## ALTERNATIVE VISUALIZATIONS OF QUANTITATIVE DATA ON MIGRATION

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In a situation of ever-increasing mobility… well, this is how many accounts of globalization portray the scale of international migration today. But is migration really increasing in terms of numbers? Some say it is not (Abel/Sander 2014, "Quantifying global international migration flows", p. 1521). Certainly, there is no uniform trend: in some regions, more and more people move (or are moved) across borders, while in other regions the numbers are falling (especially where they were extraordinarily high in the past). While it is of course theoretically possible to measure the total number of international migrants on a global scale, the relevance of such statement is questionable. To assume only one driving force behind them all would be implausible, and there is not one global pattern, but rather many regional ones (the South American system, the Southeast Asian system, etc.) and multilayered patterns (e.g. the routes of economic elites easily span across continents, while most refugees seek shelter in neighboring countries). Hence, what is the insight we gain from a generalizing concept such as that of an assumed "global trend"? At the same time, the conflated and sometime simplified depiction of the numbers of international migrants abounds. Let's look at four different examples of how data on international migrant stock is generally presented, along with an innovative depiction of migrant flows.

Probably the most intuitive way to present the total number of immigrants in various countries is to color in the respective country areas on a world map differently according to the numbers of immigrants there. Unfortunately, this can easily produce a grossly distorted picture, as one example shows. The World Bank website makes use of data from the United Nations Population Division publication "Trends in Total Migrant Stock", and allows the generation of the world map shown in figure 1. The template used for this map is a variation of the Mercator projection used in most of the current web mapping applications. As we all know, it heavily distorts the relative areas of land masses, with the distortion increasing toward the poles, resulting in an overall increase in the apparent land mass in the northern hemisphere and a reduction of that in the southern hemisphere (due to the relative distributions of land in those regions). Just compare Greenland with Australia: the latter is in fact 3.5 times bigger than the former, but on this map it appears to be the other way around.
But this quantitative distortion left aside, the countries colored in the darkest red this way appear to be evenly inhabited by large numbers of immigrants, which is obviously not the case.

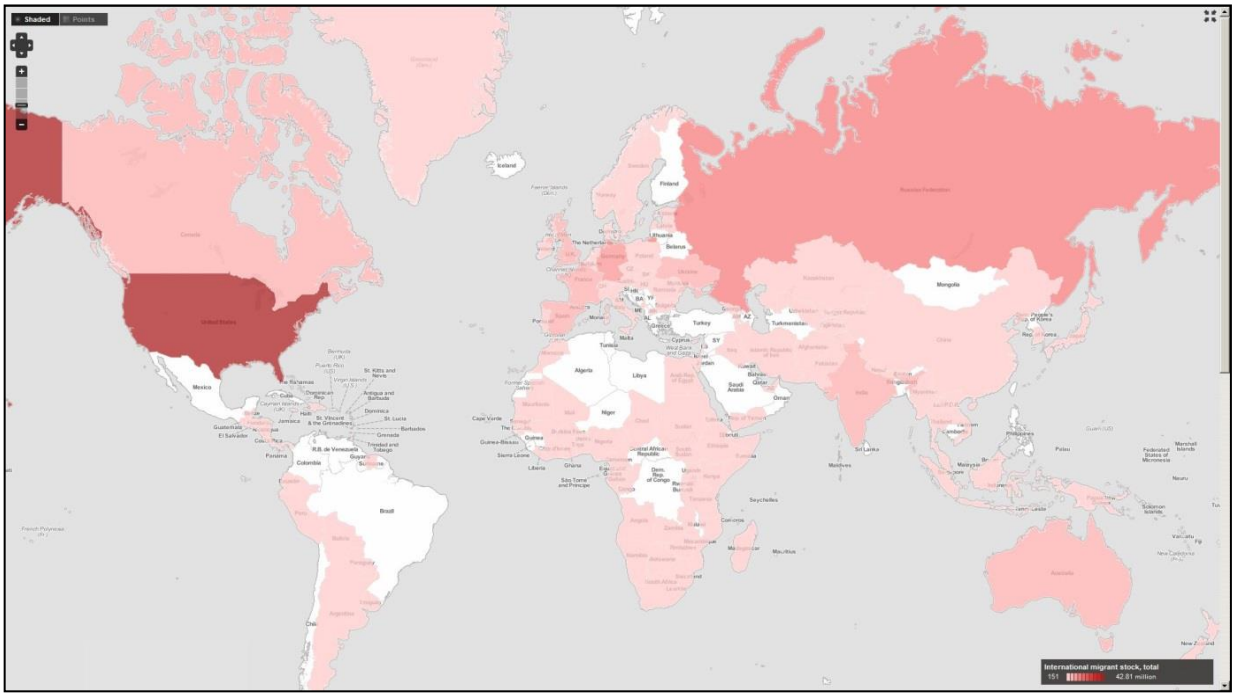


Fig. 1: The World Bank, International migrant stock (data.worldbank.org)

Who wants to move to Alaska, really? Or settle in Arkhangelsk? This flaw is inevitably caused by taking national data as the baseline, and projecting it onto the whole area of the respective states instead of breaking those states down into equal-area territorial segments (which of course is not possible because such data in most cases is unavailable, and would in turn cause further issues of applicability; see as an analogous example how GDP could be graphically related to population density).

So, perhaps it is better stick to more abstract graphics? The United Nations Population Division mentioned above provides a migration database that covers the whole globe. In their publications they frequently distinguish "North" and "South", and define "Europe and Northern America plus Australia, New Zealand and Japan" as the North, and the rest of the world as "South" ("Population Facts 2013", p.4). Well, the Russian Federation is assigned to Europe (hence, in the worldview of the Population Division, this large continent reaches from Portugal in the west to the Kamchatka Peninsula in the east), and Mexico is classified as part of the "South". But never mind. The aggregation of countries into larger units (continents; less/more developed; North/South, etc.) is always theory-driven and hence artificial to a certain degree. One example might suffice: one of the largest cross-continental and at the same time South-North migration flows is from Mexico to the US. It is somewhat convincing that these two countries are located on either side of a South-North divide (defined in economic terms) – not without reason did Acemoglu and Robinson start their book on global economic divergence at the border in Nogales. But in terms of geography and history, both countries are in North America. It is not human movement across their border that requires explanation, it is the border that has been placed across human movement there. Yet this specific migration flow has over the last decades been (and continues to be) the main contributor to South-North migration on a global scale.

Thus I find it striking how "North" and "South" are sometimes used as self-evidently meaningful categories. In the reports of the UN Population Division, we learn that most migration (36%, see figure 2) happens in and from the South – well, yes, the "South" accounts for 85% of the world's population. There is no need to comment further on such very general diagrams.

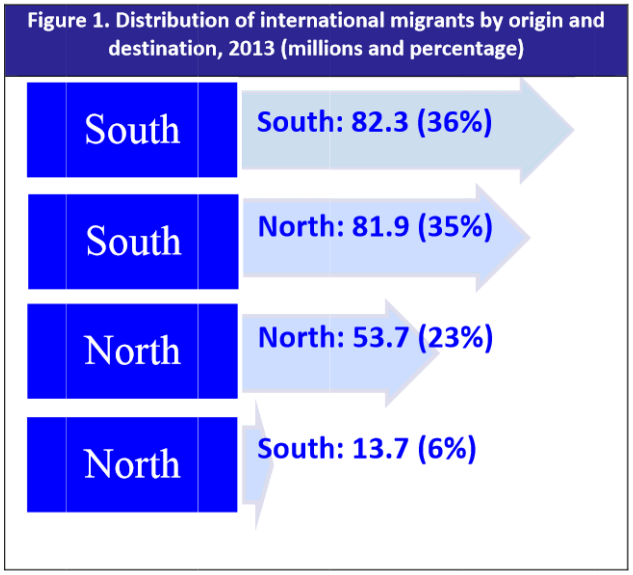


*Fig. 2: UN Population Division, "Population Facts", No. 2013/3 Rev.1, April 2014, p.1.*

It is safer to stick to geographic, hence seemingly objective, definitions of units: the continents. Accordingly, the bar chart that gives absolute numbers of immigrants for each continent is widespread (limitations as to where to draw the line between continents mentioned above apply). Among many others, Castles and Miller do this in their seminal work "The age of Migration" (see figure 3). But to provide stock

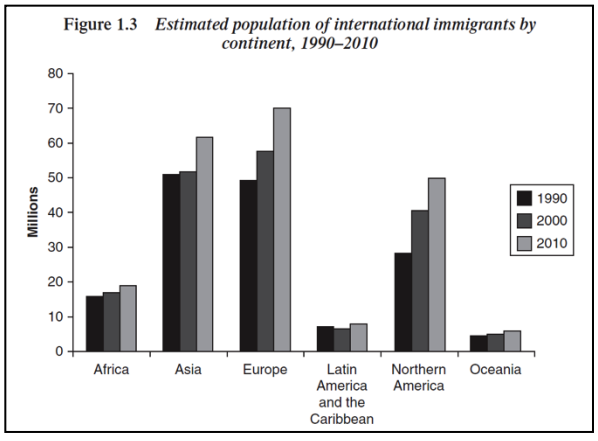

*Fig. 3: Castles and Miller (2009): The age of migration. International population movements in the modern world. 4. ed., p.9.*

data only neither accounts for percentages of immigrants in relation to the total population (just think of Saudi Arabia, a country among those with the highest proportion of foreigners in the world, which appears as a white dot on the map in fig.1), nor does it show the regions of origin of those migrants. We also know that not only immigration, but also emigration changes a society.

What is the alternative? The United Nations Population Division also offers their data on 221 countries in the world nicely assembled on one poster (see fig. 4). This presentation might be prompted by a helpless urge to try to keep track of (and "fence in"?) the broad spectrum of migration experiences, but it does not really help if one is searching for comparisons or patterns.

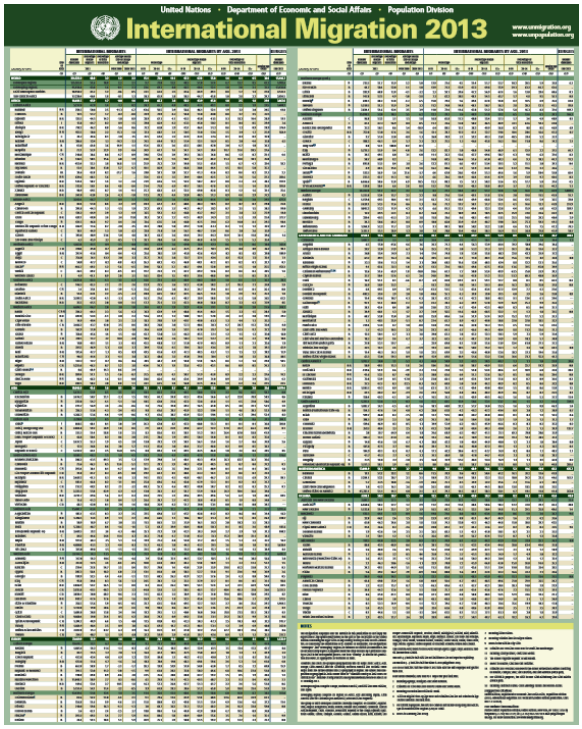


*Fig 4: UN Population Division, Migration Wallchart, 2013*

I recently came across an alternative pictorial presentation of global international migration flows; a circular plot (see fig. 5). I like it more than other diagrams I've seen so far, for two reasons. First, it does not show data on migrant stock, but rather relates to flows. Hence it covers immigration as much as emigration, and

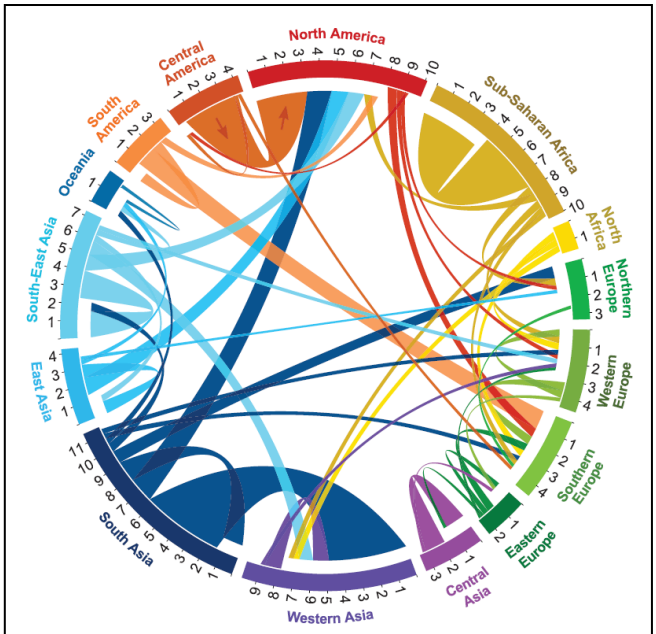


**Fig. 4. Circular plot of migration flows between and within world regions during 2005 to 2010.** Tick marks show the number of migrants (inflows and outflows) in millions. Only flows containing at least 170,000 migrants are shown.

*Fig. 5, Abel and Sander (2014): Quantifying global international migration flows. In: Science 343 (6178), p. 1522.*

accounts for the empirical connection between sending and reviewing regions. Second, the circular shape schematically represents large-scale regional proximities across the globe, and thereby allows for a visualization of relative distances. This is not perfect of course, but at least differentiates between arrows that connect segments next to each other and arrows that span the center of the image (the latter "reaching across the globe").

This quick comparison of various ways of presenting data on international migration shows at least one thing: charts give materiality to abstract data, and in so doing may reinforce a taken-for-granted world view, and at worst "confirm" old preconceptions. But if data are aggregated differently, or if the charts are constructed creatively, even if that involves going against the mainstream, they can also help to prompt us to think "off the beaten track".

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