"False Truths": Ethics and Mapping as a Profession

Tom Koch
Department of Geography
University of
British Columbia
tomkoch@shaw.ca

Think about this: You and your partner are the owners and operators of a struggling cartographic firm, Map-Off, Ltd. You are offered a lucrative contract, with more to come if they like your work, to make a map based on publicly available data (http://apps.nccd.cdc.gov/ brfss). The client asks you to map healthy smokers over 70 years of age in the United States. You are free to find and use statistics (a bar chart, for example), graphic images (of tobacco, of smokers, etc.) and anything else that will make your map the best statement possible. Your perspective client is the American Association of Tobacconists (AAT). Knowing that tobacco is a carcinogen responsible for the deaths of some but not all users, and some non-users affected by second-hand smoke, do you take the contract? Do you make the map?

At the 2005 NACIS meetings in Salt Lake City ethics was in the air. Was it appropriate for members of this organization to "outsource" to persons in Asia and in Europe, depriving fellow members of the North American organization of work? What were the ethics of the annual "Map-off" presentations and should the maps that were presented by participants be judged on aesthetics alone or on the basis of the ethics embedded in their presentation? What would a professional ethic for working mapmakers be like?

Ethics is hard stuff, as Socrates realized and ethicists ever since have understood. A recent article on medical ethics approvingly quotes words Plato puts in Socrates' mouth in The Republic: "The argument concerns no casual topic but one's whole manner of living" (Wiggins and Schwartz, 2005: 81-82). Those arguments, however, permit no obvious conclusion in the way science thinks of things as obvious. There are no tests to prove with statistical certainty A is an ethical action while B is not because ethics is not about facts but about values, principles derived from them and the application of those principles to social issues. Ethics argues a consistency between value, principle, and ethical application; it cannot prove the correctness of the underlying values themselves (Koch, in press).

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When focused within a profession— journalism, mapmaking, medicine, etc.—ethics is not just about the clinical procedure, the individual map, or the unique story. Instead it seeks to uncover the "manner of being" those acts present for an individual practicing in a profession, and for the profession-at-large. In the end, ethics is about the role of the professional as a citizen; professional ethics is about a group of citizens whose work reflects a set of values whose operational principles affect the communities at large. As Peter Singer put it, "Ethics requires us to go beyond [the professional] 'I' and 'you' toward a universalizeable judgment, somehow perceived from the standpoint of the impartial spectator or ideal observer" (Singer, 1993:12).

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For North American Cartographic Information Society (NACIS) mapmakers, the trick therefore is to understand, as individuals, professionals, and as members of a society, that ideal observer's judgment of the maps they create. One way to do this is to consider the fictional tobacco company assignment and ask, *Why do we recognize this assignment as ethically questionable?* If the tobacco map is at least potentially problematic, one

may then ask whether the issues it raises are those shared by other professions, and if so, what their ethical dilemmas say about the mapmakers' quandary.

The Map

If the map of long-lived smokers is simply a graphic presentation of data compiled by others then the mapmaker has no greater responsibility for the effect of the map that results than the person who designs this journal has for this article. The designer's job is to assure the article is as legible as possible on the page, not to judge the content of the page itself. Similarly, at Map-Off Ltd. you are not asked to critique the data on long-lived smokers, to judge its accuracy or gage its potential public effect. The mapmaker's charge, like the page designer's, is legible presentation of the CDC data through the appropriate choice of graphic (type font and size, call-out quotes) and cartographic (coloration, border width, etc.) elements.

The mapmaker assumes no ethical responsibility for the product that results. The only issue is whether the map meets a generally acknowledged, generally accepted professional aesthetic standard. If it does then the employer must fulfill its promise of payment in exchange for a piece of work whose value was contractually agreed upon. To do less would be a breach of contract and thus an act of bad faith, a violation of the general ethics of responsible commercial exchange. Practically, the ethics of mapmaking stops here, at the principle of reciprocity that governs commercial relations.

From this perspective, mapmakers are drudges whose job is to translate another's data and point-of-view into a comprehensible, aesthetically pleasing graphic (Wood, 2002). The effect of the map is the sole responsibility of the employer, AAT. The map that results is not a representation of reality, "the world-as-it-is", but the presentation of a reality defined by the dataset selected by the employer for his or her purpose. At this level, mapmaking is an ethically vacuous, thoroughly pedestrian craft.
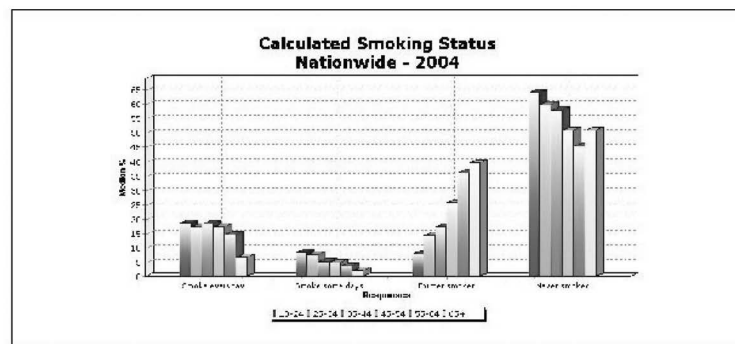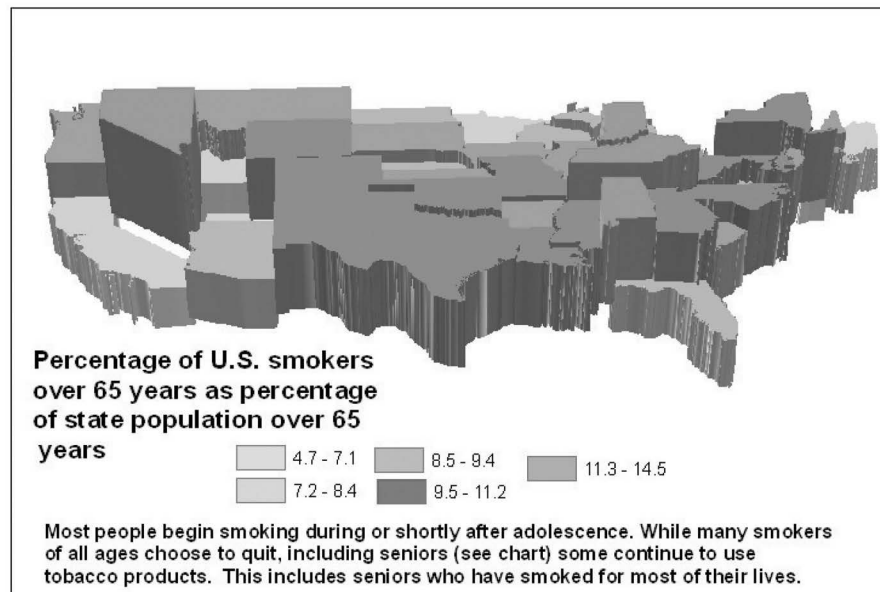
The Problem

Cartographers do not like to think of themselves as drudges toiling at a trade that is ethically impoverished and intellectually vacuous. Like most citizens, they want to see their work as socially valuable and intellectually fulfilling. They want to be proud of the work they do. The problem is that it is hard to be proud of the tobacco map. At issue is not the map—a useful graphic—but the message the map presents. We know the association of smoking with longevity is a "false truth," a lie wrapped in the guise of fact (Koch, 1990). Longevity may occur in spite of long-term tobacco use, but never because of it.

The map of long-lived smokers (Figure 1) is a problem because it suggests equivalence between longevity and tobacco use that is unsupportable. In the language of semiotics, its components are the sign that together create a signifier whose message is a relationship between smoking and longevity (for the applicability of semiotics to mapping, see Wood, 1992; Koch, 2005). The result is "unary", the presentation of what appears to be a banal fact (some smokers are long-lived) whose intent is to suggest smoking is not harmful and may be beneficial—you want to be long lived, don't you? (Barthes, 1981: 40-42). Its message is validated by the assurance of an official source, the CDC web page at the bottom of the map promotes the conclusion that "you can smoke and live a long time", a possibility

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Still Smoking: After all these years!

Percentage of U.S. smokers over 65 years as percentage of state population over 65 years

4.7 - 7.1	8.5 - 9.4	11.3 - 14.5
7.2 - 8.4	9.5 - 11.2	

Most people begin smoking during or shortly after adolescence. While many smokers of all ages choose to quit, including seniors (see chart) some continue to use tobacco products. This includes seniors who have smoked for most of their lives.

Calculated Smoking Status Nationwide - 2004

Smokers as a percentage of the total age-related population versus those who chose to quit by age group.

A product of Mapp-Off, Ltd.

Source: http://apps.nccd.cdc.gov/brfss/tobacco

Figure 1. Long-lived smokers is a potential response to the hypothetical ATT contract for a map of data on smokers over 70 years of age in the United States. Map by author. (see page 81 for color version)

that skillfully ignores the greater likelihood of early death resulting from long-term tobacco use.

The problem is not with the map but the intent of the employer for whom the map was made. Ethical discomfort would disappear, for example, if the National Cancer Institute (NCI), not AAT, commissioned a map of long-lived smokers for use in a smoking cessation campaign aimed at elderly tobacco users. Singer's "impartial specter," thus, would find the same map unacceptable and dishonest if promoted by AAT's interest in long-term smokers, but acceptable if commissioned by NCI for an anti-smoking campaign. Singer's professional 'I', in other words, would criticize the AAT map as misleading while applauding its use by NCI in an anti-tobacco campaign. "Many smokers live long lives" is misleading and potentially harmful while "after all those years, long-lived smokers need to quit" is socially useful. The result insists the ethics of mapmaking resides not in the map itself but the use to which it is put, not simply its

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truthfulness—both maps are identical except for their heading—but the use to which limited truths are put. The question then becomes: are mapmakers responsible for the way their maps are employed?

Representation Versus Presentation

The distance between mapmaker as drudge and mapmaker as ethically complicit citizen, between map-as-neutral graphic and map-as-social artifact is precisely what Leman's so-called "critical geographers" have sought to reveal (Lemann, 2000). In the last two decades the works of Harley (1989; 2004) and Wood (1993; 1996), among others, has argued that maps are not simple vehicles for the dissemination of data but social constructions laden with meaning for which the mapmaker bears some responsibility. Harley, for example, called for consideration of the "rightness of the social consequences of map-making" (Harley, 1991: 9). The implication is that mapmakers have a responsibility that goes beyond the accuracy of the geography their maps present.

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   Either the map is, as Robinson and others have suggested, a representation of the world for which no ethical responsibility exists, or as Harley and Wood separately insist, a presentation with ethical implications for the mapmaker as well as his or her employer. The idea of maps as representations existed largely without challenge in the decades after World War II because cartographers of that generation saw themselves as self-consciously representing the work of others, transforming the resolution of spatial problem into solutions.
   "They would come to the office," Robinson said of his years of military mapping during World War II, "the main office, my office, and be assigned to a cartographer. He would go over all their needs, establish what data they had and what data we had to provide, usually the base data" (Cook, 2005: 48). Robinson's cartographers were guardians of what's real, the "base data" onto which was grafted the military client's data (bombing targets, for example). Cartography gave reality to its clients; its ethics began and ended with the resulting map's ability to present the client's problem and solution in as clear a graphic as possible. The ethics of representation is the ethics of cartographic disengagement. It limits cartographic responsibility to locational truths (these places are here, and here, and here) irrespective of the values a map presents.
   Theoretical opposition to this posture has built exponentially since the 1992 publication of Wood's *The Power of Maps*, which grounded the fundamentally academic, historical arguments of Harley in the pedestrian maps of roads and tourist sites. Wood's book has been instrumental in developing the argument that mapmaking is not an ethically neutral activity and that cartographers bear responsibility for the maps they make, for their effect in society.

The Map As Story

The distance between presentation and representation is not unique to cartography. Daily news reporters face a similar tension in their careers. The daily reporter's task is the accurate representation of an editorially assigned subject's statements in a coherent manner conforming to general standards of news writing. They bear no responsibility for those statements—no matter how foolish they may be—beyond assuring the accuracy of attributed statements (Koch, 1990). That is why journalism is the fourth estate: It broadcasts the statements of the prior, more powerful estates of society (Koch, 1991).

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Consider a reporter working for the Raleigh, NC News and Observer (N&O) who is assigned to cover a press conference called by AAT president and well-known local philanthropist Ralph Gleason. At his press, conference reporters are given a copy of the Map-Off, Ltd. map and a print version of Mr. Gleason's talk. The newspaper's cigar-smoking city editor orders a 14-inch long story on Gleason's to be run with the map under a 30-point headline: "Some Smokers Long-lived". The map's source in six-point type, *http://apps.nccd.cdc.gov/brfss*, is the graphic equivalent of the journalistic "he said," or, "she said". It assigns responsibility for the map's content to the US Center for Disease Control. The reporter uses quotes to justify a story that quotes Mr. Gleason saying, "Many tobacco users are long lived!" Just as the map represents AAT's perspective, the news story represents the subject's conclusions. Both present a false truth that is unary, the banal fact that not all smokers die young because of tobacco use.

That the ethical frame for cartography and journalism are similar is not surprising. The map-as-story has become a journalistic staple. Consider the typical example presented in Figure 2. On November 8, 2005 the Associated Press moved a map-story whose headline, "War with insurgents ramped up," was set above an annotated map of Iraq. The map itself
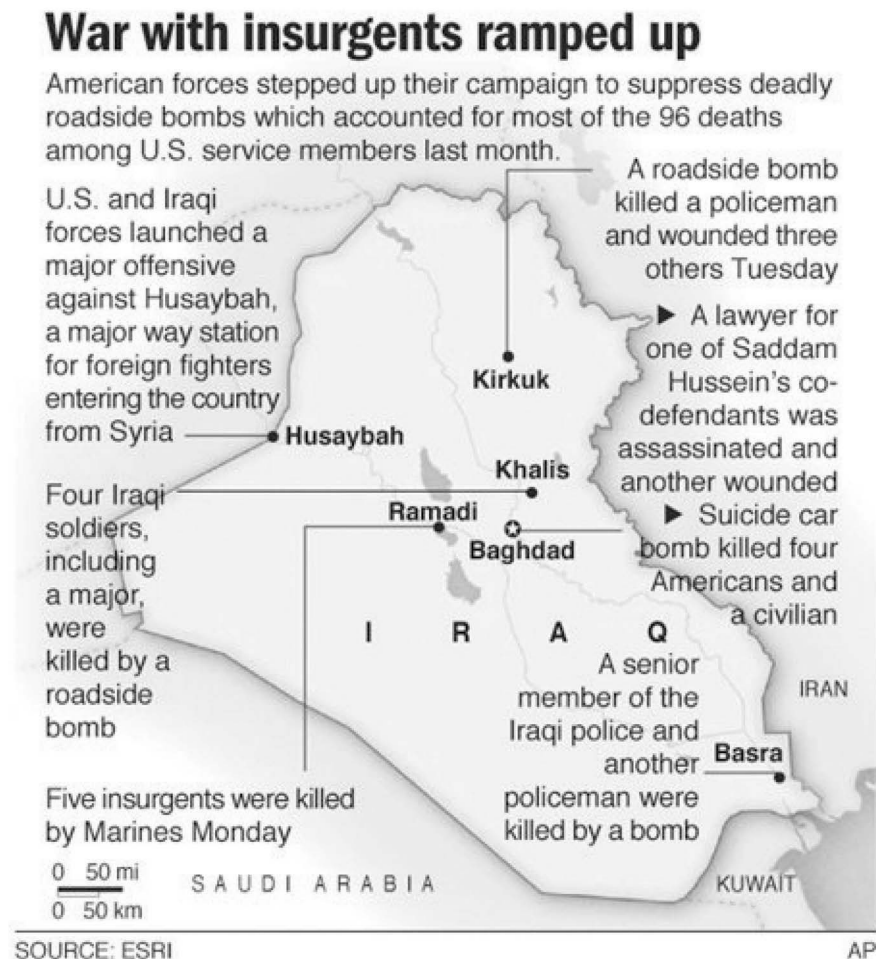

Figure 2. This map-story by the Associated Press of military events in Iraq argued for increased US military activity in response to "foreign" insurgents. (AP Graphic). Accessed 8 Nov. 2005 at http:// global.net/. (see page 82 for color version)

(Source: ESRI) was embedded in text identifying mapped locations where US troops, and their allies, had been killed by bombs.

The multiple locations of anti-US bomb attacks (here and here and here!) are the map's sign. Together they signify aggression against the U.S. military and its allies. The message is a necessary and just increase in US military activity ("ramping up") against "insurgents," some of them "foreigners," seeking to do them harm. The ultimate sign, implicit but obvious, is the "War on Terrorism" taken to Iraq by US troops legitimately engaged against foreign fighters using bombs.

The map-story tells a small truth: military officials say that at these map coordinates, bombs killed US troops or their allies. That small truth is made authoritative by the map's pretense of impartiality, "This happened. No question." The result is validated by the ESRI attribution at the bottom of the page. ESRI provided the "base data" of the map onto which a justification for "ramping up" US attacks was announced by military public relations personnel at a press conference.

The military truth represented leaves out too much that is critical from the perspective of Singer's impartial observer. Absent from the map-story are the many sites the US military has bombed, killing both opposition and civilian populations. The identification of Husaybah as a "way station" for foreign fighters (they have to be stopped!) ignores the critical fact that US troops also are foreign invaders with less reason to be engaged than the neighbors from Syria. Nor does the map permit acknowledgement that while some combatants are not Iraqi citizens, many are Iraqi nationals opposed to the US invasion and subsequent occupation of their homeland. The result is a small truth (bombs here and here and here) hiding a greater falsehood (US forces defend against bomb-carrying foreigners) promoting US expansion of military activity.

News cartographers are, like their reportorial counterparts, generally uninvolved with their work at this level. Monmonier's history of *Maps with the News*, tracing public mapping in the media, does not include an index entry for "ethics" or "social responsibility" (Monmonier, 1989). Nor does Monmonier's book include an entry for "propaganda" or "war" despite the importance of the maps in twentieth century military campaigns (Cosgrove, 2006). Indeed, Monmonier insists journalists and mapmakers have "divergent foci—editors towards facts and opinions, and artists toward decoration and packaging—a view that appears to utterly deny map content and social responsibility as cartographic concerns (Monmonier, 1989). He is clearly wrong, here. The focus is identical and the result equally problematic.

At issue is not *How to Lie with Maps* (Monmonier, 1996), because as representations maps that lie are not the mapmaker's problem. The real question is whether truth telling beyond the trivial is an ethical principle professional cartographers wish to embrace.

Maps As Science

In theory, maps accompanying scientific reports can be assumed to have a higher standard, abjuring the false truths common to journalism and the commercial mapmaker. This assumption ignores, however, the carefully constructed nature of science, and the limited truths it typically presents. The problem is made more difficult in this discussion by the tendency of cartographers advancing cartography within Geographical Information Science (Schurmann, 1996 for example) to treat science as a modifying adjective whose meaning is clear, rather than a noun whose history is complex and difficult to define (Shapin, 1994; Shapin and Schaffer, 1985).

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Certainly, "Science" maps often are as misleading as commercial and journalistic maps. Consider, for example, two maps of waiting times for liver transplantation (Figure 3) included in a National Institutes of Medicine (NIM) report prepared by scientists charged by Congress to evaluate national graft organ allocation programs in the United States (National Institute of Medicine, 1999). The maps distilled a wealth of data on graft liver transplant waiting times. The result supported a conclusion that while the system was not necessarily efficient, neither was it inequitable. "No significant effects of race or gender were observed," in the words of one author, "indicating that the system is equitable for women and minorities once listed (Gibbons, Meltzer and Duan, 2000).

Even if true, the conclusion is true only in the most limited sense. It ignores thousands of potential recipients who never made it *onto* the list— were not listed as potential organ recipients—because they lacked healthcare to pay for transplant services. Unconsidered were those sufficiently impoverished that they were not listed because their home situations

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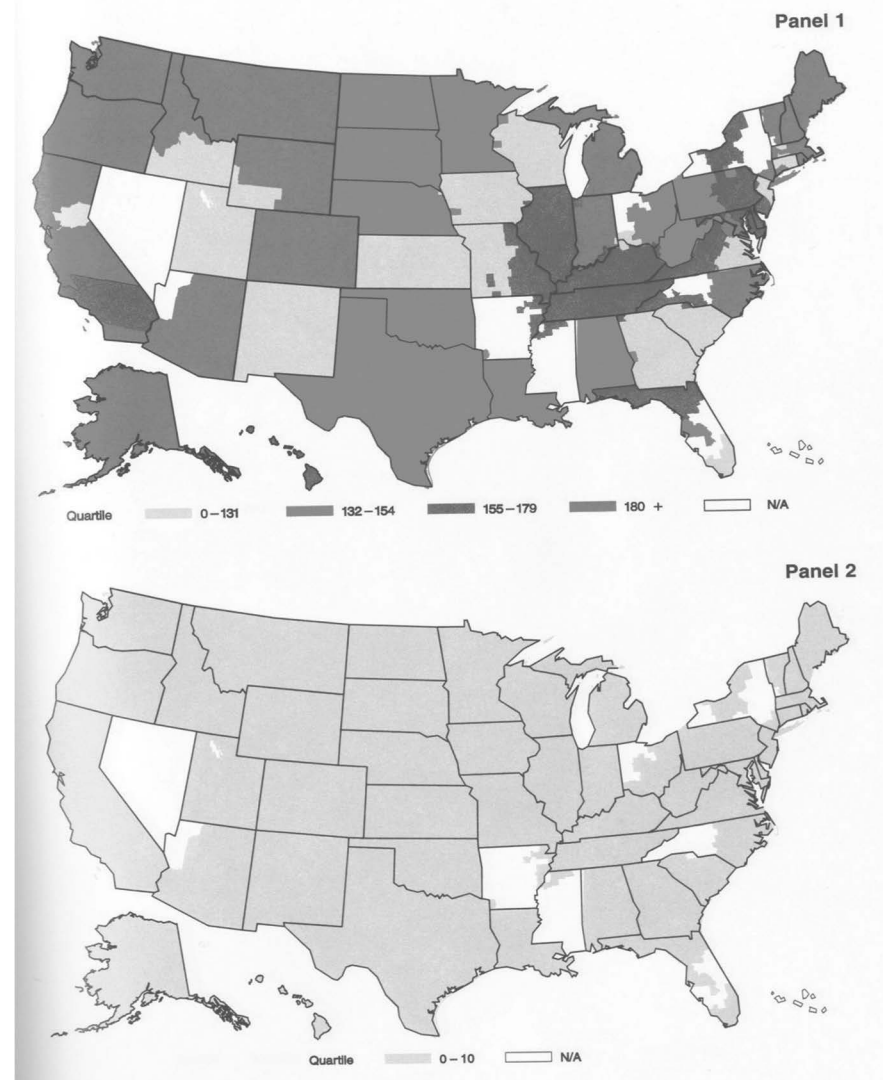

Figure 3. The map of liver transplant candidate waiting times for all those with liver disease (top) and those in urgent need of a liver transplant argued equality of service for critical patients but variable waiting times in some places for non-urgent patients. Source: National Institute of Medicine. Organ Procurement and Transplantation, 58a. (see page 83 for color version)

were unsatisfactory and their income insufficient to pay for post-opera-tive medical care and drugs (Koch, 2001). Nor does the second map give careful consideration to those folks represented in the first map who died before they get to the second map because of other complications resulting from poor healthcare and poverty. Hidden in the maps was the inequitable national distribution of transplant performing hospitals requiring poten-tial transplant recipients to travel hundreds of miles at their own expense to transplant centers, a trek with a potentially adverse effect on survival (Hudd, 1997).

Like the map of Iraq insurgents, the NIM map is a false truth, correct in a limited, unary fashion but hiding in its limits a range of systematic inequalities in the US organ transplant distribution system (Koch and De-nike, 2003; Koch, 1999). Like the AAT mapmaker, the NIM mapmaker was also a hireling employed by scientists hired by Congress to report, albeit within very specific parameters, on the equity and efficiency of the US or-gan transplant distribution system. The difference is that as a science-map, the NIM graphic seemed to present findings that carried a greater than limited truth rather than a representation of limited truths that hid at least as much as it revealed. The message must be that, however it is defined, "Science" carries no greater guarantee of ethical objectivity. It offers no less a problematic field for cartographic presentations.

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Reputation

Why not just accept that 'truth and the social effect of representative maps' are the client's responsibility? It certainly would be easier to accept the true lies maps so often tell in the same way journalists accept the false truths of attributed news stories. Why worry ethics at all? The best an-swer is that to do so hurts our self-esteem. We want to think of ourselves as more than drudges, as socially valuable citizens performing work that serves society-at-large.

Mapmakers want to be taken seriously and for that to occur people need to trust the map or story that represents events in the world. One option is journalistic: the only truth promised is the accurate distillation of another person's work irrespective of its veracity. The result is unsatisfac-tory from the perspective of the impartial observer representing society's demand for something more and the mapmaker's belief in the social value of his or her craft.

The tension between individual self-interest (take the contract, stupid!) and the greater social good (It's a lie, refuse it) is a "public goods prob-lem," whose common solution is that people generally seek to act in the public interest rather than out of pure self-interest (Milinski, Semmann and Krambeck, 2002). We cooperate for the good of all even when the re-sult diminishes our own immediate store of goods, however it is defined. This appears to be an innate tendency embedded in our social constitu-tions, a species attribute Darwinian in its evolutionary power (Hauert, *et. al.* A socially beneficial posture advances the greater society, returning to the individual pride in who they are and what they do in society.

Saying mapmakers want to believe their craft contributes to society and ethics, is a way of assessing the contribution a map may make not simply to the employer, but to society-at-large. Admitting we do not present a best estimate of the truth, but instead truthfully represent a client's false truths diminishes our role socially and diminishes the craft in the eyes of its practitioners. We therefore care about ethics in mapping to the extent we care about mapmaking as a social good. A concern for ethics thus is about what Goffman (1959) called, *The Presentation of Self in Everyday Life*

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and the degree to which as professionals, mapmakers or others create a social presentation. Goffman's (1959) sociology is ethics in a different frame occurring when a person or group requests others take seriously the public self that is presented, in this case an impression of knowledge and expertise.

Professional Ethics

Professional associations are typically developed to define a craft or profession, to delineate its standards of conduct, and to set ethical parameters for its members. This is who we are, associations state; this is what we do and how it serves the common weal. It is why we should be taken seriously, and trusted. Those who violate professional standards can be censured, disciplined, and if the offence is egregious, expelled from the professional body. The model is medicine's Hippocratic Oath, an ethical statement that has "served as a model for almost a hundred generations" (Nuland, 1988). The entirety of the oath can be divided into two broad injunctions: physicians must (a) respect each other and (b) care for their patients, doing no harm to either colleagues or patients.

In one form or another, professional societies typically formulate similar injunctions. They demand respect for fellow practitioners, "professional courtesy" in all the meanings of the phrase, and secondly, enjoin against harm and for the promotion of social good. Most are careful in their definitions to limit the parameters of their ethical guidance in a manner that does not restrict either the client base or the services that can be rendered to those clients.

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Journalism has made objectivity an ethical goal irrespective of the truthfulness or falsity of the statements reportorial subjects present (Ward, 2005). To do otherwise is to make journalists into arbiters of the work of others, something reporters and editors are neither trained nor equipped to do (Koch, 1991). The American Advertising Federation's (2006) (AAF) code of ethics states that "Advertising shall tell the truth, and shall reveal significant facts, the omission of which would mislead the public". There is, however, no compunction for advertisers to consider what an advertiser's limited truth mean within the greater community. In these professions, and in cartography, the representation of limited truths is the standard and a standard rationale for what results.

From the viewpoint of the impartial observer, this is not a particularly satisfactory state of affairs. At present there is no simple standard, however, which can judge a map's representation, except that of the accurate representation of limited data, of false truths and true lies. This is a convenient, not necessary, state of affairs. NACIS members could choose to engage the hard work of deciding where objective presentation ends and false representation begins. This would require complex discussions among NACIS members about what it is they do and believe, not simply as mapmakers, but as citizens, and the extent to which the ethics they espouse as members of society should define professional practice.

A commitment to an ethics greater than the attributive would begin with a committee whose task was to consider seriously the responsibility of members, and the degree to which mapmaking is a representative service or a presentative responsibility. The committee would struggle to formulate a code of responsibility inhibiting, at least in theory, contracts for maps whose results were patently misleading. The organization-at-large, if it took a greater ethic seriously, would offer awards to members who refused contracts from companies that did not meet its social standards and "bad map" awards for those whose false truths were especially egregious.

In the process, cartography would be transformed over time into a profession advocating responsibility for the presentation of data with a degree of confidence in its surety.

Conclusion

There is no ethics unique to mapmaking. There is, however, a general ethics that applies to mapmakers as it does to all other citizens. Typically mapmakers share with advertisers, journalists, and writers a very restricted ethical charge that accepts a very narrow avenue of responsibility for the work they contract to complete. Ethical responsibility is limited to the contractual ethics of business even if, as citizens, mapmakers carry the weight of social responsibility that in theory all members of society accept. For mapmakers to take ethics seriously would require paying attention to Singer's "impartial observer," to the context of the data they are asked to present and to its social context. It would insist that the limited, personal benefit of a single assignment is always outweighed by the effect as judged by Singer's impersonal observer, and not the employing client or supervising editor. It absolutely would be worth doing, and it is something professional mapmakers are unlikely to address seriously anywhere except in an erudite paper in a professional journal like this one.

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ABOUT THE AUTHOR

A former journalist, Tom Koch (http://kochworks.com) is a gerontologist, medical ethicist, and medical geographer with appointments at the University of British Columbia and Simon Fraser University. His most recent book is *Cartographies of Disease* (2005).

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