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A PROSPECTIVE ON ZELINSKY'S *HYPOTHESIS OF THE MOBILITY TRANSITION*

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Abstract

Wilbur Zelinsky's 1971 paper in *Geographical Review* entitled the "Hypothesis of the Mobility Transition" was both forward-looking and offered innovative ideas regarding human geographic mobility. One of the most interesting aspects of the paper was a set of predictions for mobility in a "future superadvanced society". Many of these predictions have now come to pass, including a general decline in international and internal migration and residential change, the increasing regulation of migration - especially internally, and the possibility that the widespread adoption of information and communication technologies has impacted human geographic mobility. Hence, this essay looks at the mobility transition not as an obsolete frame of reference but as a prescient, pliable, and adaptable framework which not only informs the study of human geographic mobility today but also, perhaps, even into the future.

Keywords

migration; population geography; modernization; regulation; communications

[Wilbur Zelinsky is] as probably as close as one can come to being a true academic provocateur, ... weaving an understanding of our habitable world while posing questions for the rest of us to ponder for a long time to come.

– Joseph S. Wood, 2006

Geographical Review is one of the oldest, and most prestigious, peer-reviewed geography periodicals in the world and Wilbur Zelinsky's "The Hypothesis of the Mobility Transition" is one of the journal's most well-known papers (Zelinsky 1971). It is the second most-cited manuscript in the journal, exceeded only by Thornthwaite's climate classification paper from 1948 (Thornthwaite 1948). Zelinsky identified and translated regularities from the

demographic transition model into a set of postulates about mobility and migration. The essay, however, soon came to be seen as “a child of its time in its reference to a ‘modernization process’” (Skeldon 2012, 157). Even that comment was perhaps overly generous. The notion that development followed in stages established first in the Global North and then diffusing outward had already been heavily criticized by the time the paper was published. Zelinsky himself later acknowledged such shortcomings (Zelinsky 1979, 1983; Woods, Cadwallader, and Zelinsky 1993). Given that its premise—modernization theory—is dated, one would surmise that the paper’s impact would have declined over time. That, however, is not the case. The article’s annual average citation since its publication has been about forty per year, yet in 2017 alone it was cited over 100 times. Moreover, some of the most recent citations involved scholars writing in Croatian, English, French, Bulgarian, and Polish.

Being embedded within dated notions of staged-based modernization theories, the continuing interest in “The Hypothesis of the Mobility Transition” (MT) is surprising. Why does it remain popular? On the one hand, one reason may be that the demographic transition (DT), to which MT is yoked, is a typical starting point in the training of population geographers and other demographers. Thus, despite the limitations of modernization theories, MT remains, in the minds of generations of population geographers, a shared narrative for the contextualization of both historical and contemporary migration.

On the other hand, it is just as likely that population geographers look past the anachronistic modernist framework of MT and see a host of innovative ideas that were not only stimulating at the time but also continue to have contemporary relevance. Ronald Skeldon points out that the “significance of Zelinsky’s work was that it was the first attempt to bring migration into the same framework as the other two demographic variables, fertility and mortality” (2012, 157). Thus, not only does it join Everett Lee (1966) in delivering migration into the mainstream of demography, but it also brought population geography into the mainstream of demography. More broadly, it “touches on so many issues” (Woods, Cadwallader, and Zelinsky 1993, 213) that were emerging in the early 1970s and, thus, shaped how those issues were conceptualized such as linking mobility and migration, circulation, and what has come to be known as “the new mobilities” paradigm. Within that context, Zelinsky’s insights regarding mobility are remarkably prescient (King 2012).

This essay begins with a glance back at both the DT and MT models, considering their origins at the highpoint of modernist development theory and outlining subsequent critiques and adaptations. This is well-worn turf and much of what we have to say reinforces prior assessments. The majority of our energies thus attend to how well Zelinsky’s predictions—to the degree that many areas of the Global North conform to his notions of a “future superadvanced society”—have come to pass. We leverage the Global North biases of Zelinsky’s model and use the United States and European Union (mostly) as exemplars of such societies to critically examine what Zelinsky foretold about contemporary mobility in relation to two developments at various scales: information and communication technologies (ICTs), and migration and mobility regulation. We then attempt to follow Zelinsky’s example by considering what the near future holds for mobilities in a world where the impacts of ICTs and regulation and bordering are on the increase.

The Demographic Transition

“The Hypothesis of the Mobility Transition” sought to complete the demographic—or what Zelinsky referred to as the “vital”—transition model by adding to fertility and mortality the missing third leg of demographic change: human geographic mobility. To review, the DT offers a stylized sequence of events across four stages of industrialization and modernization:

- Stage 1. Pre-modern societies high mortality, compensating higher fertility, and slow population growth.
- Stage 2. Early industrialization declining mortality primarily due to improvements in public health, continued high fertility due to slow-to-change social norms, and rapid population growth.
- Stage 3. Late industrialization slowing mortality declines toward biological minimums, declining fertility due to fading traditional social norms, and slowing population growth.
- Stage 4. Modern societies decline in mortality to biological minimum, replacement-level fertility, and slow to negative population growth.

The DT has been heavily criticized over the last half century, leading to extensive revisions. These alterations highlight the weakness of modernist stage-of-development theories: they do not work everywhere, requiring consideration of alternative mechanisms and their endpoints do not anticipate alternative nonequilibrium, unstable futures. In the case of the DT model, it has not translated smoothly from European contexts, and even within Western Europe the transition stages of different countries have not been uniform. For example, some European countries with relatively large rural populations, such as France, transitioned at a similar pace to ones with a more urbanized populace. Despite these fundamental failures, the DT model does appear to have some generality. Notably, declines in fertility and mortality have been almost universal across countries, leading Lesthaeghe to observe that “there are barely a dozen countries” that had not begun a fertility decline by the early twenty-first century (2010, 2014).

The DT model has also proven to be adaptable—extending its utility—especially with regard to fertility transitions. For example, traditional DT theory explains fertility decline as a result of decreasing child mortality, reducing the need to have more children in anticipation of loss, and the urbanization and education of the population, which depresses the desire for large families. The theory has not been especially predictive of the timing and pace of fertility trends in the Global South, but research has not suggested wholesale rejection of the DT as a consequence. Rather it proposes the need for a revision of its explanatory mechanisms to include ideational change and diffusion processes in addition to the original socioeconomic drivers (Watkins 1987; Bongaarts and Casterline 2013). Similarly, extensions of demographic transition theorizing have arisen in response to the emergence of very low fertility in a collection of European and East Asian countries. This condition challenges the notion of a low fertility and mortality equilibrium endpoint forecasted by traditional demographic transition theory in which population size at the end of the transitions is stable.

This “second demographic transition” (Lesthaeghe and Van De Kaa 1986) describes a society facing population decline with sub-replacement fertility, a trend away from traditional living arrangements, and a disconnection between marriage and procreation (see also Lesthaeghe (2010, 2014) for reviews). Thinking through the “second DT” produces the sort of linkages Zelinsky sought to make. For example, this iteration of the DT features an aging population, the effects of which can be partially ameliorated through mobility in the form of permanent or semipermanent immigration. The next section expands on these sorts of linkages.

“The Hypothesis of the Mobility Transition”

Zelinsky’s main motivation was to add human geographic mobility to the four-stage framework of the DT in terms of four parallel “phases”:

- Phase 1. Pre-modern societies “Little genuine residential migration and only such limited circulation as is sanctioned by customary practice in land utilization, social visits, commerce, warfare, or religious observances” (p. 230).
- Phase 2. Early industrialization “(1) Massive movement from countryside to cities, old and new (2) Significant movement of rural folk to colonization frontiers, if land suitable for pioneering is available within country (3) Major outflows of emigrants to available and attractive foreign destinations (4) Under certain circumstances, a small, but significant, immigration of skilled workers, technicians, and professionals from more advanced parts of the world (5) Significant growth in various kinds of circulation” (p. 230).
- Phase 3. Late industrialization “(1) Slackening, but still major, movement from countryside to city (2) Lessening flow of migrants to colonization Frontiers (3) Emigration on the decline or may have ceased altogether (4) Further increases in circulation, with growth in structural complexity” (p. 230).
- Phase 4. Modern societies “(1) Residential mobility has leveled off and oscillates at a high level (2) Movement from countryside to city continues but is further reduced in absolute and relative terms (3) Vigorous movement of migrants from city to city and within individual urban agglomerations (4) If a settlement frontier has persisted, it is now stagnant or actually retreating (5) Significant net immigration of unskilled and semiskilled workers from relatively underdeveloped lands (6) There may be a significant international migration or circulation of skilled and professional persons, but direction and volume of flow depend on specific conditions (7) Vigorous accelerating circulation, particularly the economic and pleasure-oriented, but other varieties as well” (p. 230).

Given that the MT is rooted in DT, it has endured similar critiques for its modernist foundations privileging the experience of the Global North. These issues aside, the MT has remained influential and, we would wager, of greater utility than the DT for the last fifty years because it was forward-looking and offered new ways to think about human geographic mobility (King 2012). First, Zelinsky queried how to classify different types of

human mobility and in the process brought attention to the diversity of types of spatial mobility, how they are interconnected, and how they are sometimes hard to separate:

“How far (or how rapidly) need one travel and for how long to be classed as a migrant? What are the purposes of the trip? How different are origin and destination? How do we handle repetitive trips? But the most profound difficulty is the intimate, yet ambiguous, liaison between territorial and social mobility.” (p. 233)

So while Roseman (1971), for example, offered a concise definition of migration as a permanent residential relocation associated with a total break with the previous daily activity space, Zelinsky asked population geographers to operate outside of static definitions and introduced ways of thinking that have shaped population geography ever since, especially vis-à-vis circulation:

“Circulation denotes a great variety of movements, usually short-term, repetitive, or cyclical in nature, but all having in common the lack of any declared intention of a permanent or long-lasting change in residence. Under this rubric, one can include such disparate items as weekend or seasonal movements by students; vacation and weekend travel; shopping trips; hospital and church visits; religious pilgrimages; travel to professional and business conventions; trips by government and business executives, salesmen, athletes, migratory farm workers, and the like; social visits; and much seemingly aimless or fun-seeking cruising by wheelborne youngsters.” (p.226)

Zelinsky’s more nuanced second point was that moves are rarely permanent and social connections between origins and destinations are infrequently broken. We do not live in the mover-stayer world of rational choice theory (and never have), but in a complex world of human geographic mobility across a variety of interdependent spatial scales—predating the ideas of the New Mobilities paradigm by nearly a quarter century. Moreover, Zelinsky did not just think about human geographic mobility in terms of physical mobility, but in several places also suggested that improvements in information and communication technologies would create new forms of virtual human mobility that preclude corporeal movement:

“There are concurrent changes in both form and intensity of social mobility and in the movement of information, and under certain conditions the potential migrant may exercise the option changing the locus in social space or of exploiting a superior flow of information rather than engaging in a territorial shift.” (p. 233)

Zelinsky was also not content to just add a mobility component to the DT. Unlike how the DT was defined at the time, Zelinsky hypothesized about a future 5th phase of the MT associated with a “future superadvanced society”. Zelinsky did not offer a concise definition of what this stage entails but references to the impacts of computers and improved communication and delivery systems suggest that the factors that he saw impacting human geographic mobility in this stage have come to pass.

- Phase 5. Future superadvanced society “(1) There may be a decline in level of residential migration and a deceleration in some forms of circulation as better communication and delivery systems are instituted. (2) Nearly all residential

migration may be of interurban and intraurban variety. (3) some further immigration of relatively unskilled labor from less developed areas is possible. (4) Further acceleration in some current forms of circulation and perhaps the inception of new forms. (5) Strict political control of internal as well as international movements may be imposed.” (p.231)

Note that while the motivation for the MT was to add human geographic mobility to DT, Zelinsky passed on predicting future vital transitions and how they may relate to future mobility transitions. Some of these have turned out to be important oversights, such as the impacts of the “second demographic transition” on population change in several eastern European countries, thereby creating demand for immigrant workers as native populations age and decline (Lesthaeghe 2014).

What other observations and connections can we make? With the foundations for the “future superadvanced society” already in place in some areas, the rest of this essay focuses on the utility of this 5th phase for understanding contemporary human geographic mobility by condensing the five main speculations outlined above as three predictions regarding internal, international, and circulatory movement and considering how they have been impacted by the two processes Zelinsky identified as key to these predictions: the widespread adoption of information and communications technologies [ICTs], and the regulation of human geographic mobility across borders at a variety of spatial scales.

Mobility in a Future Superadvanced Society

INTERNAL MOBILITY

Zelinsky predicted a bottoming out of rural-urban migration, a flattening of intraurban and interurban migration and, importantly, a significant increase in “potential migration absorbed by circulation (p. 233).” He was largely correct. For example, the share of Americans who lived in a different residence in the previous year peaked at 21 percent per year in 1950, declined slightly up until about 1970, followed by an acceleration in that decline since then, such that only 10.6 percent of Americans changed their place of residence in 2017. This decline has occurred at all spatial scales although with slightly different timing. Intracounty residential mobility started to decrease in the 1960s, while interstate migration didn’t begin to decline in earnest until the early 1980s. But both now stand at about one-half of their peak. More muted trends can also be found in other Global North countries (Champion, Cooke, and Shuttleworth 2018).

While the decline in residential relocation and interregional migration—at least in the United States—has been occurring for nearly fifty years, it was not widely recognized until the early 2000s (see Fischer 2002), despite some underappreciated earlier work by geographers (see Plane and Rogerson 1991). Broader recognition had to wait for the aftermath of the Great Recession with the collapse in interstate migration rates from 2.0 percent in 2006 to 1.4 percent in 2010. As a consequence, some commentators rushed to link it to short-term economic factors such as the lack of job opportunities and the “lock-in” effect of underwater mortgages and housing (see Frey 2009). Cooke (2011, 2013) and

Molloy, Smith, and Wozniak (2011), however, successfully redirected attention to the fact that the decline was neither short-term nor wholly linked to the Great Recession.

The largest strand of research on the long-term decline in residential relocation and interregional migration emphasizes the impacts of changing demographic composition, such as how an aging—and less mobile—population has affected overall mobility rates and how the rise of dual-earner couples limits migration choices that are suitable for both partners. While the accepted consensus is that demographic composition effects do not fully explain the migration decline (see Cooke 2013), a compelling demographic argument that deserves more attention is how relative cohort sizes contributes to declining migration (see Cooke 2018)

As a consequence, current scholarship foregrounds structural processes such as spatial equilibrium in labor and housing markets (Partridge and others 2012), a decline in the frequency of workers changing jobs (Molloy, Smith, and Wozniak 2017), the impact of a half century of increasing economic insecurity (Clark and Lisowski 2017), and the widespread adoption of information and communication technologies (Cooke and Shuttleworth 2018). The apparent role of structural versus demographic factors in the decline in residential change and interregional migration highlights, once again, Zelinsky's foresight; while his aim was to integrate human geographic mobility into the vital transition, Zelinsky's predictions for the MT in Phase 5 emphasized structural processes over demographic ones.

Not only did Zelinsky anticipate a decline in interregional migration and residential change but he also linked Phase 5 to growing residential inertia. The migration decline may represent more of a paradigm shift regarding how human geographic mobility decisions are made rather than just changing conditions within which such decisions are made (Preece 2018). Hence, a suite of conflicting rhetorical terms has emerged for describing what appears to be a new status quo, such as “secular rootedness” (Cooke 2011), “waiting, stillness and stuckness” (Cresswell 2012), “stuck” (Foster 2017), and a “nation of hunkered-down homebodies” (*New York Times* 2010). Furthermore, since migration is a learned behavior, it seems probable that cohorts who have matured in the last thirty years and not experienced the mobility of the previous generation will see migration as a more risky endeavor in the future (Cooke 2018).

This paradigm shift links to broader contemporary social issues about how migration intersects with escalating income inequality, labor-market churn, lack of economic opportunity, rapid advances in labor-saving technologies, the disruptive possibilities of artificial intelligence, and geographic isolation. Hyperbole aside, Wong (2016) explains it this way:

“... you can't understand the hopelessness. The vast majority of possible careers involve moving to the city, and around every city is now a hundred-foot wall called 'Cost of Living.' Let's say you're a smart kid making \$8 an hour at Walgreen's and aspire to greater things. Fine, get ready to move yourself and your new baby into a 700-square-foot apartment for \$1,200 a month, and to then pay double what you're

paying now for utilities, groceries, and babysitters. Unless, of course, you're planning to move to one of 'those' neighborhoods."

which is not too different than what Zelinsky imagined:

"... with the evaporation of significant pools of unskilled labor, there would cease to be any movement of low-wage migrant labor to affluent areas unable to handle menial chores with local recruits. But by that time one can also visualize a degree of technological and social progress obviating the need for human drudges." (p. 248)

But Zelinsky did not foresee the rise of Global Cities, which depend on the presense of a low income, and often immigrant, workforce (Sassen 1994). Thus escalating costs of living do not result necessarily in exclusion of lower income workers, but rather shift migration and circulatory landscapes involving global and local scales. Increasingly, we find movement to and concentration of poverty in certain suburban locations (Cooke, 2010), and lower-income service-class workers' daily circulatory movements now take place over longer times and greater distances. Thus contemporary urban development and the rootedness in place residentially has mobility implications in terms of daily movements for certain classes of workers (Sultana, 2005). So with respect to the current internal mobility regime in the United States, and in several other places in the Global North societies, Zelinsky's mobility predictions for his Phase 5 society aligned quite well with observed trends and their interpretations. He failed, however, to foresee the new connections between internal mobility and international movement, a topic we expand on in the next section.

INTERNATIONAL MOBILITY

Zelinsky's thoughts about future international mobility were less successful. He predicted "some further immigration of unskilled labor from less developed areas" to, presumably, the Global North (p. 231). In this, Zelinsky was only partially correct. Since the 1970s, a considerable proportion of new immigrants moving to the Global North have come with relatively low endowments of human capital. These arrivals, however, have occurred in tandem with an influx of people with formal skills, education, and, increasingly, capital—developments he did not anticipate.

Why is this? In the United States, for example, the last comprehensive immigration reform took place in 1990. This legislation provides for four basic forms of immigration: family reunification, refugee/asylee, employment, and visa lottery. Unskilled immigrants tend to arrive via the first two categories; the skilled enter via the latter pair. There are no provisions for unskilled employment-based immigration. Using educational attainment as a proxy, the majority of immigrants to the United States fall into an "unskilled" category. Nevertheless, a considerable number also arrive with both undergraduate and advanced degrees, and this proportion is growing; given the current negative national disposition toward "family reunification" and the "visa lottery," it is likely to grow more in the future. Of course, there is a fifth, broad, category of entrant—the people in the country without authorization. The most common means by which the unauthorized population has grown is via visa overstays and "entry without inspection." Many, but certainly not all, of this group have a high-school education or less.

Drawing attention to “unskilled” international mobility thus was both hit and miss for Zelinsky. The movement of workers to the Global North is an issue of our time. And it is the “unskilled” and unauthorized that tend to draw the lion’s share of attention, be it in the form of concern over wages and employment prospects of native born or in terms of mobility and regulation. But workers with formal skills and/or resources are a large fraction of international movers and of considerable significance to the societies and economies they join. Immigration policies in several Global North countries (for example Australia, the United Kingdom, Canada) attract those with skills using point systems that favor tertiary educational qualifications, especially those in highdemand STEM (science, technology, engineering, and mathematics) fields, over family connections. Under Trump, the United States appears to be heading in the same direction. Zelinsky failed to anticipate this turn. Workers with formal qualifications are also likely to “circulate,” a topic on which Zelinsky had something to say and to which we now turn.

CIRCULATION

Wilbur Zelinsky predicted further “... acceleration in some current forms of circulation and perhaps the inception of new forms” (1971, 231). Our assessment is that Zelinsky was more than half right. We interpret this simple statement to include the transnational turn in migration studies. Starting in the early 1990s, some migration and mobility scholars began exploring the idea of transnationalism: economical, political, and cultural processes simultaneously rooted in, and transcending, nations. While the transnational turn in social science research may be relatively new (Bailey 2001), both the term and the idea are not. Mountz and Wright commented that international mobility associated with the United States has always been part of a larger set of mobilities and connectivities (1996). They drily observe that the term “trans-national” traces back to the early twentieth century (see Bourne 1916), “which also shows that some of the terms deployed to understand our changed reality are not new either” (Mountz and Wright 1996, 405).

Turning transnational has had a multitude of effects, shifting attention for example, from the notion of “brain drain” to “brain circulation” to assessing the socioeconomic effects of how the to-and-fro movement of ideas, capital, entrepreneurship, and people across national borders (Saxenian 2007). These movements can be tied to the life course. Ley and Kobayashi, for example, triangulated the movement between what they called “an economic pole” in Hong Kong and “a quality-of-life pole in Canada” as places on an extended but unified social field (2005). Similarly the term “sea turtles,” or *haigui* in Chinese, has come to refer to people born in China, who subsequently spend a few years abroad studying or working, and then return home with newly acquired human capital.

The advent of research on transnational migration links to the rise of the term “mobility” in related scholarship. For some, the notion of mobility brings together a wide variety of movement within a single analytical framework (Mavroudi and Nagel 2016). While migration implies a one-time, unidirectional move from an origin to a destination over some fixed duration (typically one year), mobility captures the different rhythms of repeat, circular, transnational, and onward migration as well other sorts of movement of shorter duration (not just years, but weeks, days, hours, minutes, or seconds). Through his

description of a range of circulatory and mobility types, some of very short duration and others of much longer time spans, and of the potential for interaction or substitution between them, Zelinsky's MT anticipated the emergence of this broader interest in mobilities.

Migration Processes in the “Future Superadvanced Society”

One aspect of “The Hypothesis of the Mobility Transition” that has received the least attention is perhaps the most interesting—the processes that would shape human geographic mobility in the future Phase 5. Two are particularly noteworthy in that they are emerging as driving forces in the aforementioned changes: regulation, and information and communication technologies.

REGULATION

Zelinsky said little about the regulation of mobility in the first four stages of the MT. He described movement accelerating from the initial phase and shifting orientation over time (that is, from rural → urban to urban → urban, and so on) without reference to any legal or state-imposed restriction. Only in Phase 5 did he speculate on the prospect of migration control for socio-political reasons at a variety of scales—not just in terms of international migration:

“... further general socioeconomic advance may well bring in its wake socially imposed mechanisms for controlling location and movement of populations” (p. 224)

and

“... Strict political control of internal as well as international movements may be imposed.” (p. 231)

The reason he argued for controls emerging at this endpoint of his transitions is unclear, mentioning the possibility of “mobility saturation” and “general socioeconomic advance bringing in its wake socially imposed mechanism for controlling location and movement of populations” (p. 248).

Surprisingly, in his discussion of mobility in Phases 1 through 4, Zelinsky completely ignores the historical regulation of mobility. This is, of course, a significant oversight. Over the last few centuries, the state has emerged as the primary arbiter of who belongs in a sovereign space by developing technologies such as the passport to legitimize presence in spaces and to control flows between them (Torpey 2000). The most notable example in the United States is of regulations on entry that emerged in the latter half of the nineteenth century, restricting entry according to health, literacy, and national origin. A few decades later, the Quota Act of 1921, and again in 1924, effectively closed the door for many and the situation remained this way for over forty years.

The historical power of the state to regulate mobility has not been limited to international movements. For example, serfdom legally constrained the movement of peasants in feudal Europe and relocations to emerging urban centers only occurred when crises in the mode of production disrupted social relations (Standing 1981); restrictions on labor recruiters,

supported by U.S. Supreme Court rulings, effectively limited the migration of southern rural blacks around the turn of the twentieth century (Alilunas 1937); and English agricultural interests tried to slow rural to urban migration using poor laws to subsidize agricultural wages, which reduced the wage differential between rural areas and cities (Polanyi and Maciver 1944)—although there is dispute about the efficacy of this effect (for example, see Boyer 1986). These examples are far from a complete inventory yet they illustrate that the state, or powerful groups with economic and political interests, have controlled the mobility of populations across all of Zelinsky's phases. But there is an argument to be made that the range, depth, and scale of migration controls in operation today is unprecedented and expanding, as Zelinsky hypothesized.

REGULATION AT AND BEYOND INTERNATIONAL BORDERS—The regulation of international migration at the border and beyond the border continues to escalate. In 2016, the United States elected a president who campaigned on building a wall to separate itself from Mexico. The fact that 1000 km of that border already had a wall and the other sections were heavily fortified and militarized, has not deterred the efforts to “build the wall.” This impulse may be seen as eccentric but Jones (2016) reminds us that many states, and not just Europeans ones, are increasingly engaged in attempts to exclude migrants and limit their access to resources and opportunities. The India-Bangladeshi border, for example, has one of the longest international barriers in the world. These efforts to exclude mainly focus on the poor and/or ethnic minorities. In contrast, the wealthy tend to travel and circulate without constraint. These borders are thus violent and excluding, harming and killing many migrants seeking a better life.

An important aspect of the regulation of international migration is the geographical extension of the state or extraterritorially. Migrants, not only at the border, but before and beyond the border, are being asked to show their papers now more than ever. Perhaps more than any other social scientist, Mountz has explored the power of states, especially those in the Global North, to extend their power beyond their own borders. In her 2010 book, *Seeking Asylum*, she argued that high-profile human smuggling events allowed states to ramp up restrictions on migration (Mountz 2010). She developed the idea of navigating the “long tunnel” upon arrival at an international airport to include detention centers that were designated a “port of entry” where migrants were considered to be still in transit. In subsequent work (see Mountz 2011) she has explored the multiple ways that states exclude migrants through extraterritorial practices, notably offshore detention (Lloyd and Mountz 2014) and interception (Williams and Mountz 2018). Invoking Ong's (2006) “graduated zones of sovereignty” to scale her analysis of sites that produce ambiguous legal standings for asylum seekers and migrants, Mountz argues that islands have become “key sites” in many systems of migration control and territorial struggle. Islands become part of an “archipelago of enforcement” and these spaces are used to “deter, detain, and deflect migrants from the shores of sovereign territory” (Mountz 2010, 118). Refugee camps do similar work, prolonging refugee situations for years, even decades. Many people with legitimate asylum claims confront an externalized asylum system designed to exclude potential refugees from affluent nations in the global North (for example Hyndman and Giles 2011).

REGULATION WITHIN INTERNATIONAL BORDERS—Border enforcement, in fact, is increasingly hard to locate in particular places. Winders (2007), for example, describes how the selective enforcement of local ordinances in locations far removed from any international boundary effectively relocates the border to be “everywhere” (Coleman 2007). The local regulation of who belongs within and who is excluded from the nation has distinct implications of certain populations’ circulation and mobility on both daily and seasonal bases. Using the same language of the border being “everywhere”, Leerkes and colleagues diagnose the mechanisms through which state-scale policies impact the migration patterns of immigrants (2013). Ellis and colleagues connect such state scale policy to immigrant spatial dispersion, finding that after anti-immigrant policies came into effect in many Southern states, noncitizen and naturalized Latinos from states without such policies were much less likely to move to states with them than in the 1990s (2016).

While the increasing regulation of international borders receives the most attention, the regulation of other types of internal mobility—even in countries like the United States where the premise is of unhindered movement—is already quite high and increasing. For example, child custody agreements frequently restrict the interstate migration of divorced parents (Cooke, Mulder, and Thomas 2016), zoning in growing cities reduces in-migration from declining regions by constraining housing supply and raising house prices (see Schleicher 2017), and the military dictates the movements of both “soldiers” and their families (see Cooke and Speirs 2005). Many of these regulatory effects are either idiosyncratic or indirect, but in the aggregate they likely have a significant dampening effect on internal migration. Broader and more purposeful mobility regulations, however, are becoming more common.

Much of this scholarship focuses on the effect of state occupational licensing requirements on interstate migration and its impact on the efficiency of labor markets (Johnson and Kleiner 2017). But the expansion of occupational licensing since the 1950s—especially among low-wage occupations—coincides with the decline in union membership, suggesting that occupational licensing may be a response to the increasing erosion of wages and job security. More powerful economic interests may be several steps ahead: thirty million U.S. workers are now covered by noncompete agreements, which means that were they to quit their current jobs, most would likely find themselves unemployable (Dougherty 2017). Noncompete agreements are designed to protect trade secrets and encourages employers to invest in human capital via on-the-job training without fear that a worker with newly acquired skills will suddenly leave to work for herself or a rival firm. But the clauses are written very broadly and apply far beyond “trade secrets” to include many low-wage jobs and only distantly related employment.

In a similar way the impacts of noncompete agreements on the mobility of low-wage workers is an increase in the regulation of movement, within a state, among the foreign born. Perhaps the most obvious example of this is the turn away from the EU Shengen agreement that allowed free movement of people within many EU member states. The exodus of migrants from Syria might have been the catalyst, but broader forces associated with growing nationalism perhaps plays just as important a role. In the United States, deferred action for childhood arrivals recipients were found to have increased spatial mobility (Abrego 2018). But the effects on mobility of legal status are complicated. Arizona’s Legal

Arizona Workers Act (2008) sparked an outflow of noncitizen Latinos from the state (Ellis and others 2014). Lack of legal status, however, could also lead to a hunkering down in place as people rely on known social networks that are embedded in particular spatial contexts (Ellis and others 2014).

The regulation of mobility internal to a country is not just important in the Global North. Kone and colleagues studied migration between states and districts (units contained within states) in India using 2001 census data (2017). As marriage migration dominates much movement, they had to control for gender in all aspects of their analysis. They found, using a model that controlled for physical distance, linguistic differences, and origin- and destination-specific factors through district fixed effects, that migration between neighboring districts in the same state is about 50 percent more frequent than migration between neighboring districts in different states. This state border effect was the same for men and women, and remained large and significant for different levels of human capital and age. The authors concluded that three state-based entitlement schemes inhibited interstate mobility. For the poor and unskilled, the nonportability of social welfare benefits, (for example, access to subsidized food and ration cards) de incentivized migration. For people who are not poor or lacking skills, interstate migration was dampened for two additional reasons: state residents received preferential access to state-controlled universities and technical institutes; and state governments were major employers and offered de facto preferences to their own residents.

As an element of both national industrialization as well as national security, internal migration in China has been highly regulated for decades using the hukou system of household registration. People seeking to change residence permanently must obtain approval from the authorities (Chan 2013). In the past, the hukou system operated as an internal passport system to prevent rural exodus. More recently, the system now regulates migration via limiting access to social entitlements. Thus rural migrants can move to and work in cities as “temporary residents,” but they cannot have permanent residency (hukou status) at their destination. In other words, these migrants are ineligible for many local benefits and rights that ordinary local urban residents qualify for automatically. Chan thus identified two categories of internal migrant in China: those with residency rights (bendi hukou, or hukou migrants) and those without hukou residency rights (non-hukou migration) (2013). The former normally includes only the rich or the highly educated, and their immediate family members. The latter tend to be unskilled workers who have moved from rural areas to work in urban destinations.

INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTS)

Technologies that may have seemed like science fiction a few decades earlier had become realities by 1971 (as examples, the Apollo moon landings, the emergence of high-speed computing, satellite communications, and commercial jet travel). Hence, it is not a surprise that Zelinsky conjectured how improvements in ICTs would impact future mobilities:

“There are concurrent changes in both form and intensity of social mobility and in the movement of information, and under certain conditions the potential the potential migrant may exercise the option of changing his locus in social space or

of exploiting a superior flow of information rather than engaging in a territorial shift.” (p. 222)

He was quite clear that ICTs could provide substitutes for internal migration that would contribute to the decline in migration and an increase in circulation. While the latter has been observed and integrated into the literatures on both mobilities and circulation, the former has been ignored. Indeed, the widespread presumption is that for some, especially highly skilled occupations, ICTs break the need to live and work in the same locale (see Button and Vega 2008). For example, there are many academics who live beyond commuting range from their institution and who work from home using ICTs to remain in contact with their institution, and then engage in a long-distance trip for two to three days a week during the academic year for their required face-to-face responsibilities. Thus an assumption has been that ICTs not only enhance circulation but also migration. This, however, ignores the possibility that ICTs, by allowing individuals to choose a preferred, sometimes more accessible, place of residence may then result in less migration in the future because of residential satisfaction.

Responding to this presumed link between ICTs and higher rates of migration (see Vilhelmson and Thulin 2013; Thulin and Vilhelmson 2014), Cooke and Shuttleworth (2018) countered that ICTs may reduce both residential mobility and interregional migration through three mechanisms: (1) ICTs can provide alternatives to migration such as working remotely, accessing higher education opportunities online, and maintaining contact with kith and kin who have already migrated; (2) to the degree that ICTs improve the quality and quantity of information about distant locales, ICTs may actually reduce both onward and return migration because ICTs may improve the quality of the initial migration decision; (3) ICTs may enhance attachment to place thereby reducing mobility by increasing the quality and quantity of information on the current place of residence through the search for jobs, housing, romantic partners, affinity groups, and cultural and political events, and also through the accumulation of much more mundane local information such as directions and restaurant reviews.

Cooke and Shuttleworth presented empirical evidence using data from the Northern Ireland Longitudinal Study that showed that the use of ICTs reduced both residential mobility and interregional migration (2018). The effect is strongest for residential mobility, hinting that the use of ICTs may actually enhance residential rootedness and attachment to place. This conclusion is consistent with research in transportation geography that shows that the ability to work remotely from home with the aid of ICTs need not result in higher rates of residential mobility; rather, remote working is more likely a way to ameliorate the negative effects of a long commute and in fact in some cases help to hold people in place (see Ory and Mokhtarian 2006; Muhammad and others 2007; Ettema 2010). Thus, Zelinsky’s predictions regarding the effect of ICTs on geographic mobility were correct, but that they have not been fully appreciated until recently.

Discussion: Mobility in the Future

“The Hypothesis of the Mobility Transition” was written just as the latest wave of globalization was hitting. While commentators may point to other eras as “global,” the last few decades have been remarkable. By nearly any metric, the current era of globalization is unprecedented. Flows of goods, services, and finance now account for over 36 percent of global GDP, up 50 percent since 1990. Now, one in three goods crosses national borders, and more than one-third of financial investments are international transactions. The United Nations estimates that 258 million people live outside of their country of birth (2017). According to one book title, we live in an “age of migration.”

That being said, 2016 may have marked a turning point in the seemingly inexorable drive to ever greater globalization and interconnectedness. In the United States, both the Democratic and Republican presidential candidates opposed the Trans-Pacific Partnership (TPP) trade agreement. President Trump ran for office on an anti-free trade platform, including opposition to the North American Free Trade Agreement (NAFTA). In 2015, the European Union came under strain from a financial collapse in Greece, and in 2016, from the Brexit referendum in the United Kingdom. The response, in the West as well as elsewhere, to the slaughter and dislocations in Syria (and other Muslim countries such as South Sudan) that have produced the worst refugee crisis since World War II has been to “shift and contain” rather than “share and receive.”

To the list of those in Europe and the United States who are keen to build new barriers and become nostalgic for a time when globalization was less intense, we should add Recep Erdo an in Turkey, Vladimir Putin in Russia, Xi Jinping in China, and Narendra Modi in India. They might not be overtly anti-free trade, anti-immigrant, or the like, but make no mistake: their popularity is based on their appeals to national pride over any human rights derived from a scale that would transcend the nation state. These new nationalisms often come in physical form; new walls and barriers are being built in surprising number of places. The Iron Curtain has been reproduced, not in situ, but elsewhere, in many places.

While we have less confidence than Zelinsky in making longer-term predictions, it seems to us that the future more likely promises greater rather than reduced regulation of movement, but especially directed toward those lacking formal education and/or resources. Others may find their mobility unconstrained and these people are likely to possess skills or resources favored in the global economy. Monitoring and registration technologies and policies that regulate such differences in mobilities between groups are already in place but are likely to develop further, sifting out those favored from those less so with greater precision. Visa policies that favor the skilled along with registrations and technologies that speed the passage of some but not others across international borders, or confer the rights of residence in specific zones or ease of mobility within countries, are already in operation and seem likely to expand rather than retrench. Under more tightly regulated conditions, unskilled immigrant workers, and perhaps the skilled too, may find their mobilities and rights of residence in destination countries even more tightly constrained going forward as states aim to expand temporary visa guest-worker programs as substitutes for their growing reluctance to accept permanent immigration.

Within countries, people without the means to afford to live in those metropolitan areas where the majority of economic opportunity and wealth is to be found may be stuck in place, or find the only way to access these opportunities is to relocate temporarily for work in these places. The decline in migration, though, may become a means for enhancing community resilience; as external forces reduce internal migration people in marginal communities may see rootedness as a strategy for resisting the ravaging effects of globalization. The rise of occupational licensing among low-wage workers is an important case to consider. In any event, the current decline in internal migration is likely to continue well into the future regardless of external causes since the experience of immobility alters how people view the relationship between the risk of staying versus the risk of moving.

Conclusion

“The mobility transition remains one of the critical ideas in population geography and is still relevant ... to the development of new theoretical approaches in migration.” (Skeldon 2012, 159)

Wilbur Zelinsky’s ability to foresee some of the main aspects of human mobility in the fifty-year era of global integration and spatial interaction was impressive. It is both frustrating and intriguing that he left few clues as to what generated these forecasts. But his predictions of a general decline in international and internal migration and residential change, the increasing regulation of migration—especially internally, and the possibility for ICTs to both provide substitutes for migration and to support greater circulation from a fixed residential location were clearly prescient. Just as the MT did nearly fifty years ago, a full consideration and investigation of these ideas continues to be warranted. Zelinsky’s “The Hypothesis of the Mobility Transition” is perhaps as revolutionary today as it was in 1971 because it leads us towards questions regarding the presumed linkages between mobility, economic growth, technological change, and community. Hence, “The Hypothesis of the Mobility Transition” is not only a part of the foundation of population geography but it is also part of the future of population geography.

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