INT. J. GEOGRAPHICAL INFORMATION SCIENCE, 1998, VOL. 12, NO. 5, 429–430

Guest Editorial

Professor Oleg McNoleg's guide to the successful use of Geographical Information Systems (Ten ways to say nothing with GIS)

1. Never supply a map title, a scale bar, a graticule, a North arrow, details of the map projection or a legend. This greatly reduces the chances that any map you produce can be misinterpreted (Globus and Raible 1992). If you feel that the mapped region might still be recognizable then create the map using a Polar projection (unless the study area is at one of the poles, in which case use a Mercator projection). Clever use of colour and scale can also detract from any information the map might still contain.
2. Never include any measures of sensitivity analysis, errors or uncertainty. These indicate that you are a weak and gutless scientist who is not prepared to stand up for your work. There are many ways to improve the accuracy of results, such as by deleting or merging troublesome data. To this end, many GIS now supply a wide variety of spatial interpolation methods, so you can experiment until you get the result you require. The most effective way to ensure results are error free is to complete all analysis before data gathering is allowed to begin. If in doubt as to how many data samples are required, remember that a straight line can always be fitted between two points on a graph (Fortune 1984).
3. Gather as much data as you can. You never know what variables might be useful, so combine every last map you can get your hands on. Tobler's first law of Geography states that 'Everything is related to everything else … ' (Tobler 1970) so when mapping the habitat niche of the Scottish Highland Haggis (McNoleg 1996), do not forget to include the socio-demographics of the Transvaal and satellite images of the Great Wall of China.
4. Use as large a variety of map scales as possible. Scales are additive, the more scales are represented in your source data, the greater the range of scales that the output can be applied over.
5. There is an old adage. 'Measure with a micrometer, mark with chalk, cut with an axe'. In GIS parlance this becomes. 'Measure with differential GPS, mark on a 5 km grid, process with a Boolean overlay.' In GIS, the converse is more often true. 'Take the results from a marketing phone survey, standardise variables with floating point precision, combine data using 20 000 lines of code forming a sophisticated spatial interaction model.'
6. Do not waste your time checking your procedures. GIS are sophisticated tools designed to ensure that no invalid operations can be performed on the data by careless use. It is therefore impossible to make a mistake. Many GIS can now also co-register datasets automatically and with infinite precision.

7. With your thumb nail, carefully scratch off the black cross hairs marked on the digitizing cursor, since these visually interfere with your view of the underlying map.
8. Store all of your remotely-sensed images as topological vector coverages, since it is well known that coverages based on vectors are more accurate than those based on raster grids. Additionally, store all of your topological datasets in raster format because it is well known that map algebra operations are executed more efficiently in this format.
9. Never read the manual. If a task you wish to perform is not immediately obvious then this is a fault in the product design that should be reported immediately to the technical support hotline. It is then your duty to alert your fellow scientists to the problem, by repeatedly mailing a strongly-worded complaint to all related newsgroups on the internet.
10. Avoid the expensive and often hazardous process of result validation. There are only two possible outcomes from a validation exercise: (i) the analysis is correct, or (ii) the validation is incorrect. Validation is a marketing ploy concocted by an international consortium of retailers specialising in the supply of clipboards, compasses, tents and insect repellent. If field validation proves to be unavoidable it should only be conducted by those experienced in survival techniques (undergraduates).

References

FORTUNE (1984), The Unix 'fortune' program, AT&T Laboratories.

GLOBUS, A., and RAIBLE, E., (1992), 13 ways to say nothing with scientific visualisation. NASA Ames Research Report RNR-92–006, Moffett Field California, USA.

MCNOLEG, O., (1996), The integration of GIS, remote sensing, expert systems and adaptive co-kriging for environmental habitat modelling of the Highland Haggis using object oriented, fuzzy logic and neural network techniques. *Computers and Geosciences*, **22,** 585–588.

TOBLER, W., (1970), A computer movie simulating urban growth in the Detroit region. *Economic Geography*, **46,** 234–240.

OLEG MCNOLEG
Brigadoon University of Longitudinal Learning,
School of Holistic Information Technology,
Noplace, Neverland