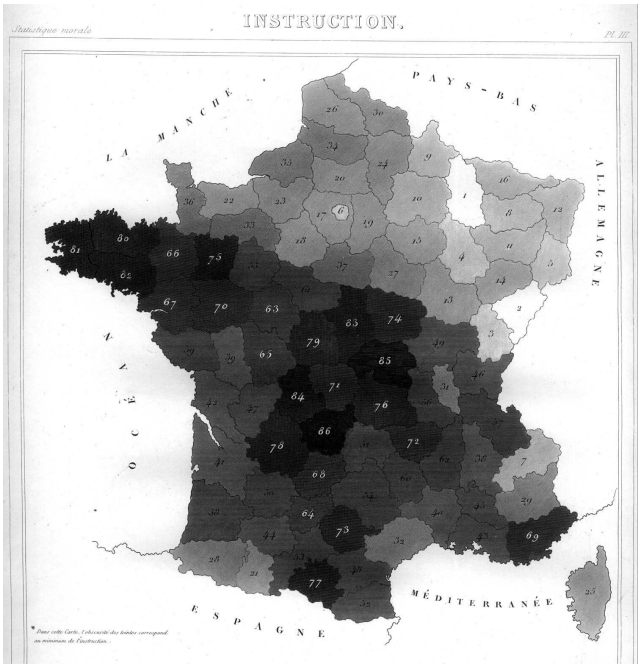
Connections and exchange in European cartography : the example of 19th century statistical maps

By Gilles Palsky (Paris)

Abstract

Europeans played a major role in the growth of thematic cartography in the 19th century. Maps of the physical world were developed at first under the influence of the German geographers Carl Ritter and Alexander von Humboldt. This expansion was marked by the publication of the first great thematic atlas, Heinrich Berghaus' *Physikalischer Atlas* (1838-1848). Berghaus was soon imitated by other European editors, such as Alexander K. Johnston in Scotland.

In the beginning of the 19th century, thematic cartography was enriched with subjects related to the human world. In particular, the enthusiasm for statistics brought into the foreground several topics drawn from what we would call today 'social sciences': demography, political economics, moral studies. In this context, most of the major methods of quantitative mapping were invented within a short period, between 1826 and 1850.



Guerry's map of education in France (1833) adopted Dupin's presentation

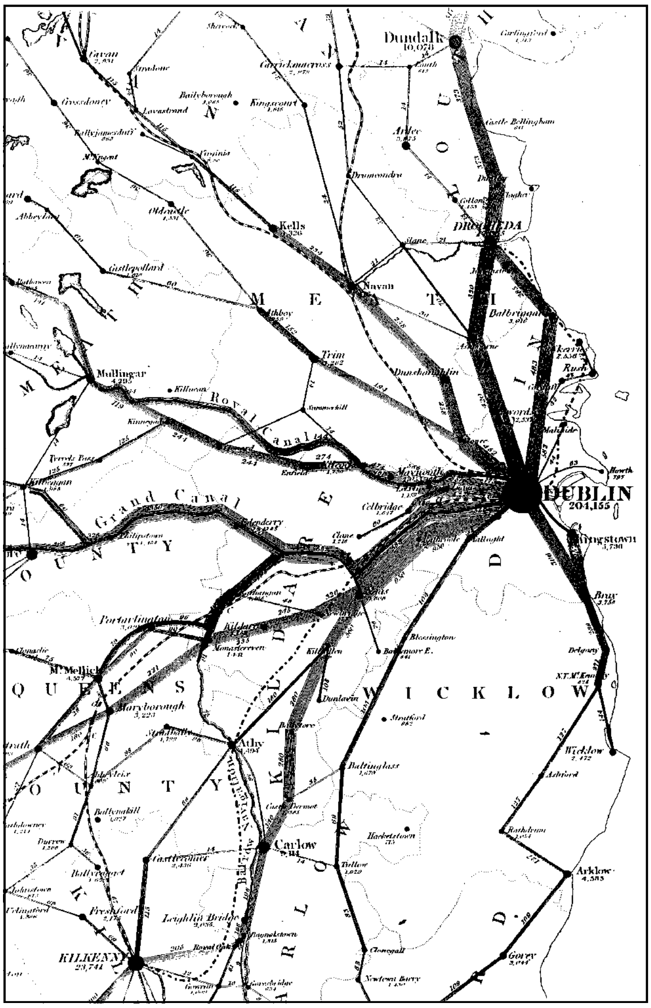
Charles Dupin (1784-1873)

This presentation deals with two of these methods: the shaded map and the flow map. The first one is credited to the French Charles Dupin, a specialist in mechanics and geometry, trained at the *Ecole Polytechnique*. Dupin presented in 1826 his '*Carte de l'instruction populaire de la France*', a map with the *départements* shaded according to their level of primary education.

The second method was conceived by an English railway engineer, Henry Drury Harness. Harness drew in 1838 two flow maps which were included in an atlas prepared to accompany a report on the Irish railways, then in project. We explore the circumstances in which these methods were conceived, which role these maps played in the respective works of Minard and Harness, and the process of their diffusion in European

cartography, first among specialist circles then amongst the general public. Dupin's shaded map quickly became famous and was imitated by scholars in the field of moral statistics (Guerry, Quételet), and later in medicine and anthropology. Harness did not share the same fame, yet flow maps appeared among engineers in France and in Belgium shortly after the publication of his own atlas. In these first examples, maps were not purely illustrative, but were primarily conceived as arguments in scientific or technical debates. Interpersonal relationships and mutual influences basically explain the spread of the cartographic methods, yet it is also possible to envisage that innovations appeared independently in different countries, an hypothesis which has been raised in the case of the flow map.

After 1860, methods of quantitative mapping were considered as part of 'graphical statistics', a branch of statistics. Statisticians made efforts to standardize and to popularize graphic methods at their international congresses, notably at The Hague (1869) and Saint-Petersburg (1872). Statistical maps then disseminated in the publications of the statistical bureaus, were displayed at universal exhibitions, or used in parliamentary debates. They also reached a large audience through atlases, textbooks or periodicals. We can analyse this transition as a deep change in cartography: the building of new 'perceptive reflexes', of a familiarity with a new graphic code, not entirely based on iconicity and able to express more abstract data. ◙



A flow map designed by Harness in 1838.

Cartographica Neerlandica
The Ortelius Specialist

Soestdijkseweg 101
3721 AA Bilthoven
Tel. +31 30 220 23 96
E-mail: info@orteliusmaps.com
www.orteliusmaps.com

Elisabeth Hermans
Old Maps and Prints

Grand Sablon 8 - 9
Grote Zavel 8 - 9
1000 Brussels

Tel. +32 11 31 17 19
Fax +32 11 31 66 96
Mobile 0475 61 38 53