Shediac, PSYC 579
January 25th, 2018
WC: 600

Essay #3 – Maps and Geovisualizations

Monomier (1991, *p.* 25) says "reality is … far too factual to allow a complete yet uncluttered two-dimensional graphic scale model." The author concludes that "the value of a map depends on how well its generalized geometry and generalized content reflect a chosen aspect of reality." While the core argument, that maps need to boil-down detail to be effective for their intended purpose, remains true, I argue that the assumption that a cartographers' job is to choose some narrow aspect of reality on which to focus, does not.

The notion that maps are static imagery which need to be carefully constructed to avoid clutter is an artifact of the print era. As is the notion that a map must be constructed with a specific purpose in mind as to define the features of the static image. Far and away, the 21st century's maps of choice are manipulatable user interfaces (UI) like Google Maps and digital directories (found at shopping malls and elsewhere). These systems strive to allow user input based on specific goals and interests, and can potentially inform HCI.

Preference for UIs suggests, first and foremost, that one should not underestimate the multitude of different goals and motivations. Perhaps the best strategy to reduce map clutter is to allow users to decide when there is too much; to toggle-on and off symbolic elements as they are needed. This way, users can build a map that is *good enough* to suit their specific goals. This strategy should also provide some relief to cartographers, who no longer have to grapple with crafting immaculate and informative static images, but rather elements that play well together within the general theme of the interface. The same general rules about symbol colour, contrast, size and iconography still apply, but now a map's intended purpose is limited only by the depth of the UI's options.

A second advantage is that UIs can be as sparse or as detailed as required. Business travellers in a new city may want a subway-like route diagram with no sources of confusion, while tourists in that same city may want to more detail so they know their sight-seeing options.

A third point to consider is that UI maps allow infinite combinations of re-scaling in (x,y) coordinate space, allowing users to acquaint themselves with projection and scale however they like. The Mercater projection badly biases apparent landmass toward the poles, and is present when Google Maps is fully zoomed-out. However, the ability to zoom-in on any part of the map, scaling with progressive accuracy, is a remedy. A few minutes of idle play on Google Maps can give the impressions that Oman is actually pretty big, and Iceland is actually pretty small.

A counter-argument will necessarily be made that these systems are onerous and inefficient. However, such a critique applies only to the efficiency of pursuing a narrow set of goals defined by the designer of a static visualization. Access to a greater depth of (accurate) detail necessarily decreases the abstract space separating a map from the landscape it represents. If users of a map explore multiple levels of information (topography, streets, shops, restaurants, public-transit elements, etc.), they have perhaps inefficiently answered the question of how to go from point A to point B, but their initial inefficiency actually improves efficient navigation once circumstances or subordinate goals inevitably change (Ex. "construction on 4th avenue disrupts buses and prevents me from getting my usual coffee, but I already know the alternatives."). Since cartographers cannot possibly plan for every use of their product, maximal flexibility of an intuitive UI should be the new ideal.