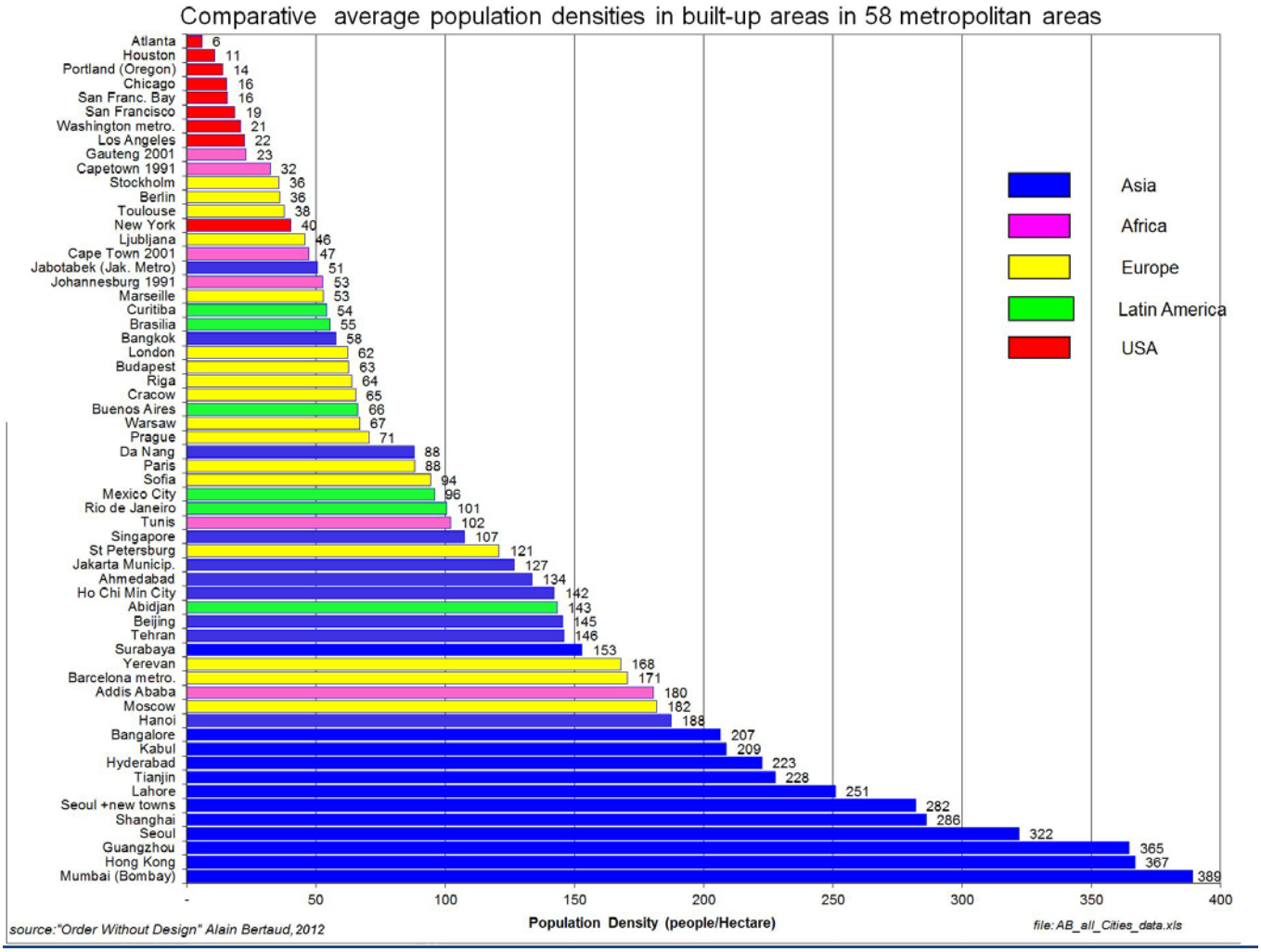
http://alainbertaud.com/



Source: the data above has been collected during my work as an adviser to municipalities, hence the bias toward cities of Asia, North America, and Europe, where I did most of my professional work.

Methodology: The densities presented here have all been calculated in the same systematic manner. They were obtained dividing census population (in majority 1990 census) by built-up area. The built up area was defined by every area built, including adjacent streets and roads and parks and open space smaller than 4 hectares. Parks and contiguous open space larger than 4 hectares, bodies of water, and airports were not included in the built up area. The limits of the built-up area was obtained from land use maps, when accurate ones could be found, more often from aerial photography or satellite imagery.

The population of the built-up area was obtained by intersecting census tracts with the built-up area within each tract then dividing tract population by the built-up area within the tract. In some cases, the limits of the built up area were contained within the municipal administrative boundaries, in most cases they were not. In these cases, the density corresponds to the metropolitan area including several local authorities (for instance New York includes few counties of New Jersey and Long Island). In the case of Jakarta, Seoul and San Francisco I have provided two

figures corresponding to two different urban perimeters: Jakarta municipality and Jabotabek metropolitan area, Seoul Municipality and Seoul including the 5 new satellites towns, San Francisco metropolitan area and San Francisco including San Jose.

The geographical limit used to measure densities is always arbitrary. Because the density in the great majority of cities follows a negatively sloped gradient from the center, the farther is the limit selected the lower would be the built-up density. Comparing densities over time without providing the map of the geographical limit used to calculate densities is therefore meaningless.

Interpretation: Densities appears to be cultural, hence the clustering along continents. Densities are not correlated to income: Singapore, Hong Kong and Seoul have much higher income than many cities with much lower densities. Densities are not related to climate either, nor to economic systems: cities of Europe have similar densities whether they were part of the socialist experiment or not. Densities are of course the product of market forces, but market forces reflect consumer choices, hence culture.

For these reasons, there is no optimum density; when cultures evolve, it is likely that densities will also slowly change reflecting the cultural shift. The wide range of densities found in the above list includes some extremely well managed cities and some dysfunctional ones. No correlation could be made between quality of urban management and densities. This shows that we have no evidence of unmanageable densities, or "good" or "bad" densities.