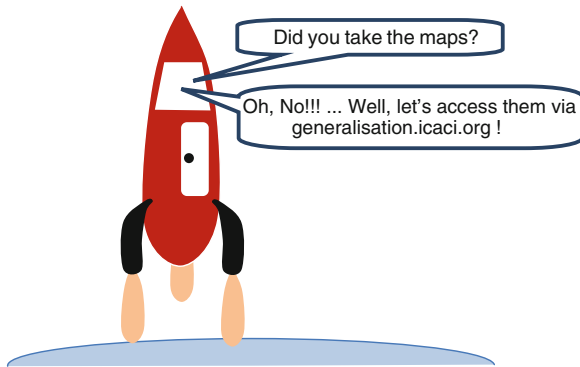


Preface



As I carefully read this book, I am wondering if we have reached the happy moment of generalisation 3.0... well not exactly, but perhaps we are not so far from it. Indeed, if you start reading this book from the end (the very impressive [Chap. 11](#)) you would see the tremendous progress made by our scientific community since 1991. Why 1991? Because 1991 is THE landmark year of our generalisation bible: ‘Map Generalisation’ edited by Buttenfield and McMaster. Suggesting that the history of map generalisation began in 1991 is of course very unfair but this book was simply fantastic since it contained all the very necessary seedlings from which today’s results have grown. Written by many young geographers and computer scientists, this 1991 book was definitely full of ideas (please read it).

Then the ICA played an important role. From the beginning, in 1992, the ICA working group on generalisation led by Robert Weibel was very dynamic. Nearly every year a workshop was organised where researchers, engineers and even vendors came from all over the world, to share ideas, debate and even compete on the subject. After Robert Weibel’s term (1992–2003), William Mackaness and myself carried on organizing meetings through the umbrella of the ICA (2003–2007). This synergy carried on thanks to Sébastien Mustière and William Mackaness (2007–2011) and is still going on with Dirk Burghardt, Cécile Duchêne and William Mackaness from 2011.

In 1999, during the ICA conference in Ottawa, a project was proposed to write a collective ICA book on generalisation that recorded the progress made between 1991 and 1999. The project was postponed but William Mackaness and I decided to take on the challenge. We added Tiina Sarjakoski to the team to boost our efforts and arbitrate over our usual French and English confrontations! “Generalisation of geographic information: cartographic modelling and applications” was born in 2007, after three very pleasant years of collaborative working (please read it too). It contained 17 chapters written by people from a very wide variety of nationalities: Canada, Denmark, England, Finland, France, Germany, Netherland, Switzerland and USA. The 2007 generalisation book was completely different from the 1991 one! For more than ten years (from 1991 to 2003), many algorithms and even platforms—from vendors or research laboratories—were developed, more teams were working on the subject, and we started also to include ideas and the first results related to real-time generalisation, open generalisation systems, on demand mapping and 3D generalisation. The concept of Multi-agent systems was used by the generalisation research community and the first results from National Mapping Agency production lines were presented. Many of the results presented in 2007 have been widely used and improved upon. Thus if you read [Chap. 11](#) of the 2013 book, you will definitely see the progress made since 1991 and even since 2007. The 65 pages of this [Chap. 11](#) are delicious because many of our propositions are today used to produce maps in different countries. Progress is ongoing reflected in the quote from this chapter: “Please be aware that the facts reported in this chapter are up to date in 2013, but might evolve quite quickly since the developments in generalisation are currently particularly active in several NMAs”. But enough pleasure! Let us reflect on some other salient points of this new generalisation book.

The first interesting point to note is the discussions in several chapters of how generalisation connects back to cartography. Of course, generalisation is a cartographic process—if not THE cartographic process (see the publications of E. Imhof, J. Bertin, R. Cuenin or E. Spiess for example). But over these last 20 years, the complexity of processing digital data and developing sophisticated algorithms and processes shadowed the cartographic inheritance of generalisation. Thus it is interesting to read [Chap. 2](#) or [Chap. 10](#) where even R. Brunet and the Chorematic maps are quoted. Here, we touch on the point that we represent the geographical space for humans, not for computers. A very different task from this is to use digital data to compute important information (such as the shortest path from A to B). These are two very different tasks. Our goal is to propose the best representation of space according to specific needs and this requires optimal generalisation and symbolisation. Generalisation is necessary for human cognition.

The second point I want to make is the imminent arrival of generalisation 3.0 (the one that includes not only people in contact with one another but also the semantic web and the Internet of things). [Chap. 5](#) for example illustrates new needs and challenges coming from the multitude of data sources, and the heterogeneity of data. [Chap. 7](#) proposes ideas to use and chain processes wherever they are coming from. This requires new ontologies (such as those described in

[Chap. 3](#)). Thus these chapters are proposing new ideas that might be the seedlings for a 2020 book on generalisation!

Last but not least, is the quality of the various states of the art contained in this book. It is enhanced by the original structure of most chapters where the first part is devoted to state of the art and the second is centred on the presentation of some current works which illustrate very nicely the state of the art. Chapters on operators [Chap. 6](#), evaluation [Chap. 9](#) and terrain generalisation [Chap. 8](#) show great maturity of our discipline and will definitely help researchers and engineers wishing to learn more about our domain.

What else is there to say? Read and enjoy!

Paris, France, July 2013

Anne Ruas



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