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Resituating relaunched migration systems as emergent entities *manifested in geographic structures*

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Abstract

While important and timely, the recent effort to ‘relaunch’ migration systems as emergent entities is premised on a mischaracterization and subsequent dismissal of decades of research showing that systems are ultimately expressed in geographic structures in the form of migration networks comprised of a set of places that are connected to one another by migration flows. In this paper, we reconcile this relaunch with past research on migration systems by considering whether and how changes in some of the actors and dynamics that create and sustain migration systems are expressed in corresponding changes in the geographic structure of migration flows. By elucidating these linkages, our work helps to strengthen the aforementioned relaunch of migration systems by ensuring greater continuity with prior research and, going forward, the continued utility of a migration systems perspective for diverse audiences and issues.

Keywords

analytical sociology; components of change; geographic structure; migration flows; migration network; migration system

1. Introduction

Recently, there has been a concerted effort to ‘relaunch’ migration systems as ‘emergent social entities’ that are actively and continually created and sustained by diverse sets of actors and dynamics at different levels of scale (Bakewell 2013: 1–2; see also de Haas 2010; Bakewell et al. 2016). We welcome these important and timely developments. At the same time, we take issue in this paper with their jumping off point, which consists of mischaracterizing decades of research on the fact that migration systems are manifested in ‘identifiable geographic structures’ in the form of migration networks comprised of a set of places that are connected to one another by migration flows (Massey et al. 1998: 61; see also Kritz and Zlotnik 1992), an idea with origins in the inherently spatial nature of migration (Mabogunje 1970; Roseman 1971). While this body of research is subsequently dismissed by the proponents of the above relaunch as ‘macro-level abstraction ... [divorced] from any empirical basis’ (Bakewell 2013: 1), in our view, this is nothing more than hand-waving in the face of the very hard work that is required to show how (i.e. the ways in which) changes

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within migration systems are ultimately expressed in corresponding changes in the geographic structure of migration flows (see Willekens et al. 2016).

Accordingly, for the sake of greater continuity with prior research, as well as the continued utility of a migration systems perspective for many audiences and to understand a range of important issues (e.g. see Jennissen 2007; Abel 2013; IOM 2013; Kupizewski et al. 2013; Martin 2013; Curtis et al. 2015; DeWaard et al. 2016; Gölar and Krišj 2016; Messias et al. 2016; Hauer 2017), we connect these two lines of research. We organize our work in this paper into two parts. First, we link some of the actors and dynamics discussed in the above relaunch to two expressions, or, what we call, *components* of change in the geographic structure of migration flows. As we later discuss, these components include the ‘diversity’ of migration ties (Czaika and de Haas 2014: 283–92) and the ‘intensity’ of migration flows (Bell et al. 2002: 442) among places. Second, in an empirical demonstration, we detail and differentiate these two components in order to help readers ‘see’ the ways that migration systems are manifested in data on and analyses of migration flows. In doing so, our efforts are intended to strengthen the above relaunch, which is still in its early stages, especially empirically (Bakewell 2013: 15; Bakewell et al. 2016: 2), and should therefore welcome and incorporate our contributions.

2. Migration systems

Mabogunje (1970: 3) originally defined a migration system as ‘a complex of interacting elements, together with their attributes and relationships.’ The elements, or actors, comprising a migration system take many forms and can include, for example, individuals and households, groups and institutions, local and national governments, and even supranational bodies. Each characterized by a unique set of attributes (demographic, economic, geopolitical, sociocultural, etc.), actors engage in exchanges, or relationships, with one another. Migration decisions and behaviors, and ultimately the migration flows between places that result, are one type of relationship (Kritz and Zlotnik 1992; Massey et al. 1998). Other types of relationships include flows of information and preferences, financial capital, and goods and services, to name just a few (Fawcett 1989; Bakewell 2013).

2.1 Relunched as emergent entities

Due in part to the functionalist origins of migration systems theory (von Bertalanffy 1950; Mabogunje 1970), a persistent problem with accounts of migration systems is their inability to explain how (i.e. the specific and tangible ways that) systems change over time (de Haas 2010; Bakewell 2013). Systems are routinely defined *a priori* (e.g. the ‘European migration system’; see Favell 2008: 711) and often at a point in time, and whichever set of actors, attributes, and relationships happen to be contained therein are subsequently inventoried and assessed. This results in rather convenient portraits that fail to consider how migration systems are actively and continually ‘marked and made,’ to borrow the phrase from constructivist accounts of other social phenomena (Desmond and Emirbayer 2009: 340).

Accordingly, taking cues from theoretical developments in several areas (e.g. see Emirbayer and Mische 1998; Bunge 2004), Bakewell (2013: 1–2) sought to ‘relaunch’ research on migration systems by conceptualizing systems as ‘emergent social entities’ that are created

and sustained (e.g. ritualized, see Kandel and Massey 2002; Cohen 2004; Horváth 2008; Timmerman 2008) by diverse sets of actors and dynamics at different levels of scale. Conceptualizing migration systems in this way directs the focus of inquiry to the ‘rules of the game’ governing changes over time in the composition of actors, their attributes, and their relationships, which carries several critical insights that are largely missing from, or at least not explicit in, prior research (Bakewell 2013: 13). First, the role of human agency must be made explicit because migration systems change depending on whether and how actors [re]negotiate their relationships based on their evolving perceptions, experiences, and aspirations, as well as on the specific structural constraints imposed by their environments. Second, given the regularity and intensity of relationships in migration systems, the complex internal dynamics that can emerge to render systems self-reinforcing and self-sustaining must also be elucidated.

2.2 Manifested in geographic structures

While the specifics, merits, and applicability of the above relaunch of migration systems have been and continue to be debated elsewhere (Bakewell 2013; Bakewell et al. 2016), our focus in this paper is with a more foundational issue—namely, the jumping off point for the relaunch itself. To provide some context for our concerns, drawing on Mabogunje’s (1970) definition, prior research has acknowledged the many actors and dynamics at work in migration systems (Fawcett 1989; Kritz and Zlotnik 1992; Massey et al. 1998). Importantly, these studies have *also* devoted considerable attention to how changes within migration systems are ultimately manifested in ‘identifiable geographic structures,’ or migration networks, consisting of a set of places that are connected to one another by migration flows (Massey et al. 1998: 61; see also Zlotnik 1992). This latter emphasis has origins in the idea that migration is an inherently spatial process (Mabogunje 1970; Roseman 1971), and has informed empirical research on migration systems using data on place-to-place migration flows (Nogle 1994; Rogers et al. 2002; DeWaard et al. 2012, 2016; Abel 2013; Abel and Sander 2014; Curtis et al. 2015; Messias et al. 2016; Hauer 2017).

Given this extensive body of research, it was therefore surprising and concerning to see this work grossly mischaracterized and subsequently dismissed by Bakewell (2013: 5), who suggested that these studies *equate* a migration ‘system ... [with] little more than a summary of [migration] flows,’ and are therefore too ‘vague’ to see systems as emergent entities. These studies, however, make no such equivocation, and, instead, are concerned with the fact that changes within migration systems are *expressed in* corresponding changes in the geographic structure of migration flows. Micro-macro linkages of this sort are an important fixture in social science research (Coleman 1990; Hedström 2005; Schelling 2006; Entwisle 2007; Manzo 2014), including research on migration (Willekens et al. 2016) and migration systems (Kritz and Zlotnik 1992; Massey et al. 1998; de Haas 2010).

With respect to the relaunch of migration systems, these linkages deserve to be unpacked for at least three reasons. First, doing so will help to establish greater continuity with prior research. Second, given recent concerns about the continued theoretical (Bakewell 2013) and empirical (Kupizewski et al. 2013) utility of a migration systems perspective, connecting changes within migration systems to corresponding changes in the geographic structure of

migration flows will help to ensure that a migration systems perspective continues to be useful to many audiences and to understand a wide range of important and timely issues, including, for example, migration and population change in response to environmental and economic shocks (Curtis et al. 2015; DeWaard et al. 2016; Gölar and Krišj ne 2016; Hauer 2017), new and established ‘migration corridors’ worldwide and associated policy implications (IOM 2013: 59–63; see also Martin 2013), and the reliability and validity of [new] migration data and methods (Abel 2013; Kupizewski et al. 2013; Messias et al. 2016). Third, and finally, clarifying these linkages will only strengthen the above relaunch, and will therefore help to ensure the success of Bakewell’s (2013) project.

3. Migration systems as emergent entities manifested in geographic structures

In this section, we link some of the actors and dynamics in the above relaunch to corresponding expressions or, what we call, *components* of change in the geographic structure of migration flows. By components of change we mean the set of outlets through which changes within migration systems, whatever their source(s), are expressed geographically in corresponding changes in a set of places that are connected (or not) to one another by migration flows of different magnitudes. As we show in Figure 1, we have in mind two components of change in the geographic structure of migration flows. The first component is the ‘diversity’ of migration ties among places (Czaika and de Haas 2014: 283–92; see also Arango 2000; Vertovec 2007; Castles et al. 2014), i.e. which places are (versus are not) connected to one another by migration flows. In Figure 1, the diversity of migration ties is represented by directional bands, or cords, which denote the presence (versus absence) of place-to-place migration flows. The second component is the ‘intensity,’ or size, of migration flows (Bell et al. 2002: 442). In Figure 1, the intensity of migration flows is represented by the width of the cords, with wider cords indicating larger flows.

In each of the subsections that follow, the logic of our approach is to provide a starting point for connecting some of the actors and dynamics discussed in the relaunch of migration systems to corresponding changes in the diversity of migration ties and/or the intensity of migration flows. Importantly, we do not pretend to exhaust these linkages. Instead, our work in this section can and should be viewed as an initial attempt to outline how migration networks, which should not be confused with *migrant* networks (see Section 3.3), like the one shown in Figure 1 change over time on account of underlying changes in the actors and dynamics that create and sustain migration systems. In this way, contrary to the recent suggestion by Bakewell et al. (2016) to go *beyond* migration networks, our aim in this section, and in this paper more generally, is to more clearly *connect* these networks to the emergent nature of migration systems (see Willekens et al. 2016).

3.1 Pioneer migration

According to Bakewell (2013: 7) ‘pioneer’ migrants are those individuals who ‘get the whole thing started.’ More concretely, pioneer migrants are those who decide to migrate for the first time and in contexts (household, community, etc.) where migration is typically a new phenomenon (de Haas 2010; Lindstrom and Ramírez 2010; Bakewell et al. 2012). In

some cases, the migration decisions and behaviors of pioneer migrants are based exclusively on conditions in their place of residence (Stark and Bloom 1985; Black et al. 2011). In other cases, knowledge of conditions in potential destination areas, as well as of the economic and psychic costs of migrating, may also play an important role (Bodvarsson and Van den Berg 2013).

Given the lack of previous migration experience, pioneer migrants can be viewed as trailblazers whose migrations are expressed geographically (e.g. ‘at the macro, country-to-country level;’ see de Haas 2010:1614) in the ‘diversity ... of origins and destinations,’ with particular emphasis placed on the ‘diversification’ of migration ties among places (Czaika and de Haas 2014: 283–92; see also Arango 2000; Vertovec 2007; Castles et al. 2014). In practice, the link between pioneer migration and the diversification of migration ties is often accompanied by increases in the intensity of migration flows, the second component of change of interest in this paper. For example, when countries enact or adjust their immigration policies to permit immigration from new sending countries, as the United States did in 1952 with the Immigration and Nationality Act, that established quotas for immigrants from countries in the Eastern Hemisphere for the first time since the exclusionary 1924 Immigration Act (Dinnerstein and Reimers 2014), the diversification of migration ties is often the harbinger—Pollard et al. (2008: 1) used the term ‘floodgates’—for the intensification of migration flows. That said, it remains that the impetus for these changes is the diversification of migration ties among places that is produced, in part, by pioneer migration.

3.2 Repeat migration

With migration, pioneer migrants acquire valuable ‘migration-specific human capital’ (i.e. detailed first-hand knowledge of and experience with the migration process) (Massey and Espinosa 1997: 948). This, in conjunction with the fact that their aspirations and intentions change over time (Bakewell 2013), can result in repeat migration decisions and behaviors. Migration theory suggests a number of reasons for repeat migration. For example, guided by the idea that migration is an adaptive strategy to mitigate actual or anticipated livelihood disturbances at home (Stark and Bloom 1985), households might grow accustomed to, and dependent on, regular infusions of financial capital in the form of migrant remittances (Durand et al. 1996; Taylor 1999; Sumata 2002), thereby requiring repeat migration to sustain household production and consumption patterns over the long term. If not, or if so, structural factors in destination areas (persistent demand for labor, higher wages, etc.) may continue to exert strong ‘pull’ effects on pioneer migrants who have returned home (Bodvarsson and Van den Berg 2013). Importantly, depending on the nature of the work involved (full-time, seasonal, etc.), repeat migrations may take on a highly regular and cyclical character (Quinn 2011; DeWaard et al. 2017).

Because migration-specific human capital is unique to one’s past migration experience(s) (to particular destinations, via specific routes, etc.), repeat migrants tend to utilize already established migration ties between places. This means that repeat migration is expressed geographically in the form of stabilizing (i.e. neither increasing nor decreasing) the diversity

of migration ties. Additionally, because repeat migrants are, by definition, not new migrants, their movements also contribute to stabilizing the intensity of migration flows.

3.3 Migrant networks and the cumulative causation of migration

Considering the inherently social nature of migration (Massey and España 1987), both pioneer and repeat migrants act as sources of ‘migration-specific social capital’ (i.e. secondhand information about the migration process) for persons in sending areas, including non-migrants (Massey and Espinosa 1997: 953). In other words, by virtue of their migration experience, pioneer and repeat migrants help to create and enlarge migrant networks (Bakewell 2013). A key characteristic of migration-specific social capital, and of social capital more generally (see Portes 1998), is that of fungibility insofar as it can be converted into concrete resources to lower the costs and increase the benefits of migrating. In contexts characterized by extensive migrant networks, migration can become an expected and routinely reinforced (normatively, institutionally, etc.) part of the life course (Kandel and Massey 2002; Cohen 2004; Horváth 2008; Timmerman 2008). Additionally, an established ‘migration industry’ comprised of a sundry of actors (businesses and labor recruiters, governments and humanitarian organizations, smugglers and traffickers, etc.) with different motivations helps to further facilitate migration (Gammeltoft-Hansen and Sørensen 2013: 1; see also Ali and Hartmann 2015; Olayo-Méndez et al. 2014). As a result, more and more people in the sending area, including non-migrants, select into migration, which, in turn, further enlarges migrant networks and contributes to additional migration in a process called ‘cumulative causation’ (Massey 1990; Bakewell 2013: 5).

As with repeat migration, the process of cumulative causation tends to unfold along already established migration ties between places because the information and resources embedded in migration-specific social capital are highly specific to the unique migration experiences of past and current migrants. As a result, the diversity of migration ties among places remains largely unaltered. However, by virtue of drawing non-migrants into the migration stream, the process of cumulative causation is further expressed geographically via increases in the intensity of migration flows that, in some cases, can be substantial (Massey and Zenteno 1999).

3.4 Other linkages and simultaneous expressions of change

The actors and dynamics discussed in the preceding subsections are sourced from Bakewell’s (2013) relaunch and, as we noted earlier, do not exhaust the range of potential linkages to the diversity of migration ties and/or the intensity of migration flows. To be sure, consider recent work by Curtis et al. (2015: 1269; see also Fussell et al. 2014; DeWaard et al. 2016) on ‘recovery migration’ to New Orleans and other areas in the United States that were impacted by Hurricanes Katrina and Rita in 2005. Given earlier patterns of migration and population displacement during and in the immediate aftermath of these events, coupled with the strong desires of many displaced residents to return ‘home’ (Chamlee-Wright and Storr 2009: 625) and the supporting roles played by organizational and institutional actors (e.g. ‘pro-growth coalitions’) (Pais and Elliott 2008: 1415), the intensity of recovery migration flows increased. However, the diversity of recovery migration ties decreased as

migration became more spatially concentrated and largely originated from places in the United States where displaced residents were living (e.g. Houston, Texas).

In addition to demonstrating other types of potential linkages from the actors and dynamics within migration systems to the diversity of migration ties and the intensity of migration flows, the above study is useful because it raises questions about how to actually ‘see’ the latter two components in data on, and analyses of, migration flows. It also raises the further question of disentangling the relative contribution of each component in order to determine which one is—and, thus, which actors and dynamics in the underlying migration system likely are—primarily at work. These two questions motivate our empirical efforts in Section 4.

4. Detailing and differentiating the components of change in migration flows

In this section, we lay out an integrated empirical approach that can be used to measure and subsequently compare changes in the diversity of migration ties and the intensity of migration flows, each of which provides a unique and valuable window into some of the likely actors and dynamics at work in migration systems. In the process, we seek to counterbalance the ‘unashamedly theoretical’ nature of the above relaunch with some much needed empirical insights (Bakewell et al. 2016: 2).

4.1 Operational definitions and measures

As a place to start, we write the total volume of migration that is expressed by a given migration system as $\sum_i \sum_j M_{ijp}$, where M_{ijp} is the size of migration flow from place i to place j in period p . We then cross-multiply and rearrange terms to arrive at the following:

$$\sum_i \sum_j M_{ijp} = \left(\frac{\sum_i \sum_j M_{ijp}}{\sum_i \sum_j T_{ijp}} \right) \times \left(\frac{\sum_i \sum_j T_{ijp}}{C_p} \right) \times C_p, \text{ for } i \neq j \quad (1)$$

The first term, $\frac{\sum_i \sum_j M_{ijp}}{\sum_i \sum_j T_{ijp}}$, summarizes the average intensity of migration flows, and is calculated as the ratio of the total volume of migration to the total number of migration ties among places, where $T_{ijp} = 1$ if place i is connected to place j by a migration flow of any size in period p (0 otherwise). The second term, $\frac{\sum_i \sum_j T_{ijp}}{C_p}$, summarizes the average diversity of migration ties, and is calculated as the ratio of the total number of migration ties among places to the number of places comprising the geographic boundaries of the migration system. The third term, C_p , is included to account for any changes over time in the geographic boundaries of the migration system, which, historically, has been a persistent concern in empirical efforts to identify migration systems (Zlotnik 1992; DeWaard et al. 2012; Bakewell 2013).

For both clarity and ease of notation later on, we rewrite Equation (1) to express the total volume of migration in period p , now M_p , as a product of the average intensity of migration flows, now $\bar{M}_p$, the average diversity of migration ties, now $\bar{T}_p$, and the number of places comprising the geographic boundaries of the migration system, C_p .

$$M_p = \bar{M}_p \times \bar{T}_p \times C_p \quad (2)$$

Because the size of migration flows depends, in part, on population size, Equation (2) can be adapted to accommodate migration rates (versus counts). This is achieved by replacing the total volume of migration by the total rate of migration, R_p , and the average size of migration flows by the average migration rate, $\bar{R}_p$.

$$R_p = \bar{R}_p \times \bar{T}_p \times C_p \quad (3)$$

Equations (2) and (3) thus allow us to ‘see’ the diversity of migration ties and the intensity of migration flows in empirical data and analyses, and are the required inputs for the standardization and decomposition procedures, detailed in the next subsection, to disentangle the relative contribution of each component.

4.2 Standardization and decomposition

As we noted earlier, in differentiating the diversity of migration ties and the intensity of migration flows, we can determine the relative contribution of each component in order to see which one is—and, thus, which actors and dynamics in the underlying migration system likely are—primarily at work. To do this, we propose an innovative application of the set of demographic standardization and decomposition procedures developed by Das Gupta (1993). Below, we apply these procedures to the total volume of migration in Equation (2). However, in our empirical example in Section 4.3, we provide results of these procedures applied to both the total volume of migration and the total rate of migration in Equations (2) and (3), respectively.

A simple starting point for our work in this section is to consider that we have data on each component for only two periods ($p = 1, 2$). Using these data and Das Gupta’s (1993) equations, we can then calculate *standardized estimates* of the total volume of migration in the first and second periods, respectively:

$$M_{1,2}^{\bar{M}, \bar{T}, C} = \left[\frac{\bar{T}_2 C_2 + \bar{T}_1 C_1}{3} + \frac{\bar{T}_2 C_1 + \bar{T}_1 C_2}{6} \right] \bar{M}_1 \quad (4)$$

$$M_{2.1}^{\bar{M}, \bar{T}, C} = \left[\frac{\bar{T}_2 C_2 + \bar{T}_1 C_1}{3} + \frac{\bar{T}_2 C_1 + \bar{T}_1 C_2}{6} \right] \bar{M}_2 \quad (5)$$

These quantities summarize the total volume of migration in each period had only the average intensity of migration flows changed between these two periods. Put differently, these quantities are standardized by the average number of migration ties and the number of places comprising the geographic boundaries of the migration system.

We can likewise calculate a similar set of standardized estimates of the total volume of migration in the first and second periods had only the average diversity of migration ties changed between these two periods:

$$M_{1.2}^{\bar{T}, \bar{M}, C} = \left[\frac{\bar{M}_2 C_2 + \bar{M}_1 C_1}{3} + \frac{\bar{M}_2 C_1 + \bar{M}_1 C_2}{6} \right] \bar{T}_1 \quad (6)$$

$$M_{2.1}^{\bar{T}, \bar{M}, C} = \left[\frac{\bar{M}_2 C_2 + \bar{M}_1 C_1}{3} + \frac{\bar{M}_2 C_1 + \bar{M}_1 C_2}{6} \right] \bar{T}_2 \quad (7)$$

Combining the standardized estimates in Equations (4) through (7) with similar standardized estimates that account for changes in the set of places comprising the geographic boundaries of the migration system (not shown), we can then *decompose the change* in the total volume of migration as follows:

$$M_2 - M_1 = \left[M_{2.1}^{\bar{M}, \bar{T}, C} - M_{1.2}^{\bar{M}, T, C} \right] + \left[M_{2.1}^{\bar{T}, \bar{M}, C} - M_{1.2}^{\bar{T}, \bar{M}, C} \right] + \left[M_{2.1}^{C, \bar{M}, \bar{T}} - M_{1.2}^{C, \bar{M}, \bar{T}} \right] \quad (8)$$

The change in the total volume of migration between these two periods, $M_2 - M_1$, is thus a function of an intensity effect, $M_{2.1}^{\bar{M}, \bar{T}, C} - M_{1.2}^{\bar{M}, T, C}$, and a diversity effect,

$M_{2.1}^{\bar{T}, \bar{M}, C} - M_{1.2}^{\bar{T}, \bar{M}, C}$, with the remainder due to any change in the set of places comprising the geographic boundaries of the migration system, $M_{2.1}^{C, \bar{M}, \bar{T}} - M_{1.2}^{C, \bar{M}, \bar{T}}$. The key takeaway here is that by comparing the size of the intensity and diversity effects, we can determine which component is—and thereby speculate on which actors and dynamics in the underlying migration system likely are—primarily driving change in the geographic structure of migration flows.

Equations (4) through (8) must be considerably adapted if data are available for more than two periods. And, while we do not review each of these equations here (see Das Gupta 1993), the more generic version of Equation (8) that can accommodate any number of periods of interest can be written as follows:

$$\Delta M_{p^*, q^*} = \Delta M_{p^*, q^*}^{\bar{M}^*} + \Delta M_{p^*, q^*}^{\bar{T}^*} + \Delta M_{p^*, q^*}^{C^*} \quad (9)$$

Here, the change in the total volume of migration between any two periods p and q is a function of an intensity effect, $\Delta M_{p^*, q^*}^{\bar{M}^*}$, and a diversity effect, $\Delta M_{p^*, q^*}^{\bar{T}^*}$, with the remainder due to any change in the set of places comprising the geographic boundaries of the migration system, $\Delta M_{p^*, q^*}^{C^*}$.

4.3 A demonstration: The case of the European Union migration system

To illustrate the approach laid out in the previous section, we focus on the case of the EU migration system over the past 25 years. As many have argued (Zlotnik 1992; Nogle 1994; Massey et al. 1998; Bonifazi 2008; Favell 2008; DeWaard et al. 2012; Okólski 2012; van Mol and de Valk 2016), the EU, and Europe more generally, is a clear example of a migration system by Mabogunje's (1970) definition (see also Kritz and Zlotnik 1992). The EU also provides a unique opportunity to showcase how the approach described above can easily accommodate 'the emergence of new elements' in the form of new member countries given several enlargements of the EU over the study window (Bakewell 2013: 13).

4.3.1 Migration flow data—Recently, a new set of estimates of country-to-country migration flows (see Abel 2013, 2015; Abel and Sander 2014), the most geographically and temporally encompassing set of their kind to date, has generated considerable interest in and concerns about the current state of migration data (Sander et al. 2014; Stockton 2014; Ali and Hartmann 2015; Mingels 2016; Sorrel 2016; Willekens et al. 2016). We use these estimates in our analysis as a way to continue these important conversations, being careful to highlight their many limitations along the way.

These estimates were developed from country-level migrant stock data, disaggregated by country of birth, taken from various national censuses and other administrative sources (Özden et al. 2011; United Nations 2015). The underlying intuition is that any change in country-level migrant stocks by place of birth between two consecutive periods (e.g. censuses) must be the product of component changes in fertility, mortality, and migration per the demographic balancing equation (Preston et al. 2000: 2–3). Accordingly, after accounting for fertility and mortality using data from the United Nations (2015), Abel (2013, 2015) developed estimates of country-to-country migration flows every five-years over the past several decades. Given his estimation procedures (Abel 2013), these estimates are the *minimum* counts of migration flows required to match the aforementioned migrant stock data for consecutive periods, and, as such, reflect the definition and timing criterion used by receiving (versus sending) countries to officially record and thereby count migrations and migrants (for an extended discussion of these definitions and timing criteria, as well as of other issues, in and across countries in Europe, see Poulain et al. 2006).

For this demonstration, we use Abel's (2015) estimates of migration flows among countries in the EU every five years from 1990–95 to 2010–15. In Figure 2, we display total counts (Panel A) and rates (Panel B) of intra-EU migration flows in each period over the 25-year observation window. Migration flows increased from 611,403 persons (a rate of 35.3 persons per 100,000) during the 1990–95 period to 3 million persons (121.4 persons per 100,000) during the 2005–10 period, before falling to 2.2 million persons (86.4 persons per 100,000) in the final period. In both absolute and relative terms, the largest period-to-period increase occurred between the 1995–2000 and 2000–5 periods, which clearly coincides with the 2004 enlargement of the EU that added 10 new member countries and was accompanied by pronounced migration from new-accession to EU-15 countries (Pollard et al. 2008; Kahanec et al. 2010). In the most recent period, intra-EU migration fell considerably, likely an aftershock, at least in part, of the global economic recession (Fix et al. 2009; Papademetriou et al. 2010; Abel 2015).

4.3.2 The components of change in intra-EU migration flows—In Figure 3, we display estimates of the two components of change in the geographic structure of intra-EU migration flows. The diversity of migration ties increased from an average of 10 ties per country during the 1990–95 period to an average of 23 ties per country during the 2005–10 period, before falling slightly in the last period. In contrast, with some fluctuations, the intensity of migration flows decreased over the study window. Substantively, increases in the diversity of migration ties are consistent with the idea espoused earlier in Section 3.1 that the set of relevant actors and dynamics in the underlying EU migration system likely included pioneer migrants and migration. Of course, as we noted in Section 3.4, there are likely other actors and dynamics at play, as well.

Also of interest in Figure 3 is the temporal sequencing of changes in the diversity of migration ties and the intensity of migration flows. The largest increase in the diversity of migration ties occurred between the 1995–2000 and 2000–5 periods with the 2004 enlargement of the EU. Between these same two periods, the intensity of migration flows decreased. However, between the next two periods, 2000–5 and 2005–10, the intensity of migration flows increased. This temporal sequencing of an increase in the diversity of migration ties followed by an increase in the intensity of migration flows is consistent with the idea that the cumulative causation of migration, as expressed in an increase in the intensity of migration flows, is preceded in time by pioneer migration, as expressed primarily in the diversification of migration ties. Of course, to be sure that these linkages are in fact operating, one would first need to consider and subsequently rule out alternatives, which is beyond the scope of this admittedly simple demonstration.

4.3.3 Decomposition results—Going one step further, we can determine the relative contribution of each component of change over time. These results are displayed in Figure 4. Between the first two periods, 1990–95 and 1995–2000, the effect of each component was positive, which means that changes in the diversity of migration ties and the intensity of migration flows each put *upward* (versus downward) pressure on the observed increase in the total volume and rate of migration between these two periods. Additionally, as is evident by comparing the magnitudes of these effects, by a slight margin, the diversity of migration

ties was the primary component of change between these two periods. Thus, these results more strongly implicate those actors and dynamics (e.g. pioneer migrants and migration) that are expressed geographically in the diversification of migration ties.

The diversity of migration ties remained the primary component of change between the 1995–2000 and 2000–5 periods, after which time the situation reversed. Between the 2005–10 and 2010–15 periods, the intensity of migration flows was the primary component of change; however, as is evident, both the diversity of migration ties and the intensity of migration flows put *downward* pressure on observed decrease in the total volume and rate of migration between these two periods. Where this study ends and others begin is to theorize the actors and dynamics at work within the EU migration system that are responsible for declines in the diversity of migration ties and intensity of migration flows. The global economic recession is one likely starting point (Fix et al. 2009; Papademetriou et al. 2010; Abel 2015), and one possibility is that decreases in the diversity of migration ties and in the intensity of migration flows are geographic manifestations of a migration system that is experiencing and responding to a pronounced shock (Curtis et al. 2015).

5. Reflections and conclusions

In this paper, we connected two ideas that are complementary and should be understood as such going forward. The first idea is that migration systems are, like any social phenomenon, emergent entities that are actively and continually created and sustained by many and different types of actors and dynamics. The second idea is that, because migration is an inherently, though not exclusively, spatial process, migration systems are manifested in geographic structures in the form of migration networks consisting of a set of places that are connected to one another by migration flows. As recently argued by Willekens et al. (2016), these sorts of linkages are increasingly important to make explicit in migration research given the many audiences and issues involved.

It was ultimately necessary to write this paper because, while we appreciate and support recent efforts to relaunch migration systems as ‘emergent social entities’ (Bakewell 2013: 2), these efforts need not come at the expense of prior research on expressions of systems in the form of ‘identifiable geographic structures’ (Massey et al. 1998: 61), or migration networks, especially when prior research is grossly mischaracterized. This needless sowing of division runs the risk of [further] Balkanizing research on migration and migration systems precisely at a time when what is needed is integration and synthesis, multi- and inter-disciplinarity, and triangulation (Kupizewski et al. 2013; Brettell and Hollifield 2015; Donato and Gabaccia 2015; Willekens et al. 2016). In this paper, we have taken just one step in this direction by connecting some of the actors and dynamics in the above relaunch to their corresponding expressions, or components, of change in the geographic structure of migration flows. And, while our work in this paper is by no means exhaustive, it does err on the side of trying to build bridges between past and current research on migration systems.

Going forward, future research should keep in mind the following limitations and potential extensions of our work in this paper. First, as we noted at several points along the way, our efforts are focused on connecting some of the actors and dynamics in Bakewell’s (2013)

relaunch to their corresponding components of change in the geographic structure of migration flows. As such, we did not exhaust the range of potential linkages at work that might help to further elucidate the emergent nature of migration systems in data on and analyses of migration flows. For example, as shown earlier in Figure 4, future research should devote additional attention to the actors and dynamics in migration systems that generate simultaneously *negative* changes in the diversity of migration ties and the intensity of migration flows. A second limitation with our work is that we focused on the linkages from micro to macro, and not vice versa (see Coleman 1990; Hedström 2005; Schelling 2006; Entwisle 2007; Manzo 2014). Third, and finally, the empirical demonstration in this paper was simply that—a demonstration. Clearly, there are other migration flow data that might be used, as well as other methods that could be employed.

At the end of the day, we want the many and unique insights of a migration systems perspective to be applicable to many and diverse audiences, and, ultimately, to be used to understand and solve complex real-world problems (e.g. see Jennissen 2007; Abel 2013; IOM 2013; Kupizewski et al. 2013; Martin 2013; Curtis et al. 2015; DeWaard et al. 2016; Gölar and Krišj 2016; Messias et al. 2016; Hauer 2017). In our view, this necessarily involves connecting the inner workings and external expressions of migration systems (Kritz and Zlotnik 1992; Massey et al. 1998; de Haas 2010; Willekens et al. 2016). In light of recent comments by Kupizewski et al. (2013: 43) and others to the effect that migration theory, including migration systems theory, is ‘not very useful’ in some empirical and policy contexts (e.g. ‘to forecast migration dynamics’), we hope that our work in this paper will help to bridge some of these divides to inform and improve the relaunch of migration systems as a guiding light.

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References

- Abel GJ. 2013; Estimating Global Migration Flow Tables Using Place of Birth Data. *Demographic Research*. 28(18):505–46.
- Abel, GJ. Working Paper 5/2015. Vienna Institute of Demography; Vienna: 2015. Estimates of Global Bilateral Migration Flows by Gender between 1960 and 2015.
- Abel GJ, Sander N. 2014; Quantifying Global International Migration Flows. *Science*. 343(6178): 1520–22. [PubMed: 24675962]
- Ali, S, Hartmann, D. *Migration, Incorporation, and Change in an Interconnected World*. New York: Routledge; 2015.

- Arango J. 2000; Explaining Migration: A Critical View. *International Social Science Journal*. 52(165): 283–96.
- Bakewell O. 2013; Relaunching Migration Systems. *Migration Studies*. 2(3):300–18.
- Bakewell O, de Haas H, Kubal A. 2012; Migration Systems, Pioneer Migrants and the Role of Agency. *Journal of Critical Realism*. 11(4):413–37.
- Bakewell, O, Kubal, A, Pereira, S. Introduction: Feedback in Migration Processes. In: Bakewell, O, Engbersen, G, Fonseca, ML, Horst, C, editors. *Beyond Networks: Feedback in International Migration*. Basingstoke, UK: Macmillan Palgrave; 2016. 1–17.
- Bell M, et al. 2002; Cross-national Comparison of Internal Migration: Issues and Measures. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*. 165(3):435–64.
- Black R, et al. 2011; The Effect of Environmental Change on Human Migration. *Global Environmental Change*. 21S(1):S3–11.
- Bodvarsson, ÖB, Van den Berg, H. *The Economics of Immigration*. New York: Springer; 2013.
- Bonifazi, C. Evolution of Regional Patterns of International Migration in Europe. In: Bonifazi, C, Okólski, M, Schoorl, J, Simon, P, editors. *International Migration in Europe: New Trends and New Methods of Analysis*. Amsterdam: Amsterdam University Press; 2008. 107–29.
- Brettell, CB, Hollifield, JF. *Migration Theory: Talking across Disciplines*. New York: Routledge; 2015.
- Bunge M. 2004; How Does It Work? *The Search for Explanatory Mechanisms*. *Philosophy of the Social Sciences*. 34(2):182–210.
- Castles, S, de Haas, H, Miller, MJ. *The Age of Migration: International Population Movements in the Modern World*. New York and London: The Guilford Press; 2014.
- Chamlee-Wright E, Storr VH. 2009; There's No Place like New Orleans: Sense of Place and Community Recovery in the Ninth Ward after Hurricane Katrina. *Journal of Urban Affairs*. 31(5): 615–34.
- Cohen, JH. *The Culture of Migration in Southern Mexico*. Austin: University of Texas Press; 2004.
- Coleman, JS. *Foundations of Social Theory*. Cambridge, MA: Harvard University Press; 1990.
- Curtis KJ, Fussell E, DeWaard J. 2015; Recovery Migration after Hurricanes Katrina and Rita: Spatial Concentration and Intensification in the Migration System. *Demography*. 52(4):1269–93. [PubMed: 26084982]
- Czaika M, de Haas H. 2014; The Globalization of Migration: Has the World Become More Migratory? *International Migration Review*. 48(2):283–323.
- Das Gupta, P. *Standardization and Decomposition of Rates: A User's Manual*. Washington, DC: US Dept of Commerce, Economics and Statistics Administration, Bureau of the Census; 1993.
- de Haas H. 2010; The Internal Dynamics of Migration Processes: A Theoretical Inquiry. *Journal of Ethnic and Migration Studies*. 36(10):1587–617.
- Desmond M, Emirbayer M. 2009; What is Racial Domination? *Du Bois Review*. 6(2):335–55.
- DeWaard J, Curtis KJ, Fussell E. 2016; Population Recovery in New Orleans after Hurricane Katrina: Exploring the Potential Role of Stage Migration in Migration Systems. *Population and Environment*. 37(4):449–63. [PubMed: 27429504]
- DeWaard J, Curtis KJ, Fussell E, et al. 2017; Migration from New-Accession Countries and Duration Expectancy in the EU-15: 2002–2008. *European Journal of Population*. 33(1):33–53. [PubMed: 28286353]
- DeWaard J, Kim K, Raymer J. 2012; Migration Systems in Europe: Evidence from Harmonized Flow Data. *Demography*. 49(4):1307–33. [PubMed: 22791267]
- Dinnerstein, L, Reimers, DM. *The World Comes to America: Immigration to the United States since 1945*. Oxford: Oxford University Press; 2014.
- Donato, KM, Gabaccia, D. *Gender and International Migration: From the Slavery Era to the Global Age*. New York: Russell Sage; 2015.
- Durand J, Parrado EA, Massey DS. 1996; Migradollars and Development: A Reconsideration of the Mexican Case. *International Migration Review*. 30(2):423–44. [PubMed: 12291750]
- Emirbayer M, Mische A. 1998; What is Agency? *American Journal of Sociology*. 103(4):962–1023.
- Entwisle B. 2007; Putting People into Place. *Demography*. 44(4):687–703. [PubMed: 18232206]

- Favell A. 2008; The New Face of East–West Migration in Europe. *Journal of Ethnic and Migration Studies*. 34(5):701–16.
- Fawcett JT. 1989; Networks, Linkages, and Migration Systems. *International Migration Review*. 23(3): 671–80. [PubMed: 12282799]
- Fix, M, , et al. Migration and the Global Recession. Washington, DC: Migration Policy Institute; 2009.
- Fussell E, Curtis KJ, DeWaard J. 2014; Recovery Migration to the City of New Orleans after Hurricane Katrina: A Migration Systems Approach. *Population and Environment*. 35(3):305–22. [PubMed: 24729651]
- Gammeltoft-Hansen, T, Sørensen, NN. The Migration Industry and the Commercialization of International Migration. New York: Routledge; 2013.
- Gölar, D, Krišj ne, Z. Elusive Migration Systems: Shifting from Transnationalism to Transregionalism. In: Domínguez-Mujica, J, editor. *Global Change and Human Mobility*. Singapore: Springer; 2016. 25–36.
- Hauer ME. 2017; Migration Induced by Sea-level Rise Could Reshape the US Population Landscape. *Nature Climate Change*. 7:321–25.
- Hedström, P. *Dissecting the Social: On the Principles of Analytical Sociology*. Cambridge: Cambridge University Press; 2005.
- Horváth I. 2008; The Culture of Migration of Rural Romanian Youth. *Journal of Ethnic and Migration Studies*. 34(5):771–86.
- IOM. *World Migration Report 2013*. Geneva: International Organization for Migration; 2013.
- Jennissen R. 2007; Causality Chains in the International Migration Systems Approach. *Population Research and Policy Review*. 26(4):411–36.
- Kahanec, M, Zimmermann, KF. *EU Labor Markets after Post-Enlargement Migration*. Berlin: Springer; 2010.
- Kandel W, Massey DS. 2002; The Culture of Mexican Migration: A Theoretical and Empirical Analysis. *Social Forces*. 80(3):981–1004.
- Kritz, MM, Zlotnik, H. Global Interactions: Migration Systems, Processes, and Policies. In: Kritz, MM, Lim, LL, Zlotnik, H, editors. *International Migration Systems: A Global Approach*. Oxford: Clarendon Press; 1992. 1–16.
- Kupiszewski, M, Bijak, J, Kicinger, A. The Use of International Migration Theories in Migration Forecasting—A Practical Approach. In: Kupiszewski, M, editor. *International Migration and the Future of Populations and Labour in Europe*. Dordrecht: Springer; 2013. 35–56.
- Lindstrom DP, Ramírez AL. 2010; Pioneers and Followers: Migrant Selectivity and the Development of U.S. Migration Streams in Latin America. *The ANNALS of the American Academy of Political and Social Science*. 630(1):53–77. [PubMed: 24489382]
- Mabogunje AL. 1970; Systems Approach to a Theory of Rural-Urban Migration. *Geographical Analysis*. 2(1):1–18.
- Manzo, G. *Analytical Sociology: Actions and Networks*. West Sussex: Wiley-Blackwell; 2014.
- Martin P. 2013; The Global Challenge of Managing Migration. *Population Bulletin*. 68(2):2–16.
- Massey DS. 1990; The Social and Economic Origins of Immigration. *The ANNALS of the American Academy of Political and Social Science*. 510(1):60–72.
- Massey, DS, Arango, J, , et al. *Worlds in Motion: Understanding International Migration at the End of the Millennium*. Oxford: Clarendon Press; 1998.
- Massey DS, España FG. 1987; The Social Process of International Migration. *Science*. 237(4816): 733–38. [PubMed: 17751562]
- Massey DS, Espinosa KE. 1997; What's Driving Mexico-U.S. Migration: A Theoretical, Empirical, and Policy Analysis. *American Journal of Sociology*. 102(4):939–99.
- Massey DS, Zenteno RM. 1999; The Dynamics of Mass Migration. *Proceedings of the National Academy of Sciences of the United States of America*. 96(9):5328–35. [PubMed: 10220465]
- Messias, J, , et al. From Migration Corridors to Clusters: The Value of Google+ Data for Migration Studies. 2016 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM); 18–21 August; 2016.

- Mingels, G. [accessed 10 April 2017] Global Migration? Actually, The World Is Staying Home. Spiegel Online. 2016. May 17, <<http://www.spiegel.de/international/world/why-global-migration-statistics-do-not-add-up-a-1090736.html>>
- Nogle JM. 1994; The Systems Approach to International Migration: An Application of Network Analysis. *International Migration*. 32(2):329–37. [PubMed: 12346101]
- Olayo-Méndez A, Haymes SN, de Haymes MV. 2014; Mexican Migration-Corridor Hospitality. *Peace Review*. 26(2):209–17.
- Okólski, M. *European Immigrations: Trends, Structures and Policy Implications*. Amsterdam: Amsterdam University Press; 2012.
- Özden Ç, et al. 2011; Where on Earth Is Everybody? The Evolution of Global Bilateral Migration 1960–2000. *The World Bank Economic Review*. 25(1):12–56.
- Pais JF, Elliott JR. 2008; Places as Recovery Machines: Vulnerability and Neighborhood Change after Major Hurricanes. *Social Forces*. 86(4):1415–53.
- Papademetriou, DG, Sumption, M, Terrazas, A. *Migration and Immigrants Two Years after the Financial Collapse: Where Do We Stand?*. Washington, DC: Migration Policy Institute; 2010.
- Pollard, N, Latorre, M, Sriskandarajah, D. *Floodgates or Turnstiles? Post-EU Enlargement Migration Flows to (and from) the UK*. London: Institute for Public Policy Research; 2008.
- Portes A. 1998; Social Capital: Its Origins and Applications in Modern Sociology. *Annual Review of Sociology*. 24:1–24.
- Poulain, M, Perrin, N, Singleton, A. *THESIM: Towards Harmonized European Statistics on International Migration*. Louvain-la-Neuve: UCL Presses Universitaires de Louvain; 2006.
- Preston, S, Heuveline, P, Guillot, M. *Demography: Measuring and Modeling Population Processes*. Oxford: Blackwell; 2000.
- Quinn, E. *Temporary and Circular Migration: Ireland*. Dublin: European Migration Network; 2011.
- Rogers A, et al. 2002; Describing migration spatial structure. *Papers in Regional Science*. 81(1):29–48.
- Roseman CC. 1971; Migration as a Spatial and Temporal Process. *Annals of the Association of American Geographers*. 61(3):589–98.
- Sander, N, , et al. Working Paper 02/2014. Vienna Institute of Demography; Vienna: 2014. Visualising Migration Flow Data with Circular Plots.
- Schelling, TC. *Micromotives and Macrobehavior*. New York: W. W. Norton & Company; 2006.
- Sorrel, C. [accessed 10 April 2017] Most Conventional Wisdom about Refugees and Immigration Is Wrong. Fast Company. 2016. Jun 10, <<https://www.fastcompany.com/3060766/most-conventional-wisdom-about-refugees-and-immigration-is-wrong>>
- Stark O, Bloom DE. 1985; The New Economics of Labor Migration. *American Economic Review*. 75(2):173–78.
- Stockton, N. [accessed 10 April 2017] 20 Years of Global Migration—in One Chart. The Atlantic. 2014. Mar 28, <<https://www.theatlantic.com/international/archive/2014/03/20-years-of-global-migration-in-one-chart/359793/>>
- Sumata C. 2002; Migradollars and Poverty Alleviation Strategy Issues in Congo (DRC). *Review of African Political Economy*. 29(93–94):619–28.
- Taylor JE. 1999; The New Economics of Labour Migration and the Role of Remittances in the Migration Process. *International Migration*. 37(1):63–88. [PubMed: 12322077]
- Timmerman C. 2008; Marriage in a Culture of Migration: Emirdag Marrying into Flanders. *European Review*. 16(4):585–594.
- United Nations. *World Population Prospects: The 2015 Revision*. New York: United Nations Population Division; 2015.
- van Mol, C, de Valk, H. *Migration and Immigrants in Europe: A Historical and Demographic Perspective*. In: Garcés-Masareñas, B, Penninx, R, editors. *Integration Processes and Policies in Europe*, IMISCOE Research Series. New York: Springer; 2016. 31–55.
- Vertovec S. 2007; Super-Diversity and its Implications. *Ethnic and Racial Studies*. 30(6):1024–54.
- von Bertalanffy L. 1950; An Outline of General System Theory. *British Journal for the Philosophy of Science*. 1(2):134–65.

- Willekens F, et al. 2016; International Migration Under the Microscope. *Science*. 352(6288):897–99. [PubMed: 27199405]
- Zlotnik, H. Empirical Identification of International Migration Systems. In: Kritz, MM, Lim, LL, Zlotnik, H, editors. *International Migration Systems: A Global Approach*. Oxford: Clarendon Press; 1992. 19–40.

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Figure 1.

Hypothetical set of place-to-place migration flows.

Notes: Letters (A, B, C, D, E, and F) and their respective colors (red, orange, yellow, green, blue, and violet) denote places. Place-to-place migration flows are represented by cords. The color of each cord denotes the migrant-sending, or origin, place. The arrowhead at the end of each cord points to the migrant-receiving, or destination, place. The width of each cord is proportional to the intensity, or size, of the flow.

Figure 2.

Total migration flows among countries in the European Union: 1990–95 to 2010–15.

Notes: Authors' calculations using data from Abel (2015). Migration rate is per 100,000 population.

Figure 3.

Components of change in migration flows among countries in the European Union: 1990–95 to 2010–15.

Notes: Authors' calculations using data from Abel (2015). Migration rate is per 100,000 population.

Figure 4.

Effects of components of change in migration flows among countries in the European Union: 1990–95 to 2010–15.

Notes: Authors' calculations using data from Abel (2015). Migration rate is per 100,000 population.