LIBER QUARTERLY, ISSN 1435-5205

The Necessity and Nuisance of Survival, or how to Keep to Our Senses[1].

by JAN SMITS

I remember friends from wars all but we forgot.
All of them distilled into each wound we caught.
Those wounds are all the painful places where we fought.
Battles never left behind, ones we never sought.
What is it that we spent and what was it we bought.
(Frank Herbert, 1984)

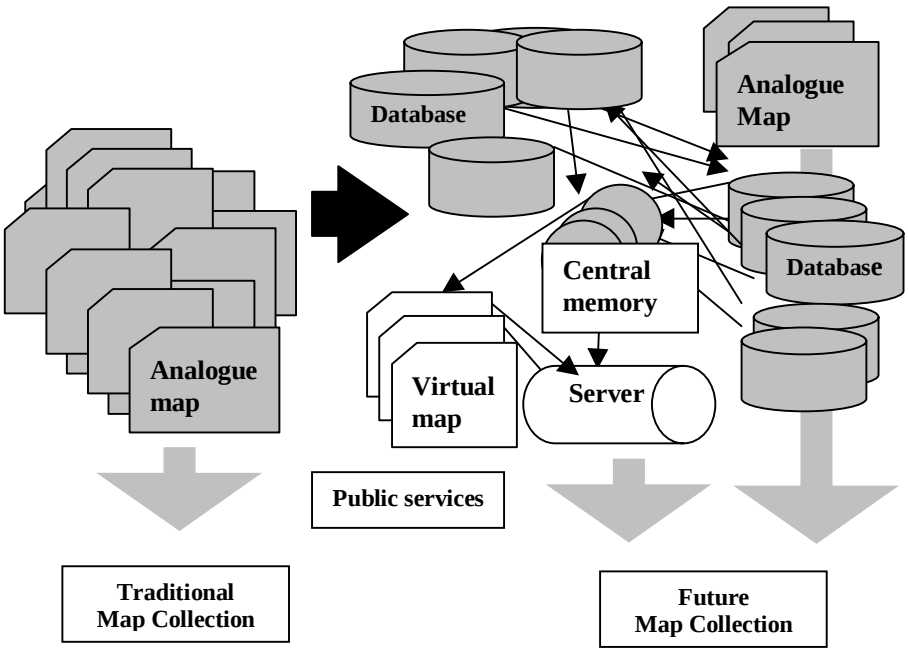

Fig. 1. Transition from the traditional analogue map collection to the future analogue and digital spatial library.

TRANSITIONS

There are analogies between the transition from manuscripts to printed material and from analogue to digital material. When we observe the transition from manuscripts to print materials we see first a degeneration in expression, because woodblock printing was a crude technology compared to the stylus or goose-feather. Lines and symbols especially are broader and irregular. Only when technology permitted a sharper definition of the expression (e.g. with copper-engravings or lithography) there came the time that it overreached the possibilities of the manuscript stage.

Though digital cartography permits depictions on the scale 1:1 most expressions appear crude compared to the analogue expression. Also because of the colour regime, and partly due to the VDU we have to work with, it offends our esthetical taste a lot of the time.

Simultaneously there is a transition in map-content. Manuscript maps are often working survey documents, symbolic, judicial, etc. and mainly give a local view. The printed map tries to give a static view of the earth and the influence of mankind on it as well as mankind's own interaction, but also gives better possibilities to envisage more realistically remoter (ideas about) space. The digital map will show most probably a more dynamic view of what is represented on the printed map, and carries the danger of disenfranchising the viewer from its base in reality by its inherent virtuality and possibilities for pure abstractions. But the ongoing transition in technology also makes it possible to increase diversity of content and increase the complexity of symbolisation in every consecutive stage.

Maybe part of the degeneration, which happens during transitions, derives from the fact that not only professionals can create the spatial visualisations but also amateurs who easily can get a grasp of the technology available. One other important fact is that the new technologies permit more people to view and manipulate the output, accidentally or purposely. Because the new masses are not versed in reading the visual representations, in first instance, they will be less critical than professional users[2].

Only when new technologies have proved themselves to be technically and economically viable, and professionals have regained a new edge over the amateurs, crudeness of representation will become less and aesthetics will prevail more. At the same time users will have a better understanding of the content as they will become better able to read the representations.

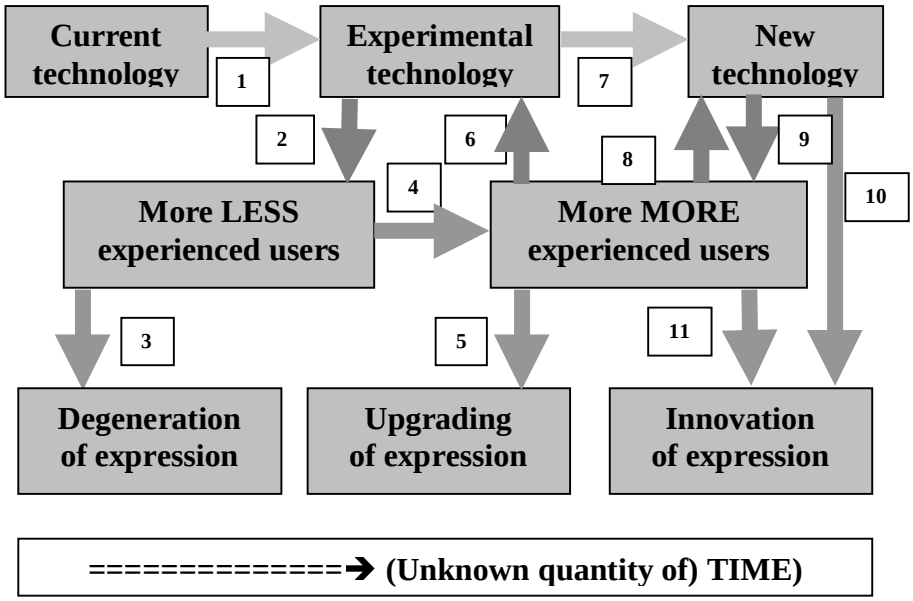

Fig. 2. Flow model for the transition of technology in cartography and map curatorship

For the map curator the transition will bring a future which may well be as versed by Andrew Tatham during the Zürich conference of 1994: ‚We shall no longer provide the users with someone else's selection and presentation of data, but with the data itself and with the means by which the user can make their own selection and presentation of this data to inform or to mould their own or other people's image of the world'[3]. It is hoped of course that the poem of Frank Herbert, cited at the beginning of this article, will not become the epitaph of those map curators who cannot find themselves at home in the future map collections.

The transition sometimes makes me claim that ultimately all knowledge is based on philosophy, which tries to penetrate into the innermost reaches of mysteries, not solving them, but clarifying them or accentuating their properties and integrating them with all other mysteries to form a wholeness which makes believing easier.

PERCEPTION

The standard definition of cartography is: The whole of scientific, technical and artistic activities directed at the creation and use of cartographic products[4]. Those who are professional cartographers have created this definition. Though the word use is incorporated I do not think it does enough justice to the perception users and map curators might have of cartographic products.

When viewing pictures of the sugarloaf mountains of Guilin in Guangxi, hazy sundowns over the tablerocks in Texas, the ‚Blue vistas between the clouds' of Claude Monet, the ‚Cornfield' of Van Gogh, or a painting by Kandinsky more is happening then only seeing. All our senses and our imaginative faculty are awakened. Somewhat the same one can observe when people view cartographic products. Professional users will try to find the hidden or outspoken message but still feel the sensual perception lurking in their minds. Less professional users or just accidental viewers are mainly caught by their sensual perception. Especially when the meaning of the cartographic product is more or less hidden, like in most remote sensing images or e.g. geological maps, a lot of viewers are caught by the impression it makes on their senses and the rational faculty hardly plays a role in their appreciation. A perfect compromise would be when maps are ...statistical projections, which speak to the senses without fatiguing the mind, possess[ing] the advantage of fixing attention on a great number of important facts[5]as expressed by Alexander von Humbolt.

When we reason we are using the same circuits in our brains that we use to process sensation and emotion, because those are the only circuits we have inside our head. At the neural level, there is no difference between thinking and feeling.[6]

Therefore I propose a more idealistic definition for cartography: The whole of scientific, technical and artistic activities directed at reconstructing observed, planned and imagined spatial reality into a visual representation, which meets the uses of the rational and sensual faculties. I think this definition is more to the point when map curators are concerned.

LIBRARIES AND SPATIAL INFORMATION

In the nineteenth century when learned societies started to change the scientific landscape, cartography was a branch of study for geographical societies. Maps for many adherents were one of the easiest ways to understand the exploration of previously unknown territories and the rise of thematic maps made them more aware of their own surroundings and the interaction of man with these surroundings. As maps became more and more

a part of general education and tourism the cartographer specialised more and more in visualising large scale basic information which became tools for government management and planning. This specialisation also led to the forming of independent cartographic societies, which did not form an integrated whole with geographic societies anymore.

In libraries this cessation had already become reality by the turn of the nineteenth century. Because of their unwieldy form, maps were put in separate departments, sometimes to their detriment as links to their geographical book and periodical counterparts were sometimes lost. Thanks to the hard labours of many map curators they usually are in the best shape possible. Because of their specialisation map curators are sometimes outside the mainstream of library life because they identify themselves more with their subject and its content then library personnel usually do. Many map curator groups therefore are part of cartographic societies and not of library societies. Exceptions are the global IFLA Geography and Map Library Section and the European Groupe des Cartothécaires de LIBER. Though these are part of library societies they are not as integrated as may be desirable and continue to be rather independent and more focussed on their subject matter than is usual in the library field.

In this digital age where cartography and GIS become more integrated and where it is possible to integrate disparate sources of information there seems for the cartographic professions to be a shift from purely cartographic visualisation to the use of spatial data in all its manifestations. Therefore it seems logical to put the question whether departments, which occupy themselves with different kinds of spatial data and their accompanying processes, should not (virtually) integrate or at least force stronger links with the other departments. This is true as well for the professional societies as for the library and archive map departments. There are developments, which show that societies, which occupy themselves with spatial data become overlapping or are looking into the possibilities of federating. Looking at developments within the Alexandria Library Project[7] we see the same with libraries and other data holders.

Seen in this perspective it is strange to notice that e.g. The IFLA '98 digital map librarian workshop[8], organised by the IFLA Section of Geography and Map Libraries, got so little response that it had to be called off. This means that most map curators, with the exception maybe of those in the United Kingdom and Scandinavia, do not want to learn a technology which will be predominant in the future spatial library.

Another bad example is the fear of map curators to think of applying GIS-technology to their older possessions. When older maps are scanned GIS-tools can be used for extraction (e.g. toponyms), vectorization (e.g. boundary

or choropleth maps), creation (e.g. integrating boundary maps with statistical data), overlays (e.g. comparing states of a certain map), etc. Curiously no library is involved in a project like The Great Britain Historical GIS Programme[9] and most probably more of these kinds of programmes will evolve in time.

When we do not embrace new technology willingly it will become the harder to persuade library management to built the necessary digital environment in which we have to work in future and which will enable us also to co-operate easier with other collections.

CHANGING ACTIVITIES

Up till now standard activities of map curators in the analogue age have been:

- Acquisition
- Accessing
- Conservation
- Collection management
- Public services.

Most of these activities have been aggregated into the function of a single map curator. Unfortunately times will get harder as functionality of the library in general will have to change in order to cope with the new media and the innovative ways of information usage. Though basic knowledge of cartography, geography and history are already essential to help users in future more emphasis will be put on the knowledge of the potential use and applicability of certain data in representational processes. And part of this knowledge must surface in catalogues in order that users can evaluate the fitness-of-use of certain datasets before they have to or can be processed to create virtual or analogue output for the user.

In view of this, standard activities of map curators in the digital age will probably be:

- Study, study, etc. (education permanente)
- Acquisition
- Analysis
- Accessing

- Conservation
- Collection management
- Public services
- Representation of data.

In other words: Map curatorship comes closer to 'geoinformatics', that is a discipline concerned with the modelling of spatial data and the processing techniques in spatial information systems. Modern developments in these fields show that data acquisition and processing are becoming more and more closely related.[10]

CONCLUSION

One of the future tasks of map curators will be to preserve the faculty to review spatial visual representations on their rational as well as on their sensual aspects. Those who have the ability to help create or view visual spatial representations should be able to guide users in choosing those expressions, which give at least the same overall results as we are accustomed to in the analogue age. Due to the finances involved, libraries (in this case map libraries) must try to create national infrastructures and negotiate agreements with publishers to make digital sources mutually available or available through distributed licenses, as, for example, with CHEST[11] in Great Britain. Besides this I think that map curators should also lobby for the creation of visual digital geographical interfaces based on geographical co-ordinates. Area will always be the main entry to find spatial data but word thesauri or alphanumerical classifications always will be arbitrary systems. The visual digital geographical interfaces will also enable the combination of area and subject as the maps used can be topographical and thematical[12].

Though seemingly obvious libraries, must be aware that archiving digital spatial sources in a single repository makes availability vulnerable, especially by technical default. Mirror archives are essential, even when created within a single institution.

Usually the context in which analogue materials function is preserved with them. The same is not always true for digital materials, especially when the datasets are pure data. Map curators should secure exemplary output (on long-term preservable media) as evidence of common usage of digital spatial sources to illustrate a historical context.

Interactivity of sources and processing of data will make spatial information a means for map curators to achieve a valuable and serviceable cartographic expression. The only end in this will be to serve (future) customers.

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2 But whether an increased exploitation of the [digital] map will serve knowledge and understanding more than hype and glitter is uncertain, for without a graphically literate and geographically astute public, maps may become little more than pleasurable icons employed to seduce and entertain rather than to inform and enlighten.
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