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**Analysing the regional geography of poverty,
austerity and inequality in Europe: a human
cartographic perspective**

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Abstract: This paper presents a human cartographic approach to the analysis of the impact of austerity and the economic crisis across Europe's regions. The paper reflects on past insights and debates on the analysis and mapping of poverty and wealth and of the effects of austerity in particular. It then presents a wide range of cartograms highlighting social and spatial inequalities across Europe. Finally, the paper highlights the increasingly important role the field of Regional Studies in current debates about the future of the European project and of the possibility of a Europe of regions rather than a Europe of nation-states.

Keywords: austerity; economic crisis; poverty; inequality; European Union; cartography

INTRODUCTION

Europe is sinking into a protracted period of deepening poverty, mass unemployment, social exclusion, greater inequality, and collective despair as a result of austerity policies adopted in response to the debt and currency crisis of the past four years

(TRAINOR, 2013).

Europe is currently suffering a deep political and economic crisis following years of turmoil and austerity measures that have disproportionately and brutally hit the most disadvantaged regions and citizens across most of the continent. At the same time, there has been a revival of nationalisms and divisions in a part of the world that, a decade ago, seemed to be united in diversity and moving towards ever-closer union. Concentrated poverty and spatial inequality have long been persistent features of all European countries, with inequalities often being most stark in the most affluent cities and regions such as London. In other parts of Europe levels of inequality and poverty

have been reducing and are lower. However, the severe economic crisis and austerity measures have led, in many cases, to an enhancement of existing disparities.

This paper draws on and builds on recent and on-going work by the authors (BALLAS, DORLING and HENNIG, 2014 and forthcoming; HENNIG, BALLAS and DORLING, 2013, 2014 and 2015; HENNIG and DORLING, 2012), which considers and visualises Europe and its economy, culture, history and human and physical geography in terms of a single large land mass. In particular, this paper uses images created for a social atlas of Europe (forthcoming) using state of the art geographical information systems and new cartography techniques in order to offer an alternative way of visualising the continent and its people in a more fluid way, in many cases plotting aspects of the lives of Europeans without imposing artificial national boundaries on the patterns.

We use a human cartographic approach to illustrate the impact of austerity and the economic crisis across Europe's regions, highlighting particular areas and types of regions (SZEGÖ, 1987). First, the paper reflects on past insights and debates on the analysis and mapping of poverty and wealth and of austerities in particular. It then presents and discusses a wide range of human cartograms and maps (including unemployment, poverty as well as related themes such as educational attainment and migration) highlighting social and spatial inequalities and also illustrating that the real social divides within Europe are more often within states rather than between them. To that end the paper also argues the case for a co-ordination of urban, regional, national and European policies and the better targeting of EU spending to ameliorate the impacts of austerity and to enhance social and territorial cohesion. The EU also needs to raise funds in fairer ways than it currently does, taxing those who have the most within each EU state. Finally, the paper highlights the increasingly important

role of geographers and of the field of Regional Studies in the debates about the future of the European project and of the possibility of a Europe of cities and regions in addition to that (and possibly longer-term, instead of) of a Europe of nation-states.

REGIONAL STUDIES OF POVERTY AND WEALTH

There is a long tradition of regional studies of poverty and wealth and of uneven development between cities and regions at various levels and in different contexts. These studies can be distinguished between efforts to provide an evidence base and highlight spatial disparities in income, wealth and other socio-economic and demographic characteristics as well studies that focus on geographical divisions of labour and capital and studies that attempt to theorise, analyse and understand the mechanisms that lead to social and spatial inequalities. Such inequalities can be viewed either as a process or as an outcome of a process. As Doreen Massey put it, in her seminal paper ‘In What Sense a Regional Problem?’ published in this journal:

The word [inequality] tends to get used indiscriminately in the literature in two rather different ways. First, there is inequality in the degree of attractiveness of a particular area to the dominant form of economic activity; secondly, there is inequality in terms of various indicators of social well-being (rate of unemployment, per capita income, degree of external control of production, for example). The two are evidently not necessarily the same. In a crude sense, one is a cause and the other an effect.

(MASSEY, 1979: 234)

Examples of studies that explore causes and mechanisms include the above work (and much follow up work, such as MASSEY, 1995), as well as the seminal work of Gunnar Myrdal on cumulative causation (MYRDAL, 1957). There has been further and significant progress to that direction over the years (e.g. see AMIN and THRIFT, 1992; HUDSON, 2007; DICKEN, 2011; DORLING, 2015; KRUGMAN, 1991; DORLING and LEE, 2016; FUJITA et al, 1999; HARVEY, 2011 and 2013; MARTIN 2011; MCCANN and

SHEPPARD, 2003; PECK, 1996 & 2012; PIKE ET AL., 2007). There has also been a considerable amount of relevant work focusing on the current post-2007 crisis (HADJIMIHALIS, 2011; HADJIMIHALIS and HUDSON, 2014; MARTIN, 2011; RAE, 2011; SMITH, 2013; SMITH and SWAIN, 2010).

It is also important to recognise the long tradition of regional studies of poverty and wealth aimed at measurement and analysis of key indicators. Amongst the key proponents of such work was Peter Townsend, whose seminal book entitled *Poverty in the United Kingdom* (1979) provided a theoretical and conceptual basis for the estimation and mapping of deprivation, poverty and social exclusion and for subsequent relevant studies (e.g. see TOWNSEND, 1987; CARSTAIRS, 1995; SMITH et al., 2015), including extensions that aimed at measuring both poverty and wealth (DORLING et al., 2007). There has also been considerable work aimed at providing estimates of income, wealth and other related socio-economic indicators at regional and local levels using a wide range of methods including statistical approaches (BRAMLEY AND SMART, 1996; HAMMNETT, 1997; HAMNETT AND CROSS, 1997), labour market accounts (BAILEY AND TUROK, 2000), the development of regional peripherality indexes (COPUS, 1999) and spatial microsimulation (BALLAS et al., 2007). There are also many examples of regional studies that present and use evidence to map and analyse the impact of the current post-2007 crisis (e.g. see BEATTY and FOTHERGILL, 2011; DRUDY and COLLINS, 2011; KITSON et al., 2011; GLASMEIER and LEE-CHUVALA, 2011; MONASTIRIOTIS, 2011).

Another important aspect that relates to the second type of studies described above is that of mapping and visualisation. Again, there has been considerable progress in the development and application of mapping methods for the visualisation of social structure and social and spatial inequalities across cities and regions (e.g. see

BALLAS et al., 2012; DORLING, 1995 and 2012; DORLING and THOMAS, 2004; HENNIG and CALZADA, 2015; THOMAS and DORLING, 2016).

Despite some exceptions, most of the regional studies of poverty and wealth tend to focus on geographical data and patterns within countries and regions rather than exploring potential inter-regional linkages and patterns between regions from different countries. Amongst the notable exceptions has been the work of organisations such as the European Commission (EUROPEAN COMMISSION, 2015) that aimed at systematically considering all regions of the European Union in one set of analysis and mapping (also see ANNONI and DIJKSTRA, 2013; BALLAS et al., 2012).

A HUMAN CARTOGRAPHIC APPROACH TO MAPPING A EUROPE OF REGIONS

...we must *re-create the European family in a regional structure*, called, it may be, the United States of Europe

(Winston Churchill, 19 September 1946 The Churchill Society, 1946; our emphasis)

The idea of a *Europe of Regions* and of a European People instead of a Europe of nation-states has long been at the heart of the thinking and efforts that have gradually led to the creation of the European Union. We need to engage with this idea from a human cartographic and human geography perspective with a focus on regional inequalities in poverty and wealth. In particular, now is the time to suggest a new approach to visualizing and analysing regional geographies of poverty, austerity and inequality in Europe. The work presented here has many antecedents but draws especially on an ongoing mapping project of European countries, cities and regions project (BALLAS, DORLING and HENNIG, 2014 and forthcoming) which aims to highlight the notion of Europe as a single entity by looking at its physical and population geography simultaneously in new ways, using up-to-date statistics, state of

the art Geographical Information Systems (GIS) and novel human cartography techniques.

People are used to conventional maps of their regions and countries. Conventional maps appear on television in the weather reports showing geographical regions as they appear from space. However, looking at a city, region or country from space is not the best way to see human geography. Often details within urban areas with large populations but small area size are virtually invisible to the viewer. It has long been argued, admittedly initially by a relatively small group of scholars, that there is a need for human-scaled visualisations to address these issues (DORLING and FAIRBAIRN, 1997; DORLING, 2007; DORLING and THOMAS, 2004; BALLAS and DORLING, 2011; HENNIG, 2013).

The mapping approach adopted here involves the redrawing of geographical regions on the basis that the area of each should be proportional to the number of people who live in each small neighbourhood, rather than land mass. Such maps are known as cartograms (TOBLER, 2004) and it can be argued that they are also part of recent trends in geography that see a revival and further advancement of (digital) spatial analysis and visualisation techniques in the set of methods used in the discipline (TURNER, 2006). This kind of visualisation differs from traditional maps and rebalances the emphasis on treating all experiences as equally important rather than greatly highlighting what occurs in the most sparsely populated rural regions (RITTSCHOF et al., 1996). In particular, the cartographic technique we used applies the density-equalising approach proposed by two physicists, Michael Gastner and Mark Newman. Using the diffusion of gas analogy in physics, they developed a cartogram approach that moved the borders of territories with the 'flow' of people, until density is equal everywhere (GASTNER and NEWMAN, 2004).

The population cartogram technique is a more appropriate way to visualise geographical data in the social sciences if you are interested in mapping people rather than land, especially if you do not wish to concentrate on over-emphasizing empty land in the map image. What the technique does is to iteratively alter the original map so that areas of high density expand and areas of low density shrink in such a way that eventually all areas are of, say, equal population density, in which case an equal population cartogram is created. The algorithm behind the technique achieves this using a method that is minimally distorting and which attempts to stay conformal at all points. A conformal map projection is one in which angles are preserved locally. The technique is an approximation so as not to produce results that are too hard to interpret. Thus, areas with a value of zero shrink but do not disappear entirely, and countries should still be generally recognisable from their shape and position even after their size is changed. This method has been used extensively for the mapping of countries using state-level data (DORLING, 2006; DORLING et al., 2008; GASTNER et al., 2005; WEBB, 2006), but as yet there are relatively limited applications for mapping at regional and sub-regional levels.

The maps presented in this paper are created with a method that takes the approach outlined above a step further and is more suitable for the mapping of cities and regions. In particular, the maps were created using the gridded-population cartogram approach (developed by one of the authors of this paper - see HENNIG, 2013). Its creation builds on the same density-equalising approach described above, but it is implemented in order to create a gridded-population cartogram, meaning that the underlying projection onto which the map has been transformed is one where people are equally distributed on a grid stretched so that each grid cell has an area proportional to the population within that cell. In particular, this involves dividing the

whole territory to be mapped into a grid of cells of equal size and estimating the population distribution accordingly. The next step is to apply the density equalizing method to resize each cell proportionally to the number of people living within it. This process results in a contiguous gridded-population cartogram, meaning that each new grid cell has an area proportional to the number of people that live there, but still touches only its original eight neighbouring cells. The size of each of the grid cells therefore reflects the number of people living in this area; the projection means that the base map itself reflects the real population distribution on a coherent geographical reference (and not the population based on artificial administrative units like nation states). Figure 1 illustrates how the method works with a hypothetical example of four areas (HENNIG, 2015). The sizes of the areas (and borders) are changed until the space between the people in each area is the same everywhere (and therefore the population density in all areas is the same). The cartogram is created by ‘diffusing’ the people, it does this to produce a final visualization with an even spatial spread of population. As people diffuse, borders are moved with them until all spatial units have equal population density.

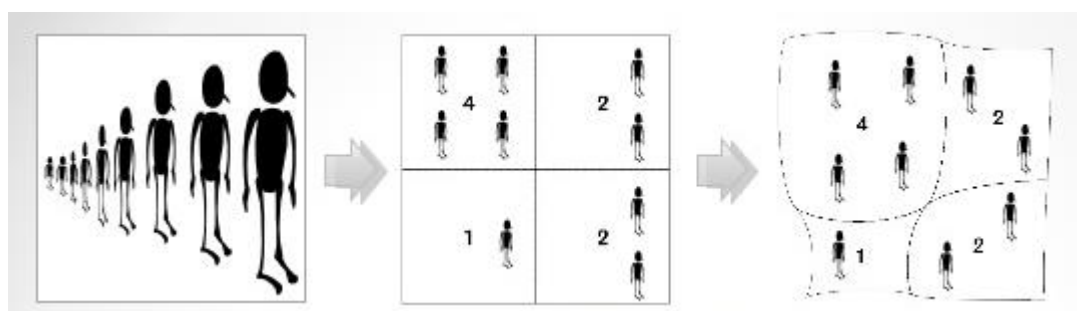


Figure 1: An illustration of applying the Gastner and Newman diffusion-based method for creating gridded population cartograms (after HENNIG, 2013).

As noted above, the approach we adopt aims to highlight the notion of Europe as a single entity by looking at its physical and population geography simultaneously in new ways. To that end we have included all states that have demonstrated a

commitment to a common European future by being closely associated with the EU, either as current members or as official candidate states (or official potential candidates for EU accession) and/or states which are signed up to any of the following agreements: European Economic Area, the Schengen Zone, the European Monetary Union. Figure 2 shows a gridded population cartogram of these European countries using a rainbow colour scale to determine the colour hue for each state according to the year of association with the European Union and also signposting some of the major city regions (with the capital cities underlined). This figure is the result of the application of the method described in Figure 1 in order to redraw the spatial extent of each geographical area on the basis of fine-level spatial information about where people live rather than land mass. The map highlights clearly where most people are concentrated – in many cases in cities, but also giving the more rural populations especially in Eastern Europe a fair representation. For instance, Madrid, Paris, Istanbul and London are huge, while the whole of Scandinavia is small. Countries and regions that are more densely populated (for example most of the UK, Italy, Poland, and Romania) are more visible on the map whereas the large rural areas in the north of Europe appear considerably smaller. The Rhine-Ruhr metropolitan region in Western Europe, including stretching from Cologne in the west to Dortmund as its eastern edge and other urban areas that appear to be expanding towards the Netherlands, is much more prominent on this projection than it is on a conventional map.

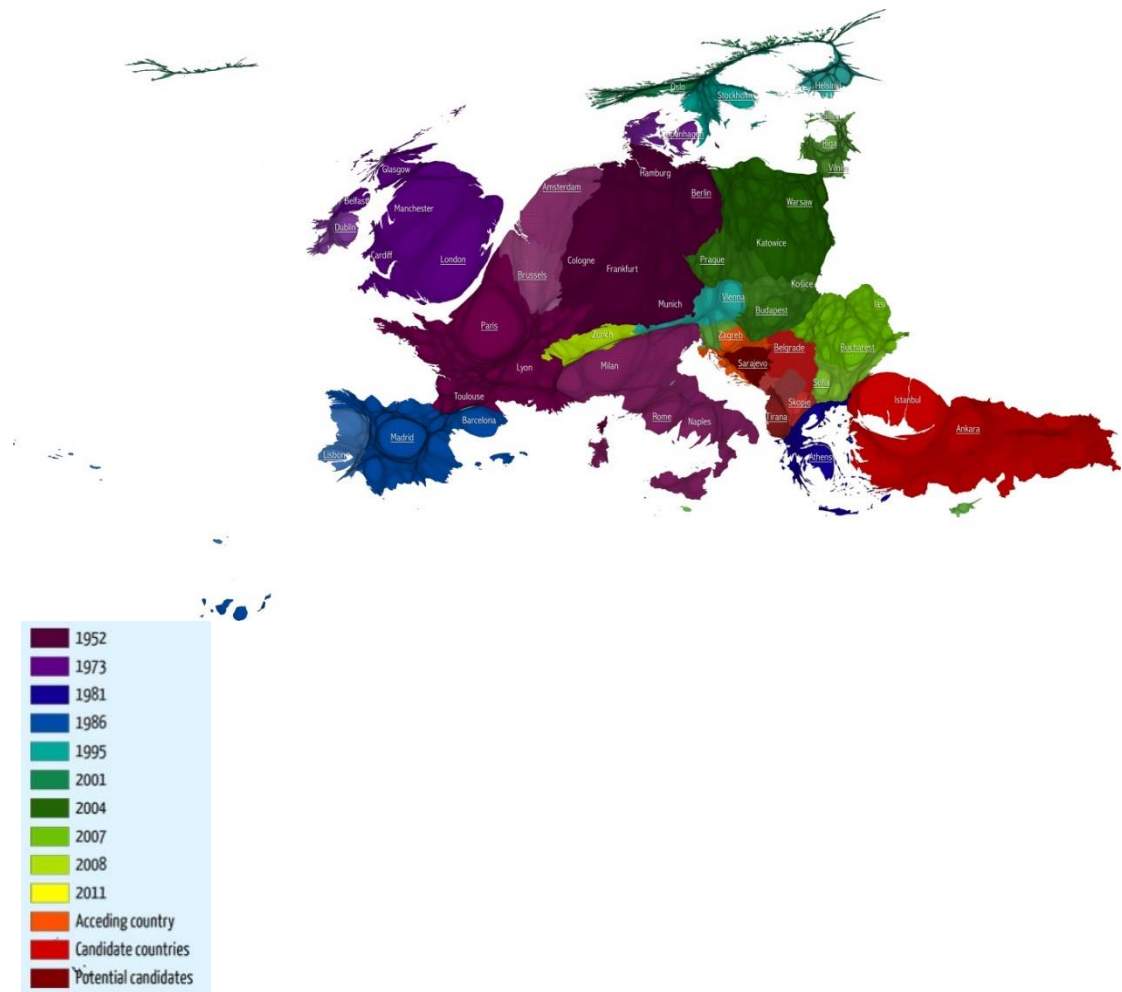


Figure 2: A gridded-population cartogram of Europe

The mapping approach illustrated here offers a new way of thinking about Europe as a continent of regions and cities rather than nation states and to realise the huge number of ways in which people living in different parts of Europe have so much in common. Our mapping approach shows Europe as a land mass, stretching from Iceland to Turkey. The resulting cartograms produced by this approach matter because they show key features of the actual experience of the people living in Europe, equitably. To understand these maps it may help to imagine that they are the product of a satellite hovering in stationary orbit over the continent but containing a special lens which magnifies the areas where people live, and minimises the wilderness just to the precise extent needed to give everyone equal representation. It is

also a satellite with a camera that can detect far more than simply physical properties such as vegetation, heat and moisture.

MAPPING AND ANALYSING REGIONAL GEOGRAPHIES OF POVERTY, AUSTERITY AND INEQUALITY IN EUROPE

Five years ago it would have been unimaginable; so many millions of Europeans lining up for food in soup kitchens, receiving food parcels at home or being referred to social groceries ... Former middle class citizens living in trailers, tents, railway stations or in shelters for the homeless, hesitating to go to the Red Cross, Red Crescent and other organizations to ask for help.

(INTERNATIONAL FEDERATION OF RED CROSS AND RED CRESCENT SOCIETIES, 2013, p 9)

Europe is one of the most affluent and prosperous places in the world. However, there are significant social and spatial inequalities in the distribution of its income and wealth. In this section we present a regional approach to highlight the geographical dimension of poverty and wealth in Europe. We map a selection of variables pertaining to the regional geographies of poverty, austerity and inequality. In particular, we present and discuss eight cartograms on inter-related themes ranging from regional Gross Domestic Product to disposable income, unemployment and education attainment, highlighting social and spatial inequalities and also illustrating that the real social divides within Europe are more often within states rather than between them. We also reveal distinct geographical patterns in order to argue the case for a co-ordination of urban, regional, national and European policies and EU spending to ameliorate the impacts of austerity and to enhance social and territorial cohesion.

Before we consider the impact of austerity and recession across Europe it is useful to highlight the most and least affluent regions of Europe by using a traditional measure such as the Gross Domestic Product. We begin by using the latest data from Eurostat on Gross Domestic Product by region, with each region being compared to the European Union average in order to paint the current picture of the geography of

wealth and purchasing power in Europe. The map shown in Figure 3 is drawn with small areas resized in proportion of the population living within them (using the method explained in the previous section; also see Figure 2 for city labels). The total Gross Domestic Product per capita by region is then used to colour and classify areas as ‘rich’ (coloured in deep blue), ‘average’ (in colour shades of light blue and green, ranging from slightly above average to below average) and ‘poor’ (coloured in yellow). In this map it is becoming evident that some of the most affluent city regions (such as London) have more in common with other wealthy regions across Europe than the rest of the country and this relates to the discussion of some of the conditions that are widely accepted as pre-requisites for a successful monetary union (MARTIN, 2001).

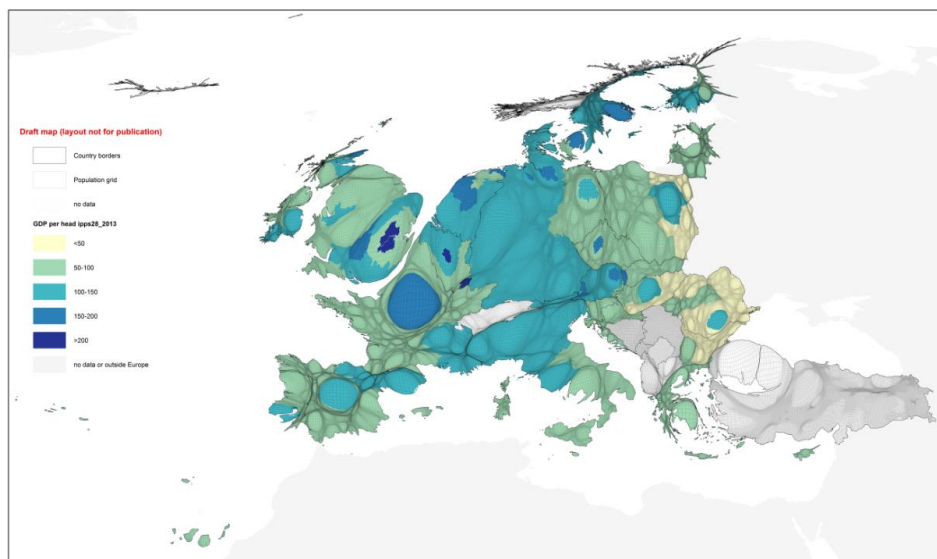


Figure 3: Gross domestic product (% of the EU-28 average, EU-28 = 100) in Purchasing Power Standards (PPS) per inhabitant, 2013. Data from Eurostat.

The values mapped show GDP per capita in Purchasing Power Standards (PPS) in relation to the European Union (EU28) average set to equal 100. If the index of a region is higher than 100 then this region’s level of GDP per head is higher than the EU average and vice versa. The map reveals an east-west divide (and to some

extent a North-South divide) across Europe. But there are also considerable disparities within countries. It should be noted that if regional data for the western Balkan countries and Turkey had been available, then the regions within them would almost certainly have also been at the bottom of this league. It is also interesting to note the disparity in the GDP of Madrid compared to most of the rest of Spain and that of Rome and Milan at the possible expense of Naples and much of the rest of Italy. Paris takes even more in comparison to almost all of the rest of France. However, it is the city region of London which is by far the most affluent with a GDP per capita more than three times the EU average (index 325 compared to EU28 = 100), followed by the city regions of Luxembourg (index of 257.7), Brussels (207.2), Hamburg (207.2) and Groningen (187.2). If we revisit the discussions about monetary union prerequisites, London has much more in common with these other regions from an economic similarity point of view. In addition, there are high rates of geographical mobility to these regions (not just of capital but also labour).

Looking at the least affluent areas in Europe, the city region of *Severozapaden* in northwest Bulgaria is the poorest in Europe (with an index of 30.1) together with most other regions in the country as well as in neighbouring Romania but also in Hungary and Poland.

We can next turn our attention to the change in economic circumstances as a result of the financial crisis and austerity of the past years. Figure 4 shows the impact of the financial crisis and recession on regional GDP. In the three years following the worldwide financial crash of 2008 more than half of all these regions experienced a decrease in GDP as measured per inhabitant. This is when GDP is measured in constant local currencies adjusted for actual purchasing value to control for inflation. A very large number of these regions were in the south of Europe, but they can also

be seen in the periphery of some central and northern European countries. In great contrast to those areas, there were 22 regions experiencing an increase of more than 2% in their GDP per capita. Of these, 13 are in Poland, seven in Germany (mostly in the east) and the remaining two are the French island region of *Corsica* and the Slovakian capital city region of *Bratislava*. These increases in incomes are not due to repatriated earnings from migrant workers as those are included in Gross National income (GNI) calculations, but not in GDP. There was a very small economic boom in the far east of Europe during this period. Paris and much of France also fared well. Unfortunately, there were no reliable statistics available for Turkey and many of the Baltic states that would allow for these regions to be considered in this analysis.

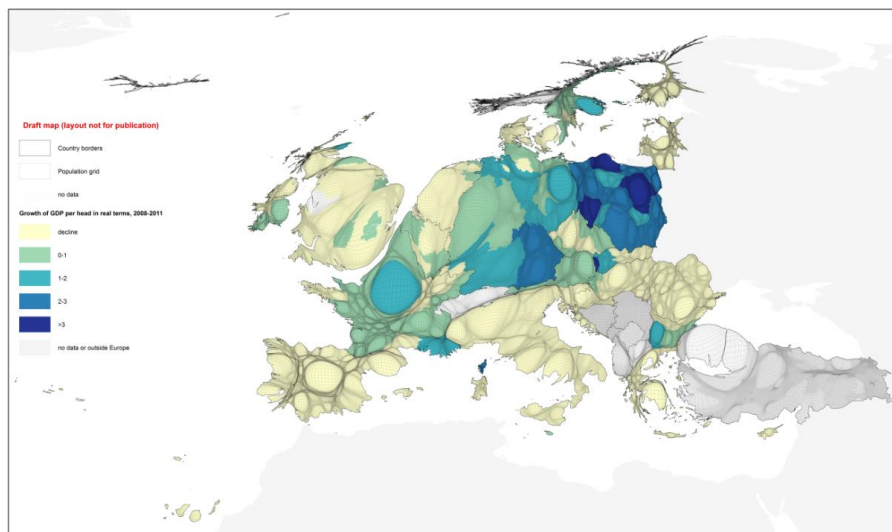


Figure 4: Change in gross domestic product (GDP) per inhabitant, 2008–11

The next map in Figure 5 shows the regional distribution of net annual household disposable income. This is income after tax from all sources, including paid employment, property rental income, as well as welfare benefits in cash, but it does not include social transfers that are made in kind rather than cash such as the provision of universal health care or free education, whether these are provided by the

state or non-profit institutions. Most of the regions with very high average household income are found in Germany, especially in the west of Germany, and in France, Austria, northern Italy and a small slither of the south of England and now the very centre of London. On the other hand, the regions in the lowest household income category – where households survive on below 10,000 Euros per year on arithmetic average are all in Eastern Europe and in particular in Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Poland, Romania and Slovakia. It should be noted that, as it was the case with the regional maps of Gross Domestic Product, there were no data for regions of Turkey and Western Balkan countries that have some of the poorest regions in Europe. It is even more important to note that these are arithmetic mean averages. Most households will be living on less than these amounts in all regions (as shown in the following maps) and very many where income inequalities are the highest in Europe, such as in Southern England. Most people are not well off in richer regions.

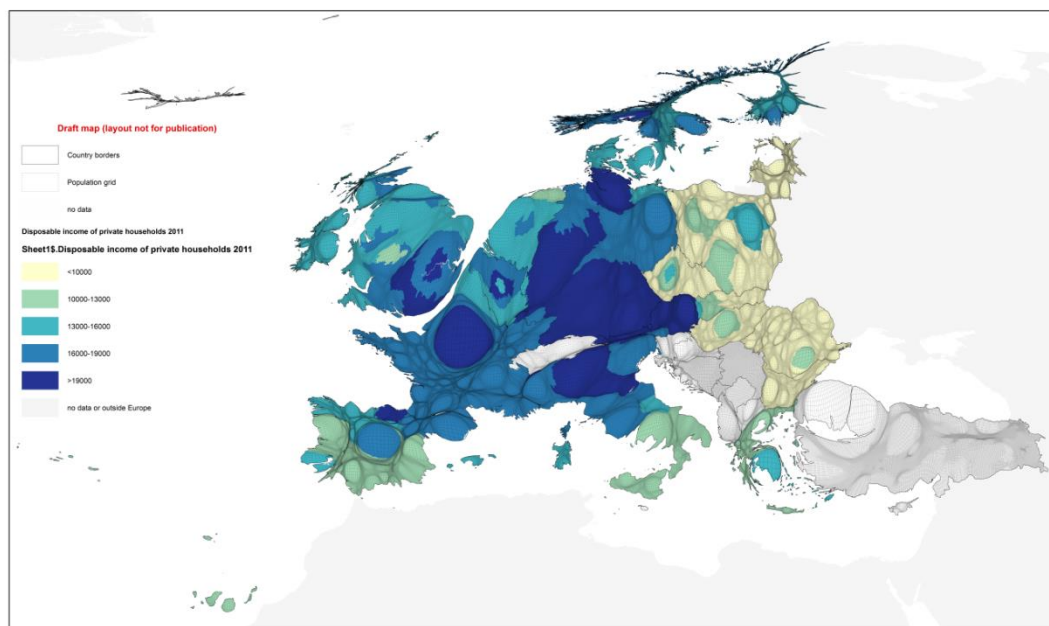


Figure 5: Household disposable income 2011.

The next map in Figure 6 should be explored together with that shown in Figure 5. Here we show changes in household incomes, following the beginning of the financial crisis and recession in Europe in 2007-08 through to 2011 which is the most recent consistent regional data available in 2016. The largest falls in income are seen in Greece. The highest decline in income recorded across the whole of Europe during these four years was in the Athens capital city region of *Attiki*. However very considerable falls in average income were also experienced in some regions of Italy, Spain, the United Kingdom. The falls in the UK included London where bankers' bonuses were cut for a few years in the very centre. There were also less considerable, but still great average falls in Ireland, Latvia and the Netherlands. At the other extreme, there were some considerable increases in household income with the highest in the *Aland* island region of Finland, followed the capital city regions of Poland, Finland and the Bulgarian region of *Yugoiztochen* which includes the historic city of *Burgas* in the Black Sea. Overall, most of the regions where average household incomes increased are generally found in Central and Eastern Europe.

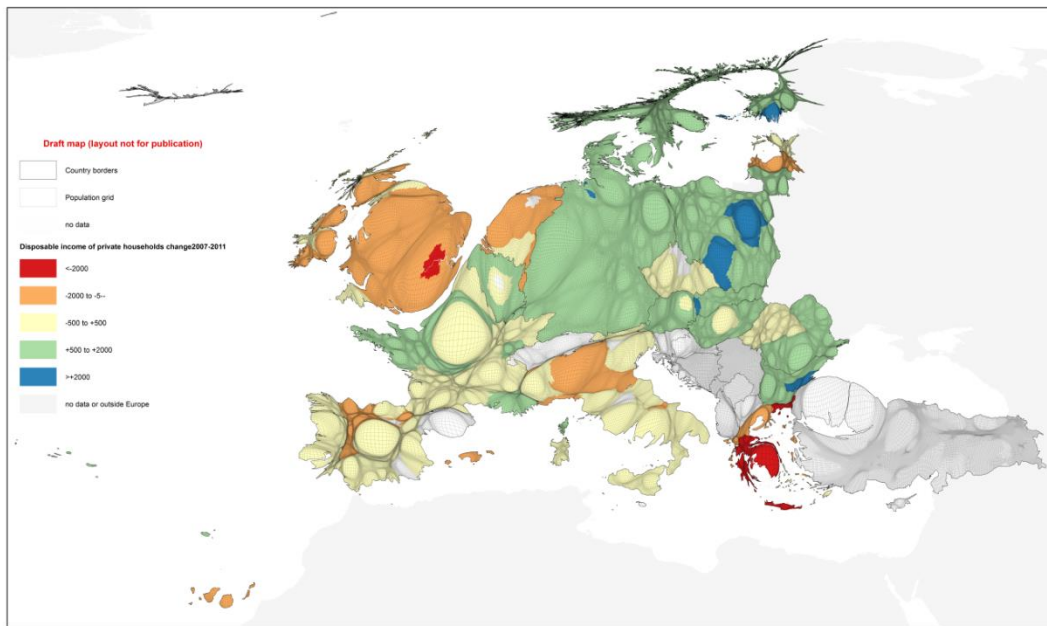


Figure 6: Change in household disposable income 2007-2011.

The next map in Figure 7 shows the regional distribution of Europeans who are in poverty or are considered to be at risk of poverty. These are persons who live in a household with an equivalised (to control for household size) disposable income below the risk-of-poverty threshold, set at 60% of the national median equivalised disposable income (after social transfers). The map shown in Figure 4 is drawn with small areas resized in proportion of the population living within them and then shaded to show the numbers of people across European regions who live on an income that is less than that of the 60% of the national median. High rates of poverty have been a persistent stark feature of the most affluent cities within the most economically unequal and regions of Europe. The most characteristic example is the city region of London which has a very high poverty rate (32%) and at the same time, as seen in Figure 3, is by far the most affluent region in Europe. Similarly, the city region of Brussels which is the third most affluent in Europe also has a very high poverty rate (33.7%). Nevertheless, it is also interesting to note that other large European capitals

such as Berlin, Paris, Madrid and Rome do not tolerate such extreme poverty. However, the severe economic crisis and austerity measures have led in many cases to an enhancement of poverty in Southern and Eastern Europe. There are 40 European regions that have extremely high poverty rates (of over 25% of their populations being poor) and all these are shaded in deep blue, as well as Turkey, which is mapped as a single region here due to the lack of data for smaller areas within Turkey. These 40 regions are mostly in Southern and Eastern Europe and in particular in Bulgaria, Greece (all Greek regions except the capital city region of Athens), Southern Italy and Spain (including the Canary Islands).

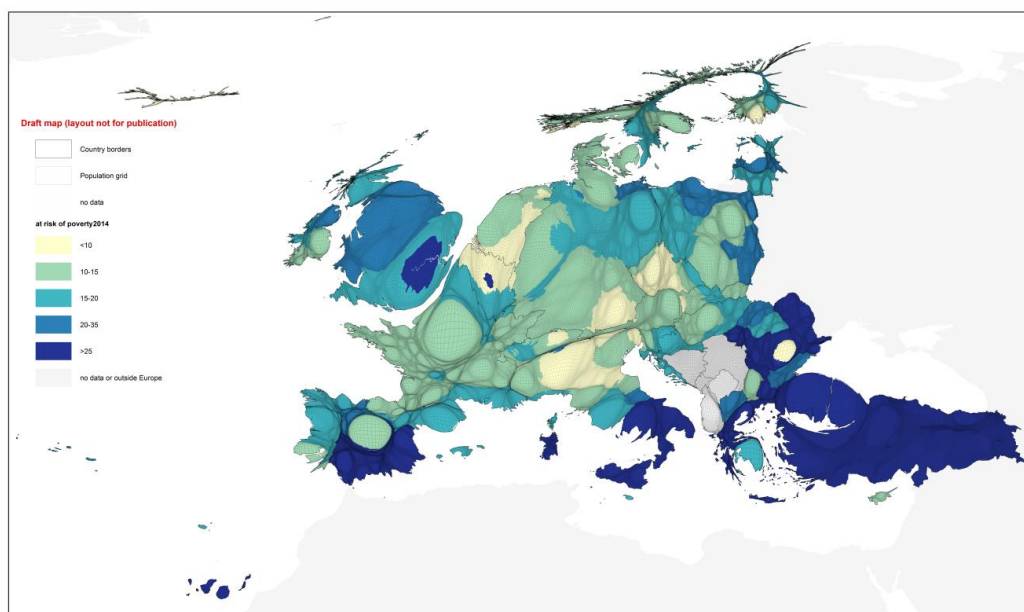


Figure 7: At risk of poverty, 2014 (data from Eurostat)

Amongst the key determinants of poverty are low-pay, social exclusion and unemployment. Following the economic crisis of 2008, some countries and regions of Europe have been sinking into a protracted period of mass unemployment reminiscent of pre-world-war-two. The unemployment rate in the European Union rose from 7% in 2008 to 11% in 2013, by when there was an estimated total of 32 million unemployed people. Of these, an estimated 7 million were aged 15-24. The overall

youth unemployment rate in the entire European Union by 2013 was 25.8% with very little signs of this improving recently. However, there are huge variations between countries and regions as well as within regions and cities, with the highest unemployment rates mostly found in austerity-stricken Greece, Italy and Spain. The next two maps give an impression of these geographical disparities in work and in having no work, showing how much a few areas have suffered while others have seen very little rise in unemployment at all since 2008. Even in the countries and regions where unemployment was reduced, this was (in several cases) the result of punitive policies that involved imposing financial sanctions on the poorest.

Figure 8 depicts the geographical distribution of unemployment rates for the most recent year for which data were available at regional level. The highest unemployment rates are mostly found in the austerity-stricken regions of Greece, Italy and Spain. The Spanish region of Andalusia has the highest unemployment rate in Europe (34.8%). In addition, there were a total of 30 regions with unemployment rates of over 20%. These include all of the 13 Greek regions as well as 13 regions in Spain and four in Italy. In contrast, the lowest observed regional unemployment rate in Europe in 2014 was 2.5% and is observed in two regions: the capital city region of Prague in the Czech Republic and the German region of Upper Bavaria (which includes the city of Munich). It is interesting to note that the city region of London is not included in these regions (Inner and Outer London had unemployment rates of 7.4% and 6.6% respectively).

Overall, the regions with very low unemployment rates in that year (less than 5%) were mostly found in Central and Northern Europe and in particular, Germany, Austria, Switzerland, the Scandinavian countries, but also in Romania and the United Kingdom. It is also worth noting that unemployment is now often highest in areas

where more women have moved away compared with the number of men who have emigrated from those areas. The detailed regional map shown in Figure 8 also suggests that unemployment rates are lower in major cities than the areas around them, as people are drawn into the cities for work and cannot afford to live there if they do not have work in most, but not all, cases. Rates are also a little higher in places where benefits are less punitive and where sanctions are not applied to force people to take work they would rather not do because it is often dangerous, dirty, undignified and very lowly paid. In particular, regional unemployment rates in some countries and regions were reduced by the application of punitive policies that involved imposing financial sanctions on the poorest. For example, in Britain there were 1,046,398 sanctions applied to people claiming jobseeker's allowance in 2012, encouraging people to take any job on offer or declare that they were self-employed (ADLER, 2016; BEATTY et al., 2015; WEBSTER, 2015).

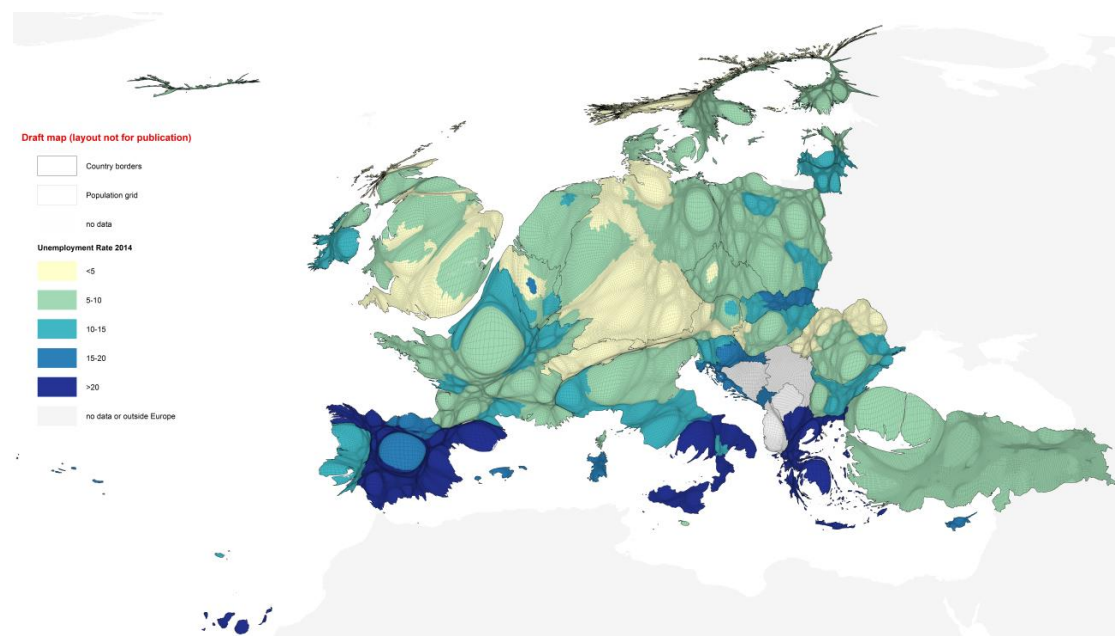


Figure 8: Unemployment rate, 2014 (data from Eurostat)

The next map considers change in unemployment rates during a period of severe recession and austerity affecting many parts of Europe. The map shown in

Figure 9 shows the geographical distribution of changes in unemployment rates across European regions between 2008-2014. This rate is a proportion of everyone who is available for work, including those who are working. The regions with the highest increases (over 10%) are all in the south of Europe, in countries very badly hit by the economic crisis. In particular, these regions include most of Spain, all of Greece and Cyprus, the region of *Calabria* in Southern Italy and the Portuguese island region of the Azores. On the other hand, there have been 83 regions across Europe where the unemployment rate in 2014 was lower than that of 2008. Most of these regions are in Germany and Turkey, but also in Eastern Europe and the United Kingdom. Nevertheless, as noted above, unemployment rates fell in many parts of the UK because in recent years up to a million people a year have been ‘sanctioned’ if they do not take any job and so many take what are called zero-hours jobs (which can involve no work in particular weeks) or pretend they are self-employed while receiving hand-outs from relatives.

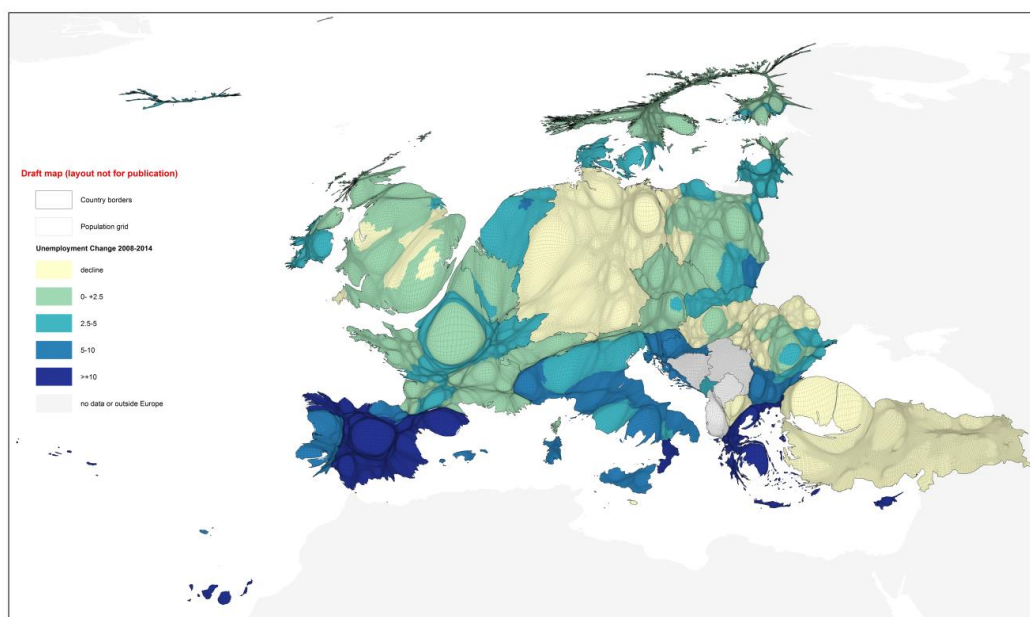


Figure 9: Unemployment rates by region: change between 2008-2014 (data from Eurostat).

One of the ways by which the impacts and recession and austerity could be offset is by promoting equity in education and training. It is also often argued that persisting education inequalities enforce and compound income and wealth inequalities between regions. In addition, many of the regions and countries that have been affected by severe recession, especially in southern Europe have also been suffering from brain drain towards richer and booming regions in the north of Europe, contributing to the widening of the gap and an enhancement of inter-regional disparities and divides.

There has long been significant public investment by European governments in expanding education at all levels and in widening participation. However, the opportunities for (and benefits from) learning are far from equally distributed across the continent. In particular, there are social and spatial inequalities in access to high quality learning opportunities at all levels and in all places (BALLAS et al., 2012). The chances of attending to University remain socially and spatially divided and in some countries like the United Kingdom these disparities have been exacerbating with the introduction of significantly high levels of tuition fees and the perseverance of private schooling. Geographical inequalities have also been increasing Europe-wide as a result of the migration of highly qualified Europeans from the regions hit the hardest by the economic crisis moving towards regions with lower unemployment, mostly in Northern and Western Europe. Nevertheless, the investments in higher education made by more Eastern and Southern countries in the past decades (and which have contributed to their high overall levels of government debt) are now benefiting Europe as a whole via the migration of these highly skilled groups of individuals (BALLAS, 2014).

The next map and the discussion of the spatial patterns it reveals illustrates these points. Figure 10 shows the geographical distribution of the population aged 25-64 years with tertiary education attainment found across each European region (as a percentage of all people aged 25-64) based on the latest Eurostat data, which is for 2014. Here the effect of student migration is removed as the vast majority of people in this age group will have completed their studies and moved on from where they studied. Looking at the geographical patterns of university graduates, we can see that there is a stark contrast between northern and southern city regions (with some exceptions). In particular, the highest percentages (over 40%) of individuals holding a higher education degree as a percentage of all people aged 25-64 years are mostly found in the most affluent regions of the United Kingdom, Belgium, Switzerland, Spain, France, the Netherlands the Scandinavian countries, but also in Cyprus and the Czech capital city region of Prague.

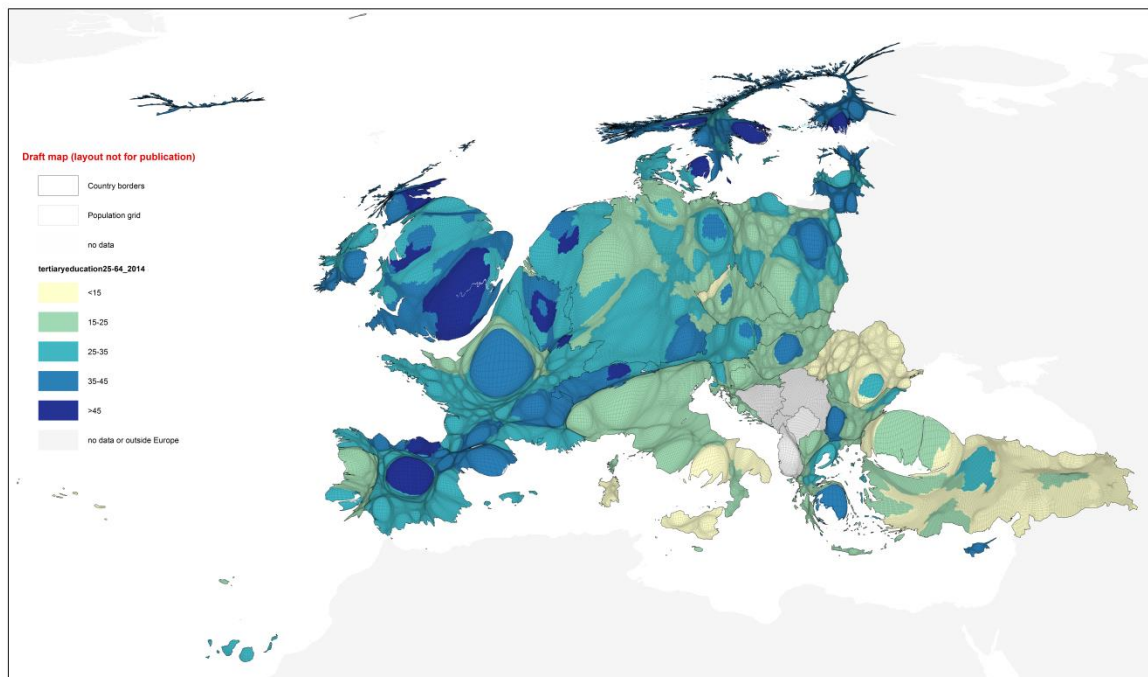


Figure 10: Population aged 25-64 years with tertiary education attainment, 2014

Very wealthy and economically successful regions attract more than their share of highly skilled and educated workers. As a result they then have more diverse and highly educated populations, a large proportion of which moved there from the rest of Europe and the world. It should also be noted that young people from more affluent areas are more likely to participate in education for longer and achieve higher qualifications. The areas with the lowest rates (less than 10%) are found in Turkey, Romania and Italy, but also include *Severozapad* in the historical region of Bohemia of the Czech Republic. It should also be noted that the city region of London achieves rates as high as shown in this map not by educating its own population to this level but because it is a net beneficiary of graduate in-migration.

In contrast, regions of Southern of Eastern Europe tend to have lower rates because graduates more often migrate away from these areas. In particular, it is worth noting that many of the regions with relatively higher numbers of University graduates are in countries heavily affected by recession and austerity, such as Greece and Spain. In particular, it is interesting to note that highly qualified professionals in the regions hit the hardest by the recession and massive government cuts have been migrating over the past five years to regions with lower unemployment (BARNATO, 2012), mostly into the north and in countries like Germany. It can be argued that such movements of population help some regions and countries to overcome their skill shortages. However, these movements can also be seen as a brain-drain for the originating regions (ANASTASIADOU, 2016; KATSIKAS, 2013; LABRIANIDIS and VOGIATZIS, 2013) with further negative economic and social implications. In any case, it is very important to point out that the cost of educating highly qualified professionals (including health professionals who have also been at the centre of attention in relation to the brain drain debate; see PINTO DA COSTA et al,

2015; BALLAS, 2014) was typically not covered by the receiving country, but rather by the tax-payers of those sending countries, like Greece, Italy, Spain and Portugal, which made huge investments in their higher education systems in past decades. In particular, the investments in higher education (including in medical schools) made by these countries in the past decades (and which have contributed to their high overall levels of government debt) are now benefiting the European Union as a whole via the migration of highly skilled groups of individuals.

Overall, the maps presented and discussed above reveal that the real differences in the quality of life and the types of challenges and problems faced by Europe's populations are not found across national borders but between regions, villages and cities or between rich and poor quarters of a town. And the rich quarters of Europe are all more similar to each other than to the poorer areas that are nearer to them.

CONCLUSIONS AND DIRECTIONS FOR FURTHER RESEARCH

Europe is a thought that needs to become a feeling. When Americans talk about their United States, they get all misty eyed, they get emotional. Hell, when the Irish talk about the United States, we get misty eyed. Do we think that way about Europe? And if not why not?

Bono, addressing delegates at the European People's Party Congress in Dublin, on the 7th of March, 2014 (RTE, 2014).

This paper offers a human cartographic approach to conceptualising Europe as one place and of mapping its regional geography to that end, with a particular focus on themes that are timely and relevant to current debates about the need for pan-European solidarity as a pre-requisite for pan-European policy responses to offset and reverse the impact of austerity in regions that suffered the most. It can be argued that our visualising and mapping Europe in the ways shown here makes it easier for Europeans not only to make more sense of their home area's physical and human

geography but also to think of Europe as a single human entity – the place they belong to or their ‘homeland’ (rather than so often thinking of that being their nation state). The boundaries defining nation states are, after all, often not much more than the (often frequently changing) historic boundaries of the realms of royal houses with particular religious affiliations that became fossilised at particular moments in time. Natural and man-made disasters, from the Chernobyl radiation cloud through to the global economic crisis and the current refugee crisis, show (or try as hard as they can to show) no regard for state borders.

Of particular relevance to the title of this paper is the argument that the adoption of the mapping approach presented here may make it more likely for people to care about an environmental disaster or social unrest or hardship affecting others elsewhere in Europe: in other words, to feel solidarity with other people and places and to enhance a sense of common identity and, as Bono put it in the speech cited above, for Europe to become more of a ‘feeling’; for Europeans to get ‘misty eyed’, when talking about Europe, for then to be ‘feeling united not just by bonds of interest, but by bonds of affection’ – that will take more change and greater understanding than we have now. To that end there is a need to contribute to the discussions and understanding of European identity, building on relevant work in geography and regional studies and thinking (BORRAS-ALOMAR et al., 1994; PREVELAKIS, 2016; RODRIGUEZ-POSE, 2002) and relevant work by sociologists (KOHLI, 2000) with a particular focus on issues of ‘European Identity in Times of Crisis’ (KOHLI et al., 2012).

The maps presented in this paper show how Europe and its diverse and newly arriving people can be seen as one entity, moving towards a European people, united in diversity. At the same time, they highlight very important and sometimes extreme

social and spatial disparities, including many economic inequalities which call for socially and environmentally sustainable action. It is worth noting that there have been considerable efforts expended recently to put in place and implement cohesion policies at the European level aimed at correcting imbalances and ameliorating geographical inequalities. Examples of such policies include the European Social Fund, the European Regional Development Fund and the Cohesion Fund. But are these enough? Do we need more and better policies of this kind? Is there a need for more European top-down policies, or more devolved powers to regions and local communities? No one knows for sure, but many people fear that divides in Europe may soon begin to widen again if we do not cooperate better in future.

In addition, the themes mapped and discussed in this chapter can be used to inform debates about the role that geographers and Regional Studies researchers can play in contributing to and informing as well as shaping debates about the possible revival of the idea of full employment, better employment and social progress as a key European goal, freedom and ideal.

The maps presented in this paper were drawn and written by three European geographers whose first languages are Greek, English and German respectively. We hope that the work presented within these pages will do more to enhance feelings of social cohesion and solidarity amongst the people of Europe than those alternative images that might be used to foster division. We have tried to achieve this by highlighting important disparities and inequalities and, at the same time, reminding Europeans how much they have in common and the potential of what can be achieved if they move away from 'nation-state mentalities' of the past and work better together towards a socio-economically and environmentally sustainable common European future.

The real social divides within Europe are more often within states rather than between them. Those divides are not products of being part of Europe. Europe contains some very steep local social and economic divisions but it is also home to almost all of the most economically most equitable regions and countries in the world, the countries with some of the best health care, the best educational outcomes and schools, the best housing quality and services, so many innovative scientists, the most productive of workforces and the most enlightened of societies in terms of respecting and enhancing human rights. This is a continent full of diversity but it is only a small proportion of the world's land area and population, and its share of global population is rapidly shrinking.

It can be argued that in order for any European policies aimed at offsetting or reversing the impacts of austerity across European regions there is a need for the people of Europe to provide adequate political support. In other words, there is a need, apart from the political and economic argument to enhance the feelings of social cohesion and solidarity amongst the people of Europe. The work presented in this paper could be used to achieve this by highlighting important disparities and inequalities and, at the same time, reminding Europeans how much we have in common, and the potential for what can be achieved if we move away from a 'nation state mentality', thinking instead about Europe as a continent of cities rather than states, a continent of people rather than power and one of hope rather than decline, and highlighting that there is now, more than ever, a need to carry on working together rather than pulling apart (BALLAS, DORLING and HENNIG, forthcoming).

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