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Abstract
Within the history of cartography, relatively little attention has been devoted to the study of the growing body of maps and spatial data focusing on environmental issues. This is rather surprising, considering the importance of this type of cartography in the handling of the complex environmental problems of modern society. This paper analyses the development of thematic maps and spatial data focusing on the terrestrial environment of Danish landscapes. The paper is introduced with a review of the concept of environmental cartography, followed by a historical analysis of the development of environmental mapping in Denmark. Results suggest that there has been a change in the content and aim of environmental cartography in the twentieth century, from an initial focus on mapping potentials for land use improvement and optimization of the economic outputs from engagement with terrestrial ecosystems, to a focus on monitoring ecosystems and regulation of human intervention. Finally, the usefulness of the concept environmental cartography to frame analytical work dealing with the still increasing number of maps produced for environmental purposes within the history of cartography, is evaluated.

Abstract
Historical maps are vital tools for landscape reconstruction from the late medieval period onwards. However, the planimetric accuracy of local and regional maps before the nineteenth century is often considered problematic. This paper proposes a method for the evaluation of these maps, through integration in multiple computer programs such as ArcGIS, MapAnalyst and statistical software (SPSS). This method has been tested on a sample of historical maps depicting coastal landscape change in an area at the present-day Dutch-Belgian border (ranging from the local to the supra-regional level and from the sixteenth to the nineteenth centuries), and variations in planimetric accuracy over time have been interpreted. Results point to an exceptionally high accuracy of earlier medium- and large-scale maps – scale being the first determinant of planimetric accuracy – since no significant rise in accuracy over time was found. Notwithstanding this overall accuracy, many maps display pronounced local distortions. However, rather than disqualifying maps for landscape reconstruction, systematic analysis of these distortions can help to facilitate the interpretation of the historical maps and their use for landscape reconstruction. Finally, a method for integrating map accuracies in landscape reconstructions based on multiple maps is proposed and illustrated.

Abstract
The eighteenth-century field archaeologist, William Stukeley, travelled widely throughout England to produce the numerous

sketches and plans that illustrated his *Itinerarium Curiosum*. His work has generally not been seen as having made a serious contribution to the cartography or to the portrayal of the towns and landscape of preindustrial England, but the quality of his sketches and the relative accuracy of his town plans are explored here to suggest that this may be too harsh a view.

Abstract
In the early 1780s, Nagakubo Sekisui, the first Japanese scientific geographer, published a world map containing latitudes and longitudes, based on Matteo Ricci's map of 1602. The map and its extensive explanatory text had a considerable impact on the educated classes of the late Edo Period (1603–1868) toward their new vision of the world. We are providing here an analysis of the map and the first complete English translation of Nagakubo Sekisui's most interesting, long explanatory text.

Abstract
The Lagrange projection represents conformally the terrestrial globe within a circle. This is achieved by compressing the latitude and longitude and by applying the new coordinates into the equatorial stereographic projection. The same concept can be generalized to any conformal projection, although the application of this technique to other analytical functions is less known. In this work, the general Lambert–Lagrange projection formula is proposed and the application of the modified coordinates is discussed on projections: stereographic, conformal conic and Gauss–Schreiber. In general, the results are merely a curiosity, except for the case of Gauss–Schreiber, where the use of coordinates with altered scale can be applied in the optimization of conformal projections.

Abstract
Colour impairments influences access to geographical information which is usually represented by colour maps. Three dimensions of colour: Hue, Saturation and Value (HSV), are intuitive and most critical visual variables in map design. In this paper, we specifically focus on colour deficiency of red-green colour impairments. A controlled experiment was designed and conducted to explore how three colour dimensions (HSV) affect the abilities of people with normal colour vision or with red-green colour impairments to distinguish colours in maps. An eye-tracking approach was applied to quantify the accuracy and response time by capturing user eye movements to analyse the effectiveness and efficiency. In this study, we used one section of the administrative map of Hebei Province to test participant responses to area features. Differences of effectiveness and efficiency across normal colour vision and red-green colour impairments were compared. Multiple comparisons among Hue, Saturation and Value were analysed. Results show that for both normal colour vision and red-green colour impairments, Hue is the most differentiable than Saturation and Value. Saturation and Value are at the same level to be differentiated and more difficult to be distinguished. Guidelines of designing maps for both normal colour vision and red-green colour impairments were derived. The results of this study can be helpful to improve the map designs for colour deficiency.

Abstract

The selection of map projections is difficult and confusing for many. This article introduces Projection Wizard, an online map projection selection tool available at projectionwizard.org that helps mapmakers select projections. The user selects the desired distortion property, and the area to be mapped on an interactive web map. Projection Wizard then proposes a projection, along with projection parameters (such as standard parallels). The tool also creates a preview map with the proposed projection, and provides the corresponding projection code in PROJ.4 format, if applicable. The automated selection process is based on John P. Snyder's selection guideline with a few adjustments. This article discusses the automated selection process, and the map projections suggested. Projection Wizard solves the problem of map projection selection for many applications and helps cartographers and GIS users choose appropriate map projections.

The Use of Mental and Sketch Maps as a Tool to Evaluate Cartography Teaching Effectiveness P. 186-196

Kamil Nieścioruk

Abstract

The paper describes mental maps and their use in teaching process. The survey conducted among students of geodesy and cartography resulted in 124 sketches. They were analysed from the point of view of cartographic methodology and used methods of presentation. The different elements and methods were counted and helped in evaluation of teaching process effectiveness, showing changes in students' knowledge of certain rules of cartographic language and design and their applications. As the survey was conducted in relation to courses taught, the results are of great value in increasing the quality of cartographic content of these courses and teaching methods.