5%, whereas the unemployed youth population had grown by 25% in the Middle East proper.

As levels of schooling have risen, so concern has shifted to university graduates. Until recently, rates of private return to higher education in most Arab states were only slightly below global averages, with countries like Tunisia the best performer, particularly for women (Galal and Kanaan 2010; Jaramillo and Melonio 2011). Greater concern was in fact placed on the low returns to secondary schooling (Salehi-Isfahani et al. 2009; Nugent and Saleh 2009). More recently, unemployment has risen among university graduates, particularly in countries with dominant state sectors like Egypt and Syria (Assaad 2007; Kabbani and Kamal 2007). Yet while slow job growth and poor school quality surely contributed to this trend, so did the conscious decision to wait for better employment rather than take casual or short-term jobs (Salehi-Isfahani 2010; Assaad 2007).⁴ There are many reasons why young people would prefer to wait for a good

job, but one particular reason lay in the rapid transformation of the marriage market towards delayed marriage and high marriage costs (Singerman 2007; Assaad et al. 2010).

Marriage

Marriage received far less attention than employment in the aftermath of the Arab Spring, yet could be more aptly labeled a crisis in terms of the magnitude of change, the consequences for society, and the processes that precipitated the crisis. The increase in age at marriage, particularly for women, has been rapid in most Arab States, particularly in the Maghreb (Rashad and Osman 2001; Tabutin and Schoumaker 2005). Whereas marriage delay has long been relatively common for males in the Arab states, the past half-century has seen an even more substantial delay among women. Only in the Palestinian Territories has the age at marriage remained relatively stable. Figure 4 documents trends in male and female age at first marriage in Libya, Tunisia, Egypt, and Saudi Arabia. Female age at first marriage rose from 20.8 in 1966 to 29.2 in 2001 for Tunisia, and from 18.7 in 1973 to 31 in 2007 for Libya. The rise in female age at first marriage has been more gradual in Egypt and Saudi Arabia. Whereas delayed marriage was once a phenomenon of the urban and educated, more recent data from Egypt and Tunisia confirm that patterns of women's marriage and celibacy were similar by educational status and rural-urban residence (Rashad and Osman 2000; Eltigani 2009)

[Insert Figure 4 about here]

Rising age at marriage stems from a confluence of extended adolescence, rising expectations, and the overwhelming significance of marriage in the transition to adulthood. As both men and women achieved rapid gains in human capital, expectations for spouse quality rose rapidly, even as job opportunities diminished. Preferences for household nucleation have risen or remained at already high levels, even as housing and durable goods costs increased (Olmsted 2011). These were accompanied by rising expectations of "marriage quality", including a desire for equity, love, and respect between spouses (Elsayed 2010). With all of these preference changes came a "bidding up" in the cost of marriages (Singerman and Ibrahim 2003). In Egypt, Singerman (2007) found that the cost of marriage in 2005 was close to \$7,000, or about 11 times the annual household expenditure. For both men and women, the cost of marriage as a share of monthly income was highest among those with lower- to middle-incomes (Singerman 2007). These marriage market conditions reinforced men's already strong incentives to push for higher education and quality employment.

For women, the marriage crises also reflected a deeper gender crisis. Women saw some of the greatest gains in health and higher education, yet saw limited progress in labor markets. Women's labor force participation was rising, particularly among the most educated, but so were unemployment rates (Dhillon et al. 2009). When state sector jobs began to disappear, women were among the first to leave the labor market (Miles 2002). For most women, marriage remained the only reliable pathway to social status and security, and so the marriage crisis had particular consequences for them (Amin and Basussi 2004). Improving education and health made it increasingly difficult to maintain the preferred practice of hypergamous marriage for women (Rashad and Osman 2001; Olmsted 2011). Healthy, educated women were desirable marriage partners, yet older and employed women were increasingly expected to contribute more to wedding costs. In Egypt, an increasing number of women were accepting long engagements or

delaying marriage in order to earn money to pay for the marriage or to wait for a better match, yet few had long-term career aspirations or opportunities (Amin and Basussi 2004).

Rapidly changing marriage expectations and practices thus posed a more fundamental challenge for the Arab states, both for the magnitude of the crisis and for the challenge of making policy. Unlike western countries, premarital sex does not have wide social acceptance, though evidence from Egypt and Tunisia suggest it is more common than is widely assumed (Singerman 2007; Foster 2002). Furthermore, many noted the consequences of delayed or foregone marriage for social status, self-esteem, and employment (Singerman 2007, Dhillon et al. 2009). While Singerman (2007) highlights a number of emerging corrections to the crisis such as common law marriages and group weddings, government intervention was sorely needed in the long-term and short-term. The long-term solution required gender equity, including legal reforms and cultural initiatives aimed at enhancing women's status both inside and outside marriage (Amin and Basussi 2004). Yet existing regimes had neither the credibility nor the competency to undertake such drastic reform, particularly with the rise of strong Islamist opposition parties. In the short-term, a range of policies could have reduced the costs of household formation and targeted the socioeconomic risks facing poor families so that economic security was not a precondition for family formation (Singerman 2007). Yet middle-income countries like Tunisia and Egypt lacked both the finance and the competency to address rising economic uncertainty.

Food security

Over the past decade, middle-income Arab states increasingly struggled in their efforts to fight poverty and food insecurity. Structural adjustment programs considered necessary for economic growth yielded ruthless cuts in food and fuel subsidy programs (Trego 2011). GDP growth was accompanied by considerable household-level uncertainty, with a large share of households moving above and below the poverty line, even as aggregate levels of welfare rose (Marotta 2011). As food prices rose after 2008, the welfare consequences of household economic fragility became more readily apparent (Johnstone and Mazo 2011; Breisinger et al. 2012). Figure 5 tracks Egypt's trend toward rising calories per capita and declining undernourishment of children age 0-5. Child undernourishment continued to decline even after the caloric trend leveled off, partly due to the effectiveness of food subsidies. This trend reversed after the recession, however, as child undernutrition rose from 5.4% to 6.8%. A recent report by the International Food Policy Research Institute argued that even these indicators understated the rising risk of food insecurity for many households (Breisinger et al. 2012).

[Insert Figure 5 about here]

Food security challenges were not simply the product of budget cuts or recession, but also a consequence of past nutritional successes and rising needs. Successful nutrition and health interventions had yielded a population of greater stature, resulting in increased dietary needs and aspirations. Whereas food policy once involved ordering the army to bake loaves of bread and distribute them, post-transition food policy addressed a more diverse range of food sources, increasingly complex supply chains for products like meat, the export and import of food products, and the shift from home-based food production to household purchasing their food with cash. Over the same time period, newly democratic countries in Latin America adopted

social protection programs and taxation reforms aimed at increasing consumption and reducing inequality, but no such reforms emerged in the Arab states (Barrientos and Santibaa 2009).

The disappearance of the old food subsidy programs and the absence of any effective successor posed a twin threat to regimes whose survival depends on service provision and patronage. First, governments drew widespread blame for the food security crisis. At the same time, populations grew notably less dependent on the state for basic needs. In the past, rations had served as a far more effective tool for curbing dissent than direct pressure (Salevurakis and Abdel-Haleim 2008). Yet in January 2011, when Egypt's government claimed that the military could not operate bread shops until the state of emergency was over, there was little public reaction exist to further degrade the regime's credibility. Many poor families still used the bread shops and suffered from their decline, but bread itself and the bread shops had lost much of their symbolic value as a beacon of the state and as a pressure point for the poor. The erosion of the social contract provided the motivation and freedom to engage in new forms of political expression.

Human development and political engagement

Sen's proposition that healthier, better educated citizens will also be more engaged and effective citizens draws on compelling logical threads, yet supporting evidence is limited. Increased cognitive ability, physical strength, and knowledge could all increase the ability to engage in political action (Hannum and Buchmann 2005; Welzel and Inglehart 2005). To the extent that human development yields economic growth or longevity, individuals might become more invested in society and thus more engaged (Glaeser et al. 2007). Finally, mere exposure to or participation in development programs can lead to greater exposure to and engagement with government (Ross 2010). In practice, however, the empirical literature on human development and political engagement is beset by concerns over measurement, causation, and the critical role of political context in mediating the exact nature of political response (Kam and Palmer 2008). Only recently have studies begun to identify causal effects of schooling on political activity, and none has addressed the impact of improved health or cognition.

A recent evaluation of a successful randomized girls' scholarship program in Kenya reveals the complexities inherent in measuring and interpreting political impacts (Friedman et al. 2011). Beneficiaries of the program had greater objective knowledge of politics, were more likely to read newspapers, and expressed less satisfaction with the current political situation. Yet they showed no significant gains in perceived political efficacy, voting intention, or civic participation. They also showed greater tolerance of political violence, which the authors attributed to a recognition that other modes of political action were ineffective in Kenya's political system. In other words, political context may affect both the mode of increased political participation and the extent to which respondents will give honest responses.

Concerns over political context were especially salient in the politically repressive environment of the Arab States. Few surveys of political values, attitudes, or behavior existed before the year 2000 (Tessler and Jamal 2006). Since then, a wave of surveys like the Global Barometer Survey, World Values Survey, Gallup World Poll, and Survey of Young people in Egypt (SYPE) have collected extensive batteries of political and cultural variables. Most of these data sources are cross-sectional and so do not allow for cross-cohort comparisons. Most include only the barest of socioeconomic and schooling variables, with no data on cognition or long-term physical well-

being. Most importantly, even fairly uncontroversial metrics of political participation have proven difficult to collect (Tessler and Jamal 2006). Existing data collection efforts are focused on the more open societies like Egypt, Morocco, Jordan, Lebanon, and Palestine. Those surveys that were conducted in the Gulf States often included a more limited and less controversial set of indicators. Few political surveys existed in Syria, Yemen, or Libya.

By most standard indicators, civic participation in the run-up to the Arab Spring was strikingly low, particularly among youth (Bratton 2009). Global Barometer data allow for comparisons of political variables among developing regions, as shown in Table 4, which reproduces data from Bratton (2009). Data for the Arab States came from Algeria, Jordan, Kuwait, Lebanon, Morocco, and Palestine. While none of these states experienced a change of government in 2010-2012, most saw public protests and Morocco and Jordan have undergone significant reform. Barometer data come from the period of 2001 to 2006, with surveys in the Arab states coming in 2005. Barometer respondents in Arab states were substantially less likely to have voted in the last election (54% compared to 79% globally). Rates of reported interest in politics were also lower, at 40% in Arab states compared to 51% in East Asia and 73% in Latin America. Levels of volunteer activity and contact with public officials were far lower than in other regions.

[Insert Table 4 about here]

Formal participation in the political process was no higher among youth. The 2010 Egypt Human Development Report reported that only 16% of 18-29 year-olds had ever voted (UNDP 2010). A UNDP report on the Egyptian Youth Aspiration Survey found that only 13% of youth did any volunteer work and that the preferred leisure-time activities were watching television following by listening to music (UNDP 2006b, from Assad and Barsoum 2007). Just after the Arab Spring, Hoffman and Jamal (2012) published an analysis of cohort variations in political activity using Barometer data for the Arab states. Respondents age 18-24 and 25-34 were less likely to vote and less interested in politics than older cohorts, with 18-24 year olds the least interested.

Most of these same studies emphasized that low levels of political participation were more a reflection of the weak political systems than of the respondents (Assaad and Barsoum 2007; Khoury and Lopez 2011). Data from the Survey of Young People in Egypt illustrate the challenge of measuring the political consequences of human development. Among the sample of 8,500 respondents age 18-29, only 11% of females and 20% of males had voted in the previous election. Figure 6 shows that voter participation in the 2008 presidential election was similar across all levels of schooling, whereas most societies display a positive relationship between schooling and voting. The weak individual relationship conceals an even weaker ecological association. Urban governorates like Cairo and Alexandria had substantially higher levels of aggregate schooling than other regions, yet had the lowest share voting. This result is unsurprising given high levels of disillusionment with uncontested elections and the higher likelihood of vote-selling among those with less schooling (Blaydes 2006).

In comparison to voting behavior, measures of political knowledge and discussion capture higher levels of activity and a stronger association with schooling. Among males, 28% reported discussing politics with friends and 33% could name the governor of their governorate. Among females, 14% discussed politics and 16% could name the governor. Figure 6 shows respondents with higher levels of schooling reporting far greater political knowledge and discussion,

particularly among females. Yet even by these measures, a large majority of educated Egyptian youth had no interest or knowledge of electoral politics.

[Insert Figure 6 about here]

Even before the Arab Spring, analysis of political activity had begun to focus on informal political activities like political protest and membership in civil society organizations (UNDP 2010; Khoury and Lopez 2011). Institutional and ethnographic studies pointed to a renewal of public protest in the past decade, driven by frustration with mainstream political options, new information technologies, and new political alliances. In Egypt in particular, scholars have noted several overlapping threads of organized public action, including the emergence of large youth-focused social support networks like Resala (Ibrahim and Hunt-Hendrix 2011), small but well-publicized youth political movements like Kefaya (Shorbagy 2006), a vast network of bloggers (Shehata 2008; Lynch 2012), and the larger April 6, 2008 protests linking youth, labor, and Islamist supporting worker's rights and fighting the possibility of a hereditary succession in the presidency (Yacoubian 2012). Social media and satellite television emboldened local protestors, provided lessons from recent protests in the Middle East and beyond, and facilitated that rapid mobilization of protestors in the initial states (Abdelrahman 2011; Tufekci and Wilson 2012).

Barometer survey data support the perception of unusually high levels of protest in the Arab states, particularly among youth. Table 4 shows that 27% of respondents in the Arab states reported having ever engaged in political protest, compared to 18% in South Asia, 14% in Latin America, and only 4% in East Asia. Hoffman and Jamal (2011) note that protest was one of the few political actions that was actually more prevalent among youth, with the youngest cohort about 50% more likely to have protested than older cohorts.

Hoffman and Jamal (2011) also address the relationship between schooling, unemployment, and protest. Respondents with college education were more likely to protest, supporting a human development argument. Respondents who were unemployed were actually less likely to protest than the employed, particularly among those with higher education. Figure 7 reproduces these relationships, which suggest that protest was most likely among those with both education and employment. Although this is just one small study, the results suggest that protest is not driven by the absolute grievance of unemployment or the relative grievance of educated unemployment. Instead, those with education and employment may have been more empowered to protest, or they may have protested in response to long-term or collective concerns. Ultimately, there were simply not enough direct data available on protest or dissent. Instead, it is important to look at latent indicators of openness to political change.

[Insert Figure 7 about here]

Human development and changing values

One final measure of the demand for change can be seen in the shift not just to higher order material aspirations, but to the heightened expectation for political change itself. Much as elite forums like the *Arab Human Development Report* were demanding democratic change, so the public in many Arab states were undergoing a comparable shift. Even before the Arab Spring, regional scholars had begun to note how a common language, the growing use of social media,

and the emergence of a shared popular culture and news media had facilitated the reemergence of a pan-Arab identity oriented around collective empowerment and mobilization (Lynch 2012; Gause 2012; Eickelman 2009; Khondker 2011). In recent history, such collective shifts in attitude and aspiration have also been driven by collective improvements in human development.

Inglehart's post-materialism index offers one measure of the shift "from giving top priority to physical sustenance and safety, toward heavier emphasis on belonging, self-expression and the quality of life" (Inglehart 1981). The post-materialism questions ask respondents to rank the importance of a range of abstract values like unity, autonomy, and expression against material concerns like economic growth, personal security, and national security.⁵ Post-materialism carries both direct and latent implications for political change. As a direct measure, it indicates whether individuals are more concerned with complex, higher-order needs or basic ones. As a latent factor, post-materialism captures a detachment from the existing order and openness to dramatic change (Inglehart 1981, 890). Welzel and Inglehart (2005) suggest that enhanced physical and cognitive resources increase the objective basis for exercising freedom and self-expression. They posit a process of *aspiration adjustment* whereby "human beings tend to adjust their *subjective aspirations* to their *objective means*" (emphasis in original). However, they operationalize the cognitive dimension only in terms of schooling and the physical dimension only through national agricultural production.

To address the physical determinants of value change over the life course, Figure 8 depicts variation in the relationship between infant mortality at the time of birth and post-materialism in later life for birth cohorts from 1960 to 1980 in the Arab States, Egypt, East Asia, South Asia, and Sub-Saharan Africa. Post-materialism data come from the fourth World Values Survey, occurring between 1999 and 2004 (WVS 2005).⁶ Among our Arab States, in addition to Egypt, WVS included Algeria, Jordan, Morocco, and Saudi Arabia. None of these other nations has yet experienced regime change, though all have seen some protest and all except Algeria have seen substantial political reform. These data also exclude the 1985 and 1990 birth cohorts, which saw substantial IMR reduction in Arab states and were pivotal in the Arab Spring. Following Inglehart (1997), the y-axis measures a net post-materialism index calculated as the prevalence of post-materialism minus the prevalence of materialism.⁷ The x-axis indicates the country-level IMR at the time of birth using a reverse scale. The slope of the lines indicates the strength of the relationship between infant mortality and post-materialism.

All regions experienced declining IMR and rising post-materialism. At the country-cohort level, the bivariate correlation between IMR and post-materialism was 0.45. A bivariate regression coefficient of 0.14 implies a one-percentage-point rise in net post-materialism for every IMR reduction of 7 deaths per 1,000 births. Arab states saw a 13-percentage-point rise in net post-materialism between the 1960 and the 1980 birth cohorts (from 12% to 25%), a substantially greater gain than is observed for South Asia (9 percentage points) or Sub-Saharan Africa (5 percentage points). Only East Asian nations saw a more pronounced value shift (20 percentage points). Developing countries as a whole experienced a 10-percentage-point gain over the period. The strength of the post-materialism gain in the Arab States and East Asia as a whole is entirely explained by their greater extent of IMR reduction compared to the other regions, not by the slope of the IMR / post-materialism relationship, which was comparable across regions.

[Insert Figure 8 about here]

The more dramatic shift towards post-materialism in Egypt was likely driven not by mortality alone, but also by a steeper slope in the relationship between IMR and post-materialism. Here we may begin to observe a synergism between physiological and social change. Inglehart (1981) argued that value change would derive not from declining individual scarcity alone, but from a socialization process in which members of a cohort grow accustomed to a widespread and mutual sense of physical security, of rising expectation, and of empowerment in the face of shared challenges. Improvements in life course health and schooling penetrated every corner of the nation, with the most rapid gains coming in remote areas of the upper Nile. This emerging collective identity was reflected in universal aspirations for higher education, rising marital expectations, widespread consumption of satellite television, and the growth of social media. While only a relative few wrote blogs or organized protests, a great many more expressed their higher expectations through day-to-day activities (Khalaf 2011; Khouri and Azfar 2011). Schielke (2008), for example, highlights the role of boredom and the escape from boredom in rural Egyptian villages as expressions of rising aspiration and defiance of the traditional secular-Islamist divide in Egyptian society. While experiences of exclusion and repression were more apparent and widely dramatized, the shared experience of human development had been a more long-running and pervasive common denominator in the lives of Egyptians.

Discussion and Conclusion

The transformative events of the Arab Spring offer a unique opportunity to reassess the human dimensions of political change. While this essay has raised as many questions as it has answered, it presents a coherent account of the possible contribution of human development progress to political mobilization in the Arab states. No developing region had seen such improvements in multiple indicators of human development, reflected in declining child mortality, increased schooling, and increased stature of women. This progress permeated widely throughout most populations and sub-populations. Advances in human development contributed to a fundamental reordering of the relationship between citizen and state. Human development fostered a set of higher expectations, both physiologically and socially determined, that placed considerable pressure on governments, particularly in the context of extended adolescence. As the bond between citizen and state frayed, a new generation of political protest movement emerged, facilitated by the rise of information technologies. In addition to material grievances, the wave of protest reflected a collective sense, emerging throughout the Arab world, that citizens could expect more from their governments, including a right to self-determination. If human development does indeed shape the path to revolution, we may hope that it will also determine the ultimate success of the Arab Spring, which remains a work in progress.

To be clear, I neither argue that human development progress was universal nor that it affected all populations and sub-populations in the same way. Rather, the vast majority of citizens experienced improvements in health, schooling, and longevity. The extent and expression of political mobilization, however, surely varied by gender, social status, and locality. Urban youth with higher education were more likely to create social media and protest in Cairo's Tahrir Square than rural youth. Yet rural areas, provincial towns, and established urban poor neighborhoods were typically the greatest beneficiaries of human development programs. With the notable exception of Egypt, these aspirant constituencies were often at the forefront of the revolutions. This was most clear in Tunisia, where the revolutions began in a provincial town and spread into other peripheral areas (Ayeb 2011). Protest movements in Libya, Syria, and

Yemen drew heavily on these same groups. Only Egypt's revolution was truly urban and middle class, yet a Gallup World Poll conducted in March-April 2011 suggested that the participation of other groups, while less likely, was far more widespread than assumed (Brym et al. 2012).

Even as a wave of collective action spread throughout the region, the path to regime change was nonetheless mediated by factors like elite agency, political structure, and social cohesion. First, political leaders have many tools at their disposal to buy off popular unrest. Saudi Arabia offered \$136 billion (about \$5,000 per capita) in additional domestic social spending to head off the rebellions, and most Gulf states offered comparable payouts. In the long-run, we may ask whether such transfers will contribute to a further rise in expectation and political mobilization.

Second, symbolic capital like monarchical authority also matters, but this does not mean that royal subjects have fewer expectations or frustrations, merely that they express them with greater patience and humility. Morocco and Jordan, for instance, are both engaged in gradual processes of constitutional reform that may prove more enduring and peaceful than the sudden transitions of Egypt and Tunisia or the violent transitions in Libya and Syria.

Third, states may use authoritarian control of information and assembly to avert revolution, yet the Arab Spring illustrates how capability and aspiration can give rise to new methods of resistance that may go completely undetected. The revolutions in Libya were particularly unexpected given high levels of control and low levels of internet utilization, but then almost nothing was known about political attitudes or behavior in the run-up to the revolution.

Finally, it is important to consider the ongoing interaction between conflict, social cohesion, and human development. The most notable non-revolutionary cases had experienced prolonged conflict, including Lebanon, Palestine, and Algeria. Prolonged conflict may mediate the political consequences of human development at multiple stages: by minimizing the scale or universality of human development progress itself, by hindering the formation of collective expectations, or by thwarting revolutionary collective action.

In Algeria, many have argued that the post-civil war order may have imposed some limits on collective aspiration or action in a country that was otherwise similar to Tunisia and Libya (Joffé 2011). Yet Tunisia and Libya saw considerably more development progress than Algeria, in part reflecting Algeria's policy of withholding social welfare assistance from peripheral areas prone to Islamist insurgency, whereas Tunisia and Libya targeted resources towards such areas (Ben Romdhane 2006; Lazaychi 2010). While more careful analysis is needed, Algeria's exclusionary social policies may have played some role in deferring political transition.

Lebanon's long-running civil war clearly hampered human development progress, yet it remains among the better-off countries in the region and has been at the leading edge of rising social expectations. Indeed, the 2005 Cedar Revolution served as something of a dry run for the Arab Spring, yet it failed to displace Lebanon's long-running system of confessional democracy which reserves specific political roles for different sectarian groups. This system, while perhaps a necessity, may hinder development progress, collective aspiration, and further reform. To protect this political order, Lebanon has not had a population census since 1932. While a new census might reveal troubling sectarian disparities, it might also allow for better targeting of social welfare resources and the eventual recognition of shared human development progress.

Finally, given the history of resistance in the Palestinian Territories, why did no new uprising occur during the Arab Spring? Occupation, invasion, and embargo have led Gaza to experience some of the worst progress on basic human development indicators of any Arab territory, and so it is not at all surprising that so few people challenged a regime that remains an essential guarantor of basic needs. The West Bank, on the other hand, has seen as much progress in basic human development as any Arab state, yet the Israeli occupation has imposed stiff limits on economic activity, employment, food security, and, most of all, housing construction. Clearly conditions of grievance were present, so why were protests in Palestinian cities so quickly dispersed? First, the West Bank could be considered a special case given the existence of two regimes in the Palestinian Authority and the Israeli Occupation Authority, each of which has strong incentives and resources for disrupting collective action. Second, Palestinians, who have experienced four decades of social and economic disruption, may be more focused on achieving higher aspirations like achieving nationhood and ending occupation than in addressing material grievances or overthrowing their interim regime.

Further testing of such complex interrelationships will require new data sources that link human capital, socioeconomic conditions, expectations, and political behavior at multiple levels of analysis. While cross-country regressions are useful tools for assessing broad temporal relationships between modernization and political change, they are not well-suited to linking specific dimensions of human development to political resistance over time and the life course of multiple cohorts. Instead, insights must come from a mix of methodologies that link ethnography, quantitative modeling, and institutional analysis. Finally, our existing knowledge base relies almost exclusively on schooling as an independent variable, even though schools can serve as sites of indoctrination as well as empowerment. New datasets should incorporate schooling alongside measures of cognitive function, mental health, and physical strength, each of which may carry unique implications for life expectations and political actions.

Deeper analysis could aid in the development of new programs that target human development, social inclusion, and political change. Such programs could be essential for countries now engaged in accelerating human development transitions, including autocratic regimes such as Ethiopia, Rwanda, and Uganda. A human development framework might encourage the *laissez faire* approach of assuming that development will eventually lead to democratic change, but such a conclusion would be dangerous. First, self-serving leaders may seek to manage their political risks by manipulating the flow of aid, either to deny resources to the population at large or to focus resources on select population groups. Second, while the Arab Spring was desirable in comparison to the status quo, it has also seen a great deal of uncertainty, disruption and continuing violence. While the revolutions were characterized by high levels of collective action, they have often seen limited participation by women, informal settlement dwellers, refugees, and religious minorities. The risk remains that new regimes will therefore not support or protect these groups. Even as we appreciate the significance of the Arab Spring, we can begin to consider the possibilities for more inclusive paths to freedom.

TABLE 1 Change in the Human Development Index and Components, 1980-2010, major developing regions

	Arab States	Egypt	Asia / Pacific	Latin America / Caribbean	Sub-Saharan Africa
Human Development Index					
1980	0.425	0.393	0.359	0.573	0.289
2010	0.630	0.620	0.588	0.704	0.388
Annualized change	1.3%	1.5%	1.7%	0.7%	1.0%
Gross Domestic Product per capita (PPP adjusted)					
1980	8,004	2,633	1,136	8,395	2,166
2010	10,129	5,840	5,390	10,899	2,159
Annualized change	0.8%	2.7%	5.3%	0.9%	0.0%
Life Expectancy at Birth					
1980	58.6	56.6	60.2	64.4	48.2
2010	71.4	70.5	69.3	74.0	53.0
Annualized change	0.7%	0.7%	0.5%	0.5%	0.3%
Infant Mortality Rate					
1960-1964	154	171	131	99	151
1980-1984	79	97	69	55	115
2005-2009	30	35	38	21	86
Annualized change (1960-1980)	-3.3%	-2.8%	-3.2%	-2.9%	-1.4%
Annualized change (1980-2005)	-3.8%	-4.0%	-2.4%	-3.8%	-1.1%
Annualized change (1960-2005)	-3.6%	-3.5%	-2.7%	-3.4%	-1.2%
Expected Schooling (Life table estimate)					
1980	8.0	7.5	7.4	10.1	5.7
2010	11.4	11.0	10.8	13.5	8.4
Annualized change	1.2%	1.3%	1.3%	1.0%	1.3%

Source: All data UNDP (2011) except Infant Mortality Rate from UNPD (2009).

TABLE 2 Change in Key Human Developing Indicators for Arab Sub-regions, 1980-2010

Region	Egypt	Maghreb	Mashriq	Gulf	Yemen
Life Expectancy at Birth					
1980	56.6	59.2	62.3	62.6	46.7
2010	70.5	72.8	71.4	74.6	63.9
Infant Mortality Rate					
1960-1964	171	152	108	153	219
1980-1984	97	81	50	50	126
2005-2009	35	28	25	16	59
Expected Schooling (Life table estimate)					
1980	7.5	7.6	10.2*	6.6	n/a
2010	11.0	12.4	10.6*	13.0	8.4

Source: All data UNDP (2011) except Infant Mortality Rate from UNPD (2009).

* - Expected schooling calculation for Mashriq excludes Occupied Palestinian Territory, which had no data for 1980

TABLE 3: Change in infant mortality, life expectancy and expected schooling for Maghreb nations, 1960-2005

Country	Infant Mortality Rate			Life Expectancy			Expected Schooling	
	1960	1980	2005	1960	1980	2005	1980	2005
Algeria	159	84	31	48	61	72	8.3	12.8
Libya	150	50	18	48	62	74	12.6	16.5
Morocco	145	88	31	48	60	71	5.9	10.5
Tunisia	155	64	20	50	64	74	8.1	14.5

Source: All data UNDP (2011) except Infant Mortality Rate from UNPD (2009).

TABLE 4: Measures of political participation for major developing regions, Global Barometer Surveys, 2001-2006

Activity	Arab states	East Asia	South Asia	Latin America	Sub-Saharan Africa	Global mean
Voted in last election	54%	82	81	--	74	79
Interested in politics	40	51	--	73	66	61
Belong to voluntary organization	17	33	56	--	80	51
Contacted government official	7	31	28	--	11	24
Contacted elected official	5	19	--	--	10	15
Contacted traditional leader	6	29	--	--	22	25
Protested or demonstrated	27	4	18	14	14	14

Source: Bratton (2009)

FIGURE 1 Trends in Under-5 Mortality Rate by Region and Maternal Schooling, Egypt, 1988-2008

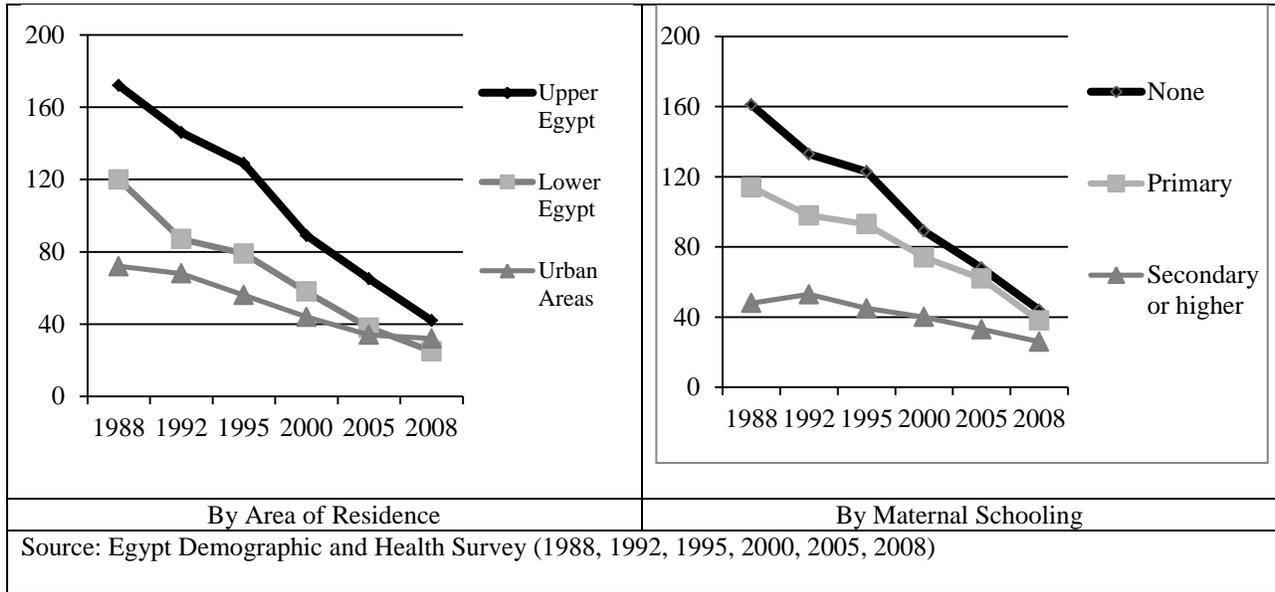
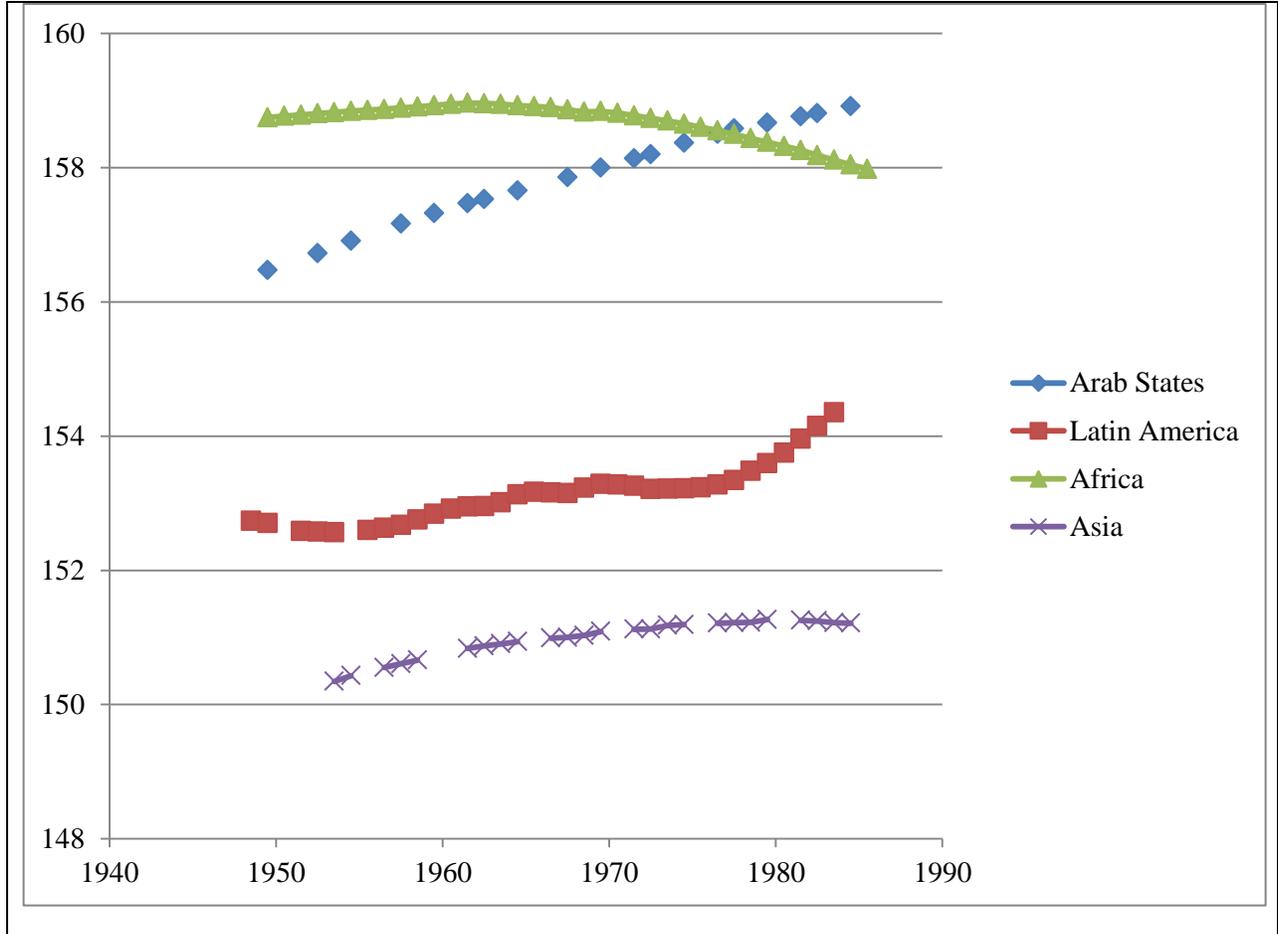
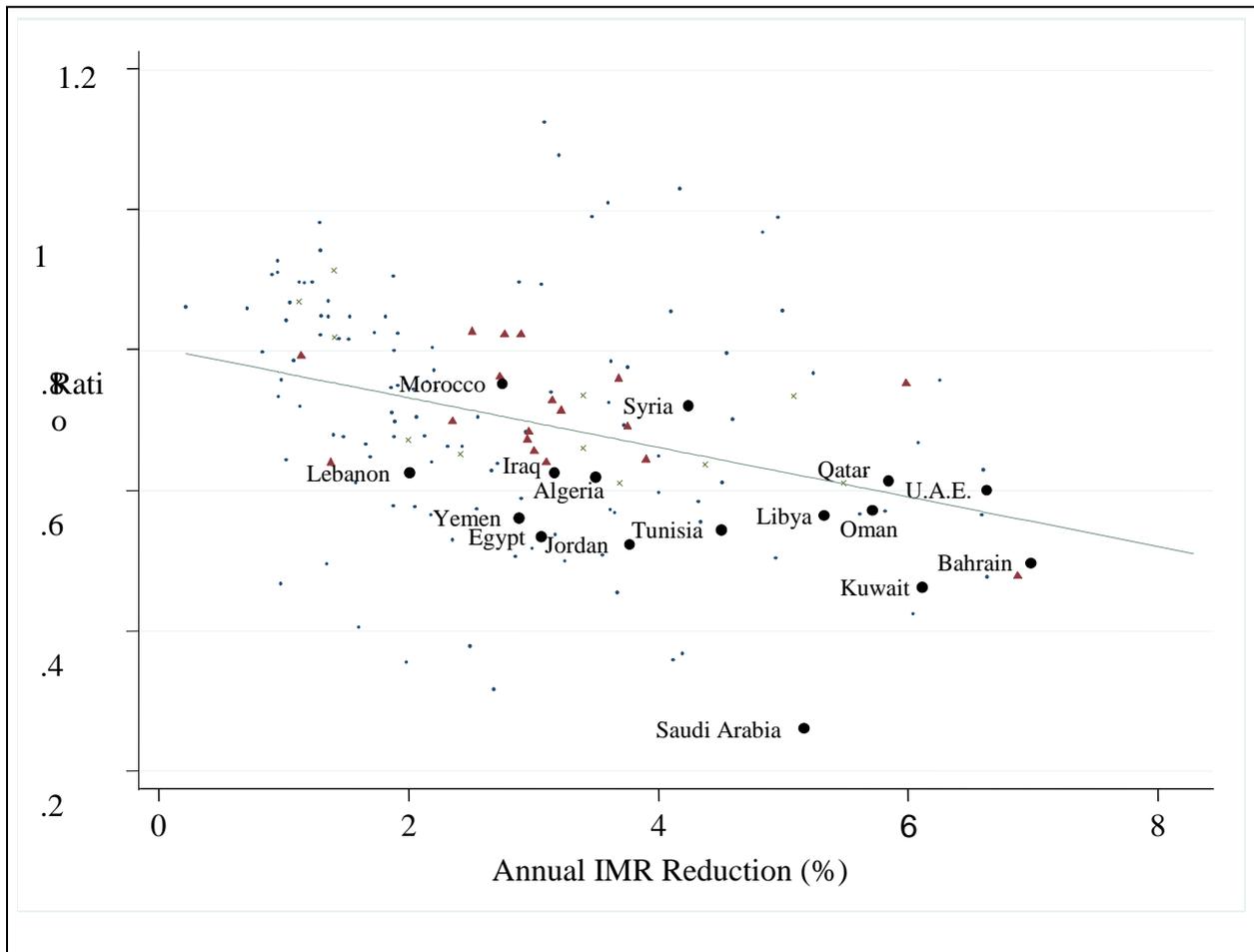


FIGURE 2 Completed height of women aged 15–49 for selected Demographic and Health Surveys, by region and cohort of birth



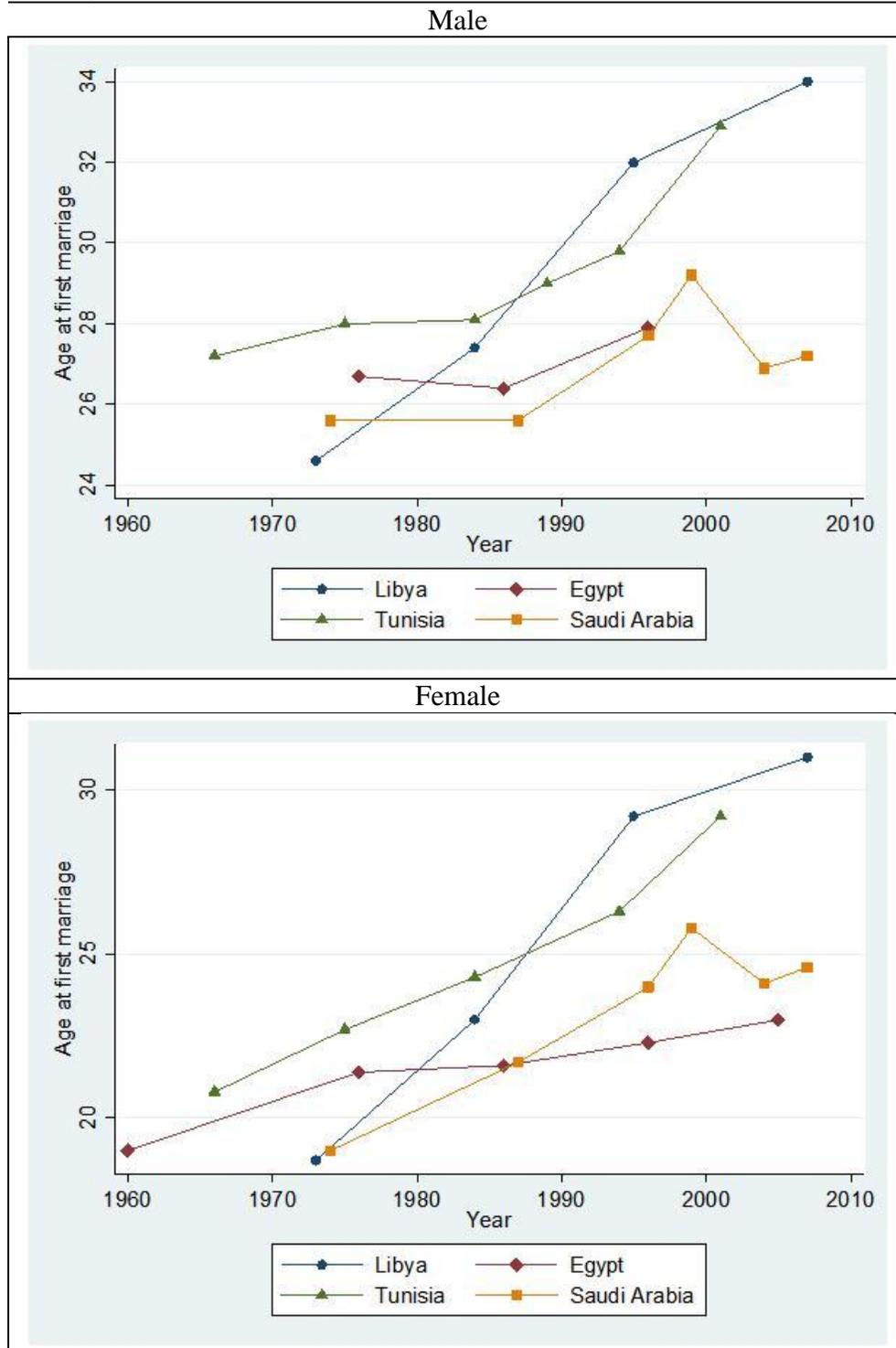
Source: Demographic and Health Surveys, courtesy of Angus Deaton, as used in Bozzoli et al. (2009).

FIGURE 3 Relationship between youth-to-total labor force participation ratio in 2009 and average reductions in infant mortality, 1960–1985: observed and modeled



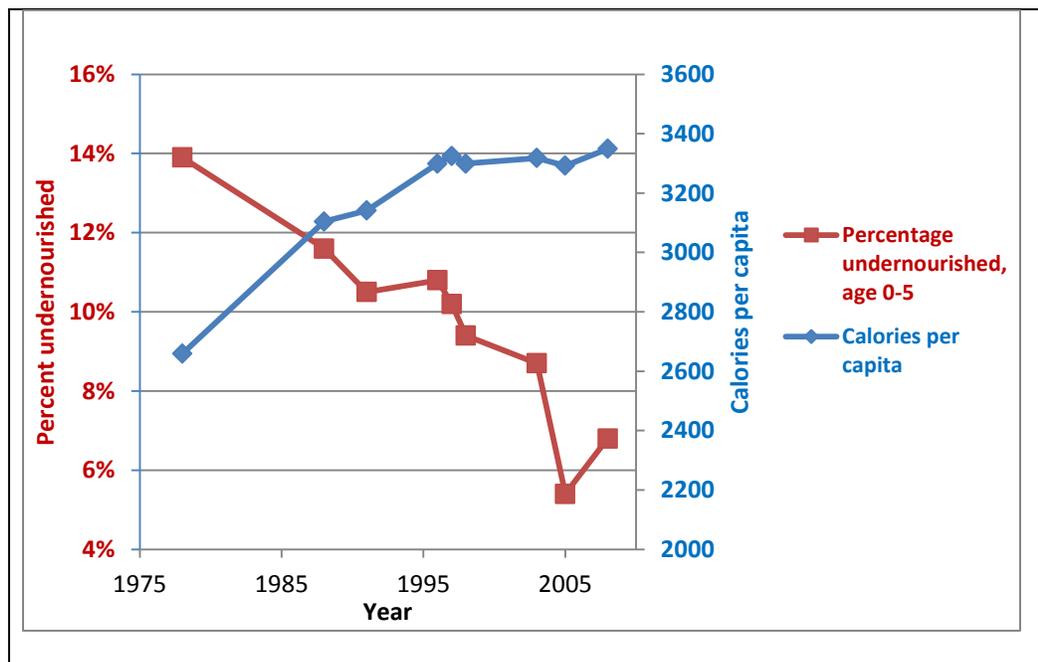
Source: Employment data from UN (2011), from World Bank World Development Indicators (2011); Infant mortality from UNPD (2011).

FIGURE 4 Trends in Mean Age at First Marriage, Selected Arab states, 1960 - 2007



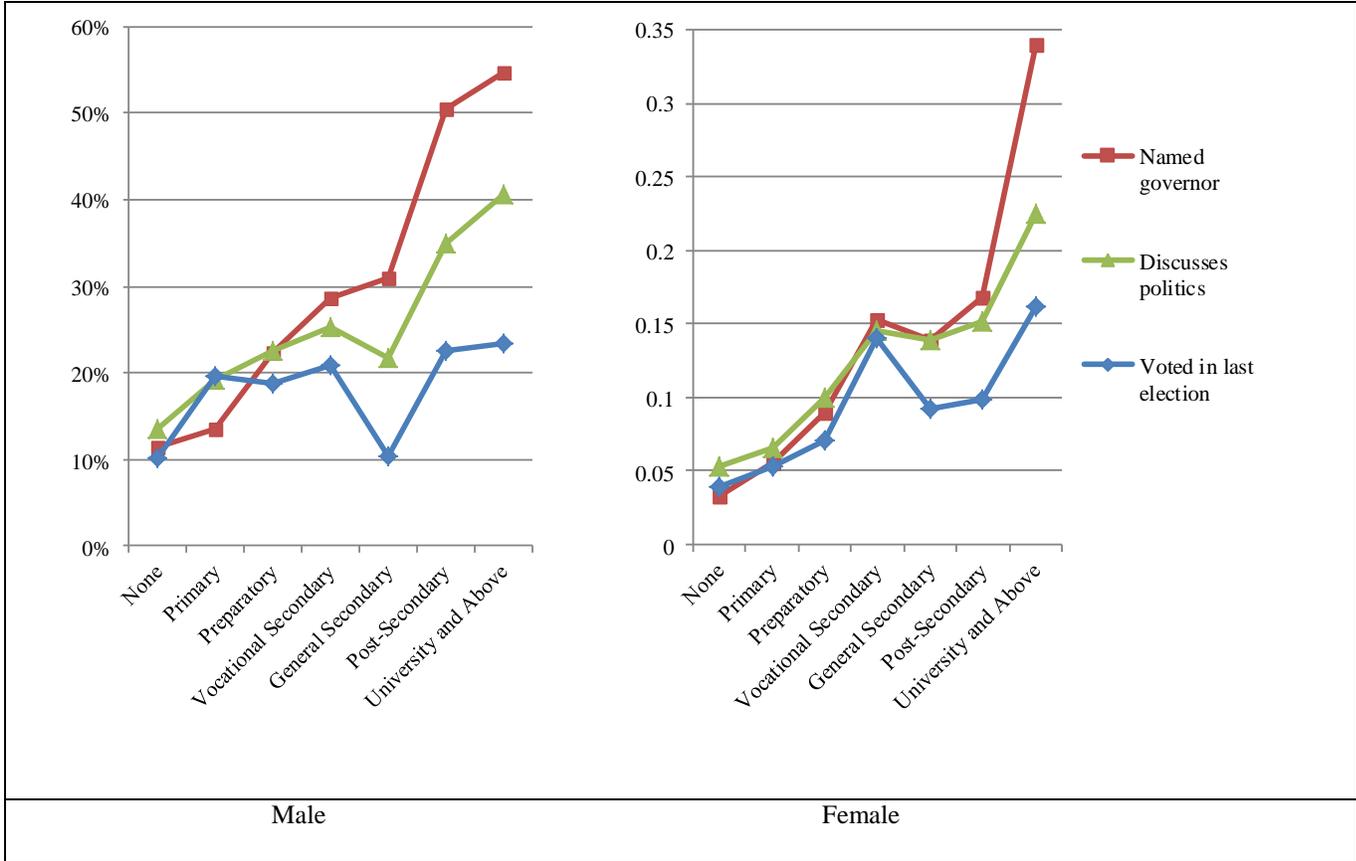
Source: Tabutin and Schoumaker (2005); UN Population Division (2008)

FIGURE 5 Calories per capita and Percent Undernourished, Age 0-5, Egypt, 1975-2008



Source: Food and Agriculture Organization (2012); Egypt Demographic and Health Survey (1988, 1992, 1995, 2000, 2005, 2008)

FIGURE 6 Political knowledge, discussion, and voting behavior, by sex and highest level of schooling, youths aged 18–29, Egypt, 2008



Source: Survey of Young People in Egypt (2009)

FIGURE 7 Relative risk of ever engaging in political protest by higher education and employment status in 6 Arab states, Hoffman and Jamal (2011)

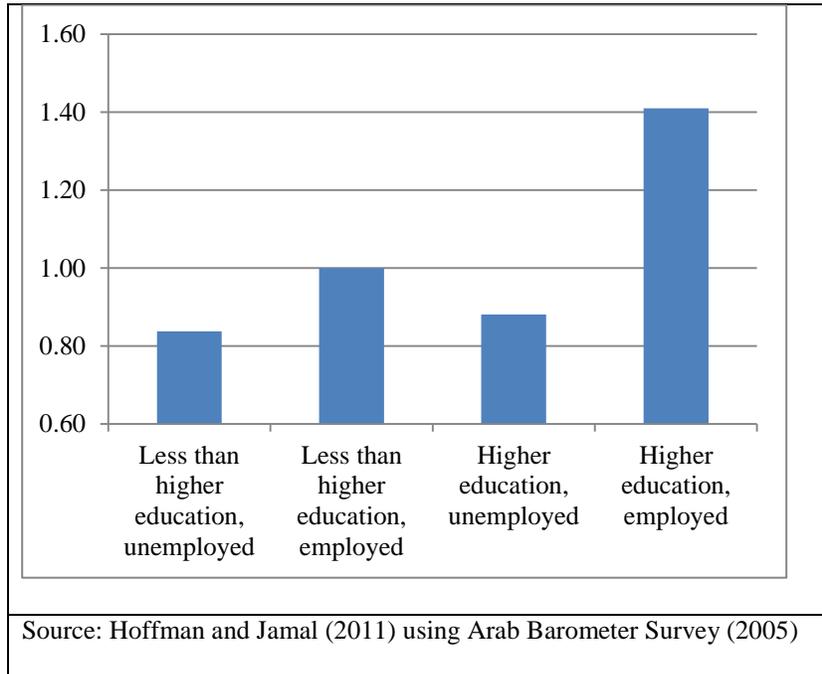
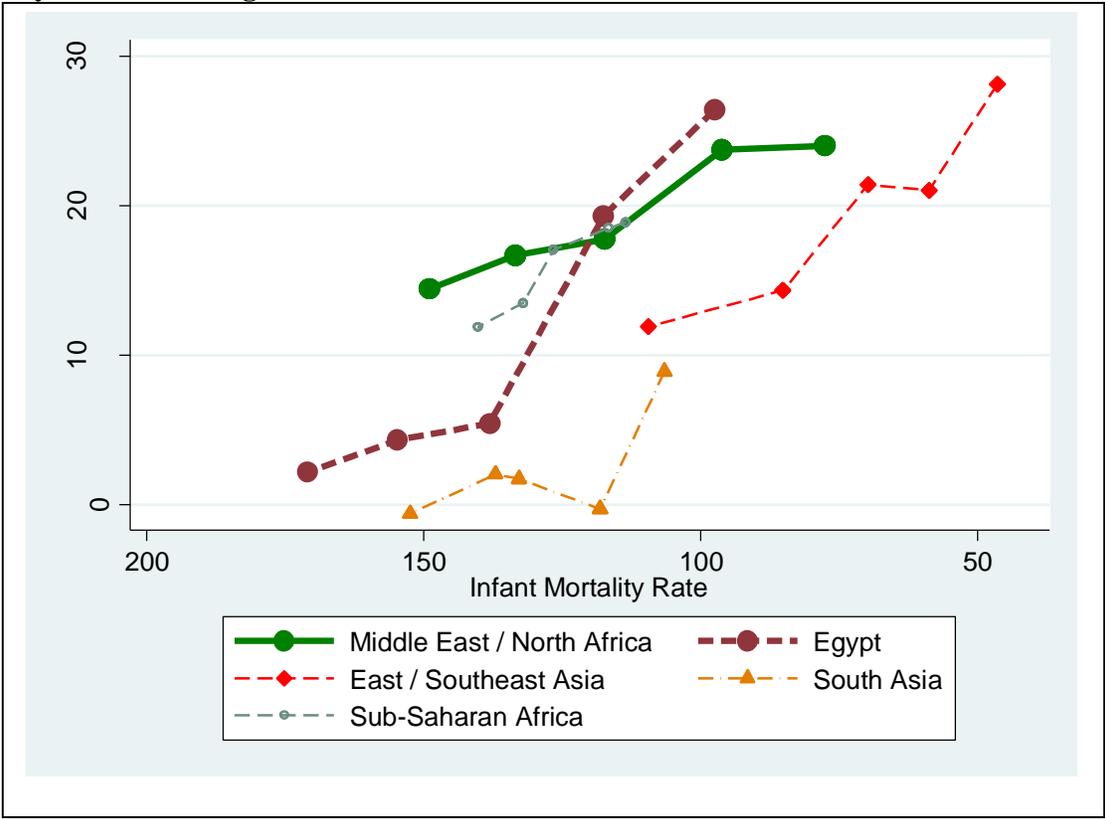


FIGURE 8 Relationship between infant mortality rate at period of birth and post-materialism percentage difference index in World Values Survey Wave 4, by cohort and region



Source: World Values Survey (2005), UNPD(2010).

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Endnotes

¹ There is significant regional variation in completed height at baseline that has been attributed to both genetics and self-selection, but changes in height over time are strongly associated with changes in nutrition and disease (Deaton 2005; Bozzoli et al. 2008).

² A few caveats are worth noting. As DHS is funded by the US Agency for International Development, case countries tend to be US allies. The set of Arab states includes only Egypt, Jordan, Morocco, and Yemen. Conveniently, each is undergoing a political transition of one form or another. As DHS is primarily a survey of basic health needs, countries with the most dramatic health improvements will be excluded from DHS or "graduate" out of the DHS pool, while countries with stagnant gains might find their way into the pool. However, most of the cohort variation in this example occurs within survey round, not across rounds.

³ Typical unemployment rates exclude individuals who are out of the labor market from the denominator, but this employment measure simply asks who is working and who is not, whether those not working are in school, looking for work, or frustrated.

⁴ Long queues for government jobs favored the patient, and so those with the strongest safety nets, the best social connections, or the highest aspirations were willing to wait their turn (Salehi-Isfahani 2010).

⁵ Materialist values include maintain order in the nation, fight rising prices, maintain a high rate of economic growth, make sure that this country has strong defense forces, maintain a stable economy, and fight against crime. Post-material values include move toward a society where ideas count more than money, give people more say in decisions of government, protect freedom of speech, give people more say in how things are decided at work and in their community, try to make our cities and countryside more beautiful, and move toward a friendlier, less impersonal society.

⁶ For Latin America, the countries were Argentina, Chile, Mexico, Peru, and Venezuela; for east Asia they were China, Indonesia, Republic of Korea, the Philippines, and Vietnam. For south Asia they were Bangladesh, India, and Pakistan. For sub-Saharan Africa they were Nigeria, South Africa, Tanzania, and Uganda.

⁷ Inglehart and Abramson (1994) explain, "Respondents are classified as 'high' on the 12-item materialist/postmaterialist values index if they gave high priority to at least three of the five postmaterialist goals (i.e., as one of the two most important goals out of each group of four goals); they are classified as 'low' if they chose none of the five postmaterialist goals among their high priorities."