

Well-being in the Paris region: widening regional disparities despite overall improvement

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Has the socio-spatial divide widened over the past 10 years in the Paris region? Using an original method inspired by the work of Amartya Sen to measure the distribution of well-being in the Paris region between 1999 and 2006, Lise Bourdeau-Lepage and Élisabeth Tovar come to a rather pessimistic conclusion: the general rise in well-being actually masks widening regional disparities and setbacks in the northern suburbs of Paris, which are increasingly disadvantaged.

In recent years, the Paris region has been beset by recurrent urban riots. In the winter of 2005, after nationwide suburban riots made the international headlines for several weeks, the government even declared a state of emergency in some northern suburbs of Paris (e.g. Clichy-sous-Bois, Villiers-le-Bel). Urban unrest, particularly in the Paris region, is a cornerstone of the French public debate. A shared opinion is that its roots can be linked to the increasing social disparities between neighbourhoods, i.e. the existence and consolidation of a socio-spatial rift that is believed to divide the very heart of the Paris region.

Thinking about cities as socially differentiated human ecosystems is not a new idea. As early as 1844, Engels raised the question of London's "slums", and in the 1920s the sociologists of the Chicago School were already studying the concentration of disadvantaged populations in certain segments of metropolitan areas. Nowadays, in a context of growing social insecurity, people are increasingly aware of the impact of their residential localization on their well-being and their opportunities in terms of education, employment and accessibility. Space is becoming an issue for social cohesion, and socio-spatial disparities are believed to threaten the nation's ability to fulfil its mission of maintaining social cohesion. But is this sense of widening socio-spatial disparities in well-being grounded in fact, or is it merely a shared misconception?

A new approach to well-being based on capabilities and location

Our approach differs from analyses of segregation that focus on the interactions and differential localization of social classes or groups in an urban area. On the basis of normative theoretical elements that draw on theories of justice (and, in particular, on Amartya Sen's capability approach), we have constructed a spatialized and multi-dimensional capabilities-based measure of well-being.¹

First, taking *adaptive preferences* into account is fundamental in the presence of marked social differences. Following a *reality principle*, people adapt their preferences to what they think they can obtain: people living in an unfavourable social environment are likely to be less demanding in terms of preferences and goals. Therefore, a *subjective* assessment of well-being is a way to avoid overestimating the happiness of the less well-off relative to their objective situation as in the standard utility-based approach to economics. The fact that the socio-economic environment influences the formation of one's preferences resonates with the geographically anchored nature of

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human existence (Sack 2007; Soja 2010). The capability approach avoids this pitfall by endorsing a definition of well-being that is at least partially objective.

Furthermore, contrary to utilitarian well-being, capabilities-based well-being is *multi-dimensional*. Three key elements of well-being are established by Sen (1985b): effective realizations (*Rel*), capabilities (*Cap*) and freedom of choice (*Cho*). These elements are to be measured using an informational basis that relies on one's "functionings", i.e. all the things that one can *be* or *do* (be well housed, earn sufficient income, be educated, etc.). "Effective realizations" refers to actually achieved functionings, based on what one is or does in reality. In addition, Sen stresses the importance of taking into account one's "capabilities" defined as the matrix of potentially available functionings that shapes the complete set of one's potential existences. Lastly, "choice" refers to the degree of individual control over one's choices within the capability matrix.

Giving an actual operational measurement to a capabilist well-being is necessarily partial in view of the depth and intricacies of its theoretical definition (for a discussion of these methodological difficulties, see Robeyns 2000; Alkire 2008; Chiappero-Martinetti 2006; Comim 2001). In the case of the Paris region, the limited availability of geo-localized data for the 1,300 municipalities and *arrondissements* (i.e. the 20 city districts in Paris proper)² further narrows the choice of indicators and the scale of measurement.

One measure of well-being in the Paris region

We selected a limited number of criteria to reflect each of the three dimensions of spatialized capabilities-based well-being (Table 1³). Based on these functionings indicators, we then built a multi-dimensional index of well-being (PNUD 1990; Betti *et al.* 2008) to measure spatialized capabilities-based well-being.

2 In a related field of study, that of socio-spatial segregation, the scale of assessment has been the subject of heated controversy (Maurin 2004; Préteceille 2006). We have opted here for measurement at municipal level.

3 For a more in-depth presentation of the methods by which these indicators are constructed, see Tovar (2008 and 2010).

Table 1: Functionings specifications chosen to assess a spatialized, capabilities-based well-being

Three dimensions of capabilities-based well-being	Functionings	Statistical indicators
Cap Capabilities, “well-being as freedom”	Cap1 Getting a good education	Average educational level of population (adjusted for age structure)*
	Cap2 Being integrated into a diverse social environment	“Workday” social diversity: Gini indicator of socioprofessional categories of those who work in the municipality*
		“Nighttime” social diversity: Gini indicator of socioprofessional categories of those who live in the municipality*
Cap3 Having at least minimal means of mobility	Indicator of quality of mobility (average of the proportion of the population having a private vehicle and an indicator equal to 1 if the municipality has a public rail stop (metro, suburban rail, tramway) and 0 otherwise ⁺⁺)	
Cho Choice	Cho1 Not being discriminated against	Whether municipality contains a designated urban policy priority zone (urban renewal zone, etc.) [£]
	Cho2 Having ways to influence public decision-making	Proportion of population having the right to vote*
Rel Experienced existence, effective realizations	Rel1 Having a decent income	Average income per taxable household [#]
	Rel2 Having decent housing	Average number of persons per room*
		Proportion of population in housing units with private sanitary facilities*
		Proportion of population occupying a single-family dwelling*
	Rel3 Being well integrated into the job market	Indicator of job stability among residents of the municipality*
Rel4 Being located near services	Indicator of access to total set of providers of everyday services within 20 minutes ^{\$\$}	

Sources: # DGI [National Tax Office]. * 2006 census (by INSEE [National Institute of Statistics and Economic Studies]). § Connaissance Locale de l'Appareil Productif [Local Knowledge of Productive System] (INSEE). \$ Matrices des temps de déplacement de commune à commune en transports en commun à l'heure de pointe [matrices of rush-hour travel times for inter-municipality journeys] (DREIF). ++ SNCF [French National Rail] and RATP [Paris public transport operator]. £ Secrétariat d'État au Logement et à l'Urbanisme [Junior Minister's Office of Housing and Urban Planning].

NB: Green-highlighted indicators have a spatial dimension.

Some of these indicators call for a few words of explanation (for more details, see Bourdeau-Lepage and Tovar 2011). In the Realizations (aspirations and effective realizations) dimension (*Rel*), we gauge the proportion of the population living in a house. In doing so, we take into account the longing for nature which has haunted the collective subconscious ever since the massive rural exodus of the 1950s and 1960s, and that finds expression in the desire to live in a detached house with a garden (Bailly and Bourdeau-Lepage 2011).

In the Capabilities dimension of well-being (*Cap*), we seek to find functionings that can be used as a proxy for the extent and quality of the options available to the individual. Having a good education (*Cap1*) enables one to achieve higher effective realizations and also enhances one's

ability to adapt to circumstances. Likewise, the social diversity of a given municipality (*Cap2*) reflects the fact that, like education, being confronted with social diversity mitigates the constraints imposed by the environment on the adaptation of individual preferences and broadens the range of possibilities perceived by the individual.

In the Choice dimension of well-being (*Cho*), belonging to a stigmatized area (*Cho1*) reflects the fact that populations in certain municipalities may be discriminated against on the educational, housing or job markets (Petit *et al.* 2011). The indicator used is grounded in the idea that municipal policy priorities may reflect the visibility of difficulties besetting certain neighbourhoods or municipalities.

As well-being improves in the Paris region, the socio-spatial divide widens

In the Paris region, it can be seen that spatialized capabilist well-being grew by 45% between 1999 and 2006. Another good piece of news is that, over the same period, disadvantaged municipalities and *arrondissements* tended to catch up with the more privileged ones: on average, the lower a municipality's well-being level in 1999, the greater its relative variance between 1999 and 2006.⁴ These two results suggest that the social division between the populations of the Paris region's municipalities has been narrowing, which seems to belie the mounting concern over the perceived crumbling of the region's social cohesion.

However, it does not mean that the *socio-spatial* division has disappeared – far from it. In fact, a socio-spatial sorting process exists and has been heavily accentuated (the Moran coefficient measuring the spatial auto-correlation of well-being levels increased by 66% from 1999 to 2006⁵): municipalities whose populations have similar levels of well-being tended to be geographically closer in 2006 than in 1999.

For a better understanding of the geographical contours of this socio-spatial differentiation, the LISA (local indicator of spatial auto-correlation, Anselin 1995) index is used. LISA provides information on the (statistically significant) spatial clustering of similar or dissimilar well-being values for each spatial unit. Five types of municipalities can be identified on that basis in 1999 as in 2006:⁶

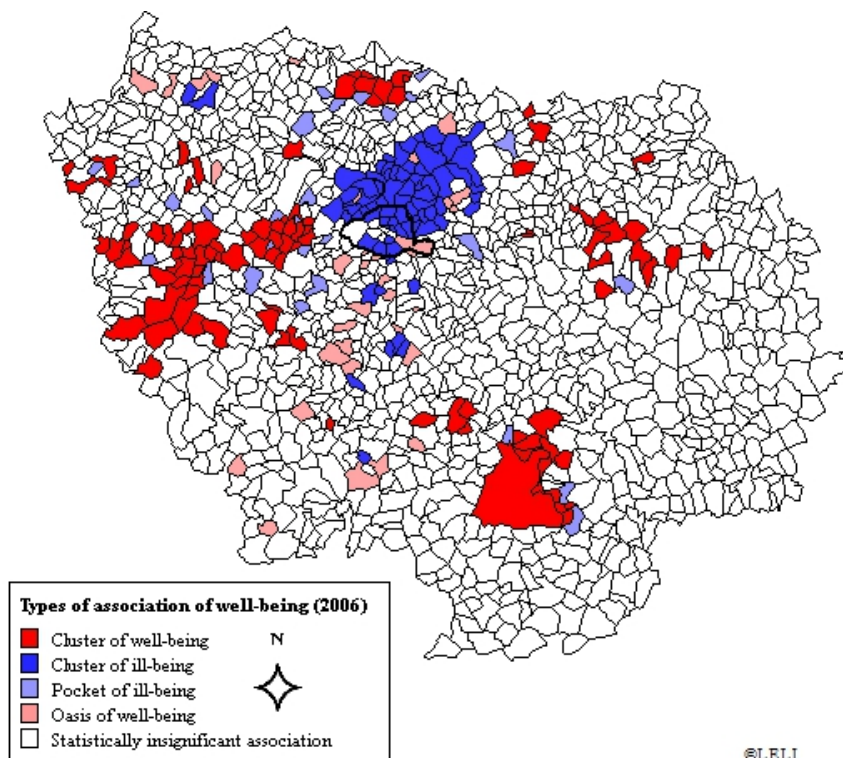
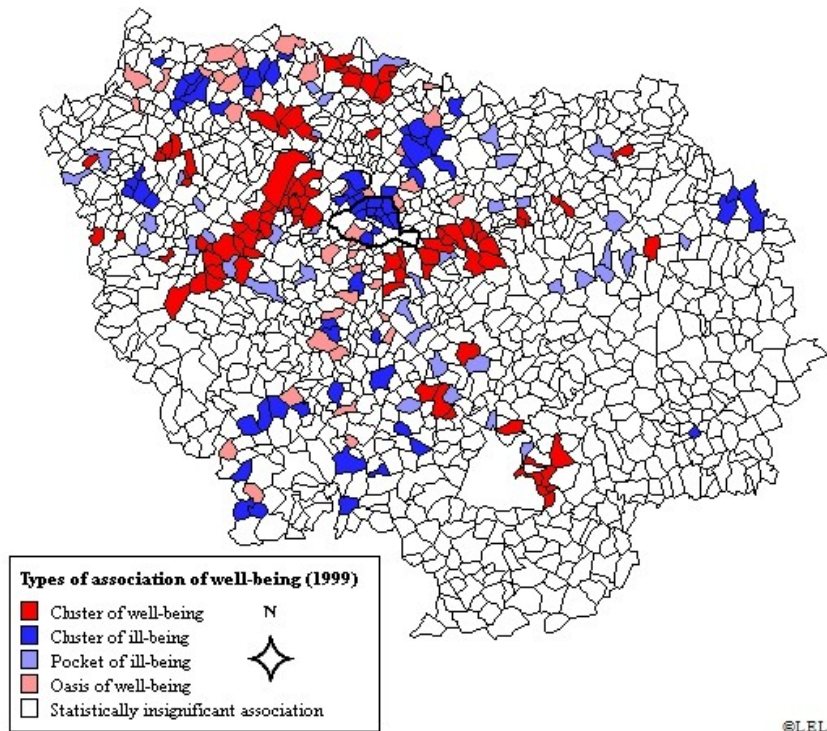
- Clusters of ill-being: disadvantaged municipalities surrounded by other disadvantaged municipalities.
- Clusters of well-being: affluent municipalities surrounded by affluent municipalities.
- Pockets of ill-being: disadvantaged municipalities surrounded by affluent municipalities.
- Oases of well-being: affluent municipalities surrounded by disadvantaged municipalities.
- Others: spatial association is statistically insignificant (at 10%).

4 Spearman's rank correlation coefficient between initial well-being level and relative variance equals -0.577, for a statistical significance level of 5%.

5 Moran's I varied from 0.1486 in 1999 to 0.2466 in 2006 (at 1%). Moran's I can be interpreted as the ratio of the covariance between observations contiguous to the total observed variance of the sample. The interpretation of the Moran index rests on the comparison of the value I with its expected value $E[I] = -(n-1) \cdot I$ (here, $E[I] \approx -0.0080$) under the null hypothesis of absence of spatial auto-correlation. When $I > E[I]$ (or, conversely, $I < E[I]$), the values taken on by the poverty levels of spatial units are not randomly arranged in the space of the areas under consideration, but are close for two neighbouring (distant) spatial units. The geographically close spatial units are also statistically close (distant), from which we infer the presence of a positive (negative) spatial auto-correlation. When I is significantly close to $E[I]$, we infer the absence of any spatial auto-correlation: no significant link can be established between the statistical proximity and the geographic proximity of the spatial units (Aubry 2000). We used the GeoDa software for spatial data analysis (Anselin *et al.* 2006).

6 LISA (local indicators of spatial auto-correlation) statistics (Anselin 1995) are used to specify these groupings. Given the sensitivity of LISA measurement to the definition of neighbourhood (here, a Queen-type matrix of neighbourhood to one degree of contiguity), the results presented in this section should be interpreted as giving an indication of the localization in the area under consideration of "clumps" of municipalities characterized by one type of spatial association or another with their neighbours; it is more problematic to use them in nominally identifying municipalities that show one type of spatial association or another.

Maps 1a and 1b: Distribution of types of association of well-being levels



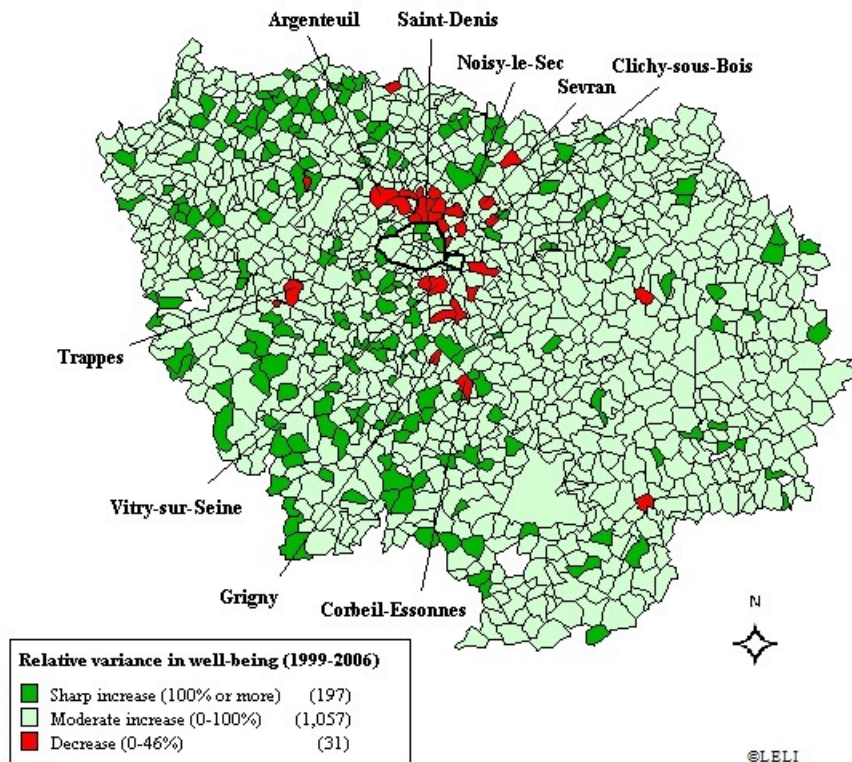
In 1999, as in 2006, the polarization of well- and ill-being only affected a minority of municipalities.⁷ Nonetheless, the cluster of ill-being (in royal blue on maps 1a and 1b) expanded considerably during that period to include in 2006 all the municipalities between (and including) Roissy and the northern *arrondissements* of Paris itself. On the other hand, the clusters of ill-being

⁷ For the vast majority of municipalities and *arrondissements* in the Paris region, the spatial association of well-being is not significant in 1999 or in 2006 (municipalities shown in white on maps 1a and 1b). Most of the region of Paris is made up of large zones in which the levels of well-being of the resident populations (i) are fairly close to the average for the Paris region, and (ii) do not show any significant statistical difference from one another.

tended to disappear along the outer ring of Paris suburbs. During this period, clusters of well-being situated along the outer ring expanded, while those of the inner ring shrank (in Hauts-de-Seine) or disappeared (in Val-de-Marne). In a word, we are seeing strong socio-spatial polarization of areas of well-being and ill-being in the Paris region.

Also, the relative changes in well-being between 1999 and 2006 were not randomly distributed across the Paris region. On the contrary, the municipalities whose populations endured similar well-being trends tend to be close to one another.⁸ Moreover, some of the municipalities that suffered a striking diminution in their well-being during the period in question (in red on map 2) were part of the highly disadvantaged zone in 1999.

Map 2: Spatial distribution of relative variance in well-being 1999–2006



Conclusion: The heart of the Paris region is adrift

The Paris region showed marked inequalities in the distribution of well-being levels in 1999 as well as in 2006. Furthermore, the 1999 cluster of ill-being has expanded and the border between the most prosperous municipalities and the least prosperous has grown thinner. Worse still, at the very heart of the region, an enclave in the northern suburbs of Paris seems to have veered away from the general trend, that of an overall improvement of well-being in the resident populations of the Paris region. In all likelihood, these factors help explain the heightened consciousness of the socio-spatial division in public perceptions. At a time when public policy-makers are trying, via the Grand Paris project, to take up the tools of good metropolitan governance, this brings the issue of regional solidarity back into the focus of public debate.

⁸ The Moran coefficient of relative variance of well-being is equal to 0.1468 (at 1%).

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