Maps, politics, and history

An interview with **Mark Monmonier**
Conducted by **Jeremy W Crampton**, Los Angeles, March 2002¶

Spatial surveillance

JC I'd like to thank you very much, Mark, for agreeing to be interviewed. I think it's a good opportunity to hear your views on a number of issues to do with your own work and also with the field of cartography. You've not only just published a book called *Bushmanders and Bullwinkles*[1] but you're actually going to be publishing another book—is it later this year?

MM Yes, Jeremy, the publisher plans to have it out in November, 2002.

JC And what's it about?

MM Basically, *Spying with Maps* examines a variety of different geospatial surveillance technologies, ranging, let's say, from intelligence satellites to weather satellites to the use of overhead imagery for detecting marijuana 'grows'—both indoor and outdoor—to the use of aerial photos for measuring the size of fields back during the era of the Agricultural Adjustment Administration, to dataveillance technologies, to GPS-based tracking technologies and the infamous Digital Angel, to such things as cell-phone tracking, crime mapping, and the use of websites for notifying communities about sexual predators. There are a variety of different policy issues here, and I guess I try to assess the extent to which one's location can or should be an aspect of personal privacy.

JC How did you get interested in surveillance from a spatial point of view? Was it a particular event?

MM I have a longstanding interest in geographic technology and policy issues, but exactly when and where the idea came to me is hard to say. I recently wrote a paper for *Cartographic Perspectives* which was concerned with webcams, but I had already begun the book before writing the paper. I proposed *Spying with Maps* after my publisher proved less than enthusiastic about a project I call 'maps that say no'—the use of maps basically to restrict people's access to space of different types. It's a good topic, and if I live long enough I'll still do it or something similar.

JC 'Maps that say no' is an interesting subject, because maps are generally presumed to say 'yes, this is how things are'. I'm thinking here of deliberately confusing maps for political reasons—not just the odd missing detail, but as a deliberate strategy in order to disturb how we think about space. I just heard, for example, about a 1960s anarcho-tourist group 'Scramble!', which produced deliberately confusing maps of cities and gave them out to tourists. Have we overlooked the use of maps as resistance?

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[1] Monmonier (2001)

¶ Transcribed by Julie Tuttle. This interview has been jointly edited.

MM I've never heard of Scramble! or their deliberately distorted maps. Anarcho-tourist group? You mean they don't like lots of tourists or the things that merchants/developers do to attract tourists? Sounds a bit nasty, not to mention perverted—they enjoy helping folks get lost? Probably not very effective. Might even attract more tourists. Let's hope anarcho-tourist groups don't try faking aeronautical charts!

'How things are' can include prohibitions such as areas where you can't dig (because of buried utility lines), build a McDonald's (because of residential zoning), or fly an Iraqi Air Force plane (because of a 'No Fly' zone). Maps *can* be used by citizens to resist proposals for locally objectionable land uses. These maps typically dramatize impacts. And sometimes the project's proponents' maps can be exposed as flagrant lies or otherwise ridiculed. (I looked into New York State's flawed effort to site a low-level radioactive waste dump. The Siting Commission's maps were so bad they played into opponents' hands.) Maps can also be used to exaggerate a threat—military or environmental—and this can go beyond mere rhetoric to disingenuous misinformation.

JC This raises the question how the events of September 11 played a role in your book in terms of making data less available to the public at the same time that there might be an increased awareness of the possibilities of spatial surveillance.

MM Well, the manuscript was already out for review on September 11, and the referees noted that, somehow or other, I had to address the attacks, and I did. Certainly there is a concern about the restrictions on access that have been proposed as a result of September 11, but I think the jury is still out as to how much, if anything, should be done. It seems logical not to have floor plans of nuclear-power plants rather readily available, for instance. But a lot of the information is already out there. Various users have already obtained copies of potentially sensitive maps and data, and we have map libraries and internet archives. Part of the problem would seem to be bureaucrats with a cover-your-ass mentality, who are afraid that geospatial data might remotely help terrorists—along with everyone else. So to be cautious, these nervous Nellies protect their posteriors by hiding information from the general public. A compromise strategy under active consideration is the use of the FOIA (Freedom of Information Act) process to screen out potential users who cannot articulate a good reason for having the data. In the long run, though, this approach will be no more effective than the Maginot Line. But it might not hurt to make access to some type of geodata a bit more difficult for terrorists. I'm sure we'll see changes, but how far-reaching they'll be is anybody's guess.

JC What were some of the most interesting spatial surveillance technologies that you came across in your research?

MM Some, I think, are largely hypothetical and probably will remain so. A case in point is Digital Angel, which has several different levels, the least problematic of which is a wristwatch Grandpa might wear if he has Alzheimer's and his children fear he might wander off. The idea is to put a small GPS receiver on his wrist and link it to the wireless communication system so that you can keep track of where he is. The concept is similar to technologies for placing people under house arrest or to restricting the movements of sex offenders or people on parole. GPS has limitations, though. It doesn't work well indoors, and parolees who try sufficiently hard can no doubt slip their digital leash. If the subject is an old person, the system could be used to monitor his or her vital signs. What's frightening is the possibility of linking the monitor to a GIS and setting no-go boundaries so that the child or other subject who steps into a forbidden zone receives an auditory signal or phone call—or perhaps an electric shock or e-pinch.

JC So it would actually administer pain to the body as they transgress on certain spatial no-go zones, around schools perhaps?

MM Yes. As a means for electronic detention for criminals, corporate or otherwise, it sounds Orwellian, but I'm not convinced it's any worse than putting people in prison. And if GPS-based monitoring really works, it could prove far more humane than some of the ways society deals with criminals. There is a potential for abuse, of course, especially by parents who micromanage their kids' movements. Parents have a responsibility, of course, but it's largely a responsibility to teach kids to know why they should stay away from certain places.

Another Digital Angel scenario involves a chip inserted under the skin. Out of sight, it might be a way to thwart kidnappers. Beware, though, of kidnappers who are not only electronically savvy but handy with a scalpel. Other hypothetical situations are equally scary. I think it was Jerry Dobson who suggested the possibility of the child who turns 18 having a taking-out party, instead of having a coming out party.

JC Frankly this *does* sound Orwellian. I think it was also Jerry Dobson who used the phrase 'geoslavery' to refer to a possible society in which there is abuse of not just an overenthusiastic parent, but the state itself regulating and intruding into our private lives. Do you agree with that? Do you think that the potential for abuse by the state is actually much more worrying than overenthusiastic parents?

MM There are ways in which the state could abuse its power. I'm not worried. There are many things that the state might do that would worry me, and geoslavery, however daunting, is nowhere near the top of my list.

JC What would worry you?

MM Preemptive nuclear strikes.

JC Isn't that to dodge the issue? Obviously there are few things as worrying as nuclear war. But we might still be concerned with how the state uses surveillance to regulate and order its population, and how geospatial technologies play an increasing role in that regulation. Many writers on privacy, for instance, highlight the radically increased ability for databases to mesh together and be interoperable. Isn't that what's new and dangerous about these technologies? Not 'misuse' but, precisely, 'use'?

MM It's a problem and a worry, of course, but quite well covered in the privacy literature, often to the point of paranoid exaggeration and myopic technological determinism. And clearly there are cases in which the state should not only employ surveillance but control unacceptable behavior. Examples range from minor zoning-law violations to violent sex offenders.

JC So something that is not to do with surveillance necessarily at all?

MM Surveillance, I guess, is part of it. I suppose what might worry me would be the state's failure to take full advantage of technologies that might protect its citizens. I fully believe that geospatial technology in general is value neutral. I know people who disagree with this point of view. But can you say the automobile is value neutral? Cars are often used, not deliberately in most cases, to kill or injure people, and vehicles in a sense help enslave people by putting them into a commuter workforce. And then, of course, there are tanks and other armored vehicles, not to mention mobile artillery. If one wants to look for technologies that are bad, look at handguns, which have gotten way out of control in this country. It's hard to say whether or not it's too late to do something about it. We have these Second Amendment crazies running around

claiming that it's all right for people to have automatic weapons, which I think is a total and utterly unconscionable misreading of the Second Amendment, which basically says that states can have a National Guard.

JC One of the earliest critiques of GIS—for example, in Pickles (1991)—was that technologies are *never* neutral in that they are always situated within particular sets of power relations. We never find technology in a 'neutral' situation. If Pickles is right, doesn't it imply that we still need to critique geospatial technologies in order to uncover those power relations?

MM Such a critique seems trivial insofar as it's the situation that makes a technology good or bad. Plumbing is good when it solves an otherwise messy public health problem, for instance, and bad when it facilitates Nazi gas chambers. Of course, we need to critique the use of geospatial technologies. And we also need to critique the critique of geospatial technology.

JC After September 11 there have been a number of reconfigurations of the line that divides publicly available data from sensitive data. One of my students was interested in whether you have an opinion of the recent [November, 2001] agreement between the US and Space Imaging to limit public access to satellite data collected over Afghanistan.

MM That was an interesting strategy insofar as the DOD [Department of Defence] could have invoked shutter control, and told Space Imaging to deny anyone imagery of the area—period. Instead, the military bought themselves an exclusive contract— however lucrative the deal, Space Imaging apparently could not refuse their offer. I suppose this approach sets a better precedent than shutter control. But would there really have been a problem if newspapers, say, had tried to follow what was going on from space? Probably not. What's tricky, of course, is that Ikonos, through off-nadir viewing, can greatly cut the revisit time as well as home in on certain areas of the client's own choosing. But would Space Imaging really sell the imagery to terror- ists—to people who live in caves, as George Bush says? That seems an unlikely scenario, but the administration was no doubt worried about CNN or another media outlet revealing the military's plans or exposing an operation that turned out badly. What's interesting, too, is that Space Imaging is licensed to put up another satellite able to capture imagery with a resolution of half a meter. You can't get a whole lot better. Experts have figured that intelligence imagery can get down to about 10 cm, which can reveal quite a lot. The tricky point, of course, is that a low-orbit satellite doesn't offer the long 'dwell time' that field officers crave—a satellite that stays over the target area 24 – 7.

Remapping and politics
JC Let's turn to your last book, because there are some interesting overlaps in these two pieces of work. Your last book was a cartographic study of redistricting. This is a very political and politicized topic, as you know. Do you therefore consider yourself to be a political cartographer?

MM No. I would apply the label *political cartographer* to people who draw election- district maps, at least as I would use that term.

JC So you don't think that there is any kind of deep meaning to that phrase, political cartographer?

MM Deep meaning? Not really. Mostly it's a glib phrase, at least when applied to the configuration of legislative districts and congressional districts, or indeed administrative districts and school attendance zones. These can all be highly political in a sense, and they can be used to control power or to channel power toward one party or the other, toward one group or the other.

JC In the last chapter of *Bushmanders and Bullwinkles* you reach back to some of the ideas of Lani Guinier, particularly the idea of multimember districts, which might diffuse some of the very partisan debates about redistricting that we're facing as a country now at many different spatial scales. You don't necessarily see that as a politically informed cartography or a cartographically informed politics at all?

MM Multimember districts, particularly when combined with proportional representation and weighted voting, could provide a much fairer and more stable system than what we have now. Democratic governments could avoid contentious redistricting controversies by defining stable, geographically meaningful boundaries and not having to change them every 10 years because of different rates of population change. If you establish multimember congressional districts, for instance, and allow people living within those districts to elect representatives using 'choice voting' or some other form of proportional representation, each person would be able to have much more influence than now on the election of at least one member of the House of Representatives. We certainly have the technology to make voting and ballot-counting quite efficient—it need not take weeks and weeks to determine the winners. And we could avoid the Supreme Court's mindless obsession with exact population equality—a good standard for correcting the abuses apparent in the early 1960s, to be sure, but utterly absurd when pursued to extreme with inherently flawed census data. With multimember 'superdistricts' we could avoid ridiculously irregular districts like a few in North Carolina in the early 1990s and some others in Georgia in the most recent remap.

Multimember districts can avoid highly contorted election districts crafted to serve purely partisan goals. It's intriguing that the Supreme Court gave the green light to this kind of gerrymandering in declaring unconstitutional some highly contorted election districts drawn up after the 1990 Census to help elect minority candidates. Basically the high court said that shape is not important as long as boundaries are not delineated principally on racial grounds. But if geography matters—and I'm convinced it does—it would be a lot better to have rational, established boundaries for multimember districts, each with a collective clout proportional to its population. Multimember districts got a bad reputation when they were used decades ago to let a small majority of the population elect *all* members of a district's delegation. Another key ingredient is 'weighted voting' so that in a three-member district with 3.6 times the population of an average, ideal district each of the three members would cast 1.2 votes. With choice voting at the ballot box and weighted voting in the Congress or state legislature, we can have geographically meaningful districts, stable boundaries, and demonstrably fairer elections fully consistent with the one person/one vote principle. In a sense it's a recipe for letting voters district themselves.

That said, I'm not optimistic anything is going to change. But writing *Bushmanders* helped me appreciate a much better spatial approach to representative democracy. Many people say it's too alien and thus not terribly realistic. I disagree. You can find similar electoral schemes in Europe as well as earlier in our own history, and if you put yourself in early-19th-century America you'd surely have a difficult time envisioning the mess we have now. I don't say that anything is impossible. It would be nice to devise a more equitable and efficient political regionalization without losing a war—which is another way, of course.

JC That's intriguing. I think you offer a vision of politics as not necessarily one of arbitrary borders but one which captures meaningful communities in which people live.

MM You're right: people *can* belong to a community that is scattered and not easily enclosed by a simplistic geographic boundary. Politicians and journalists criticized Lani Guinier for some other recommendations that she had made. Many of her critics had never looked carefully at what she had written. The fact of the matter is, if you have a system that facilitates racial representation, it doesn't mean giving minority candidates an unfair advantage. Under a system of multimember districts and choice voting, African-American voters might decide to support a white woman or a Hispanic male, and there is nothing to prevent white males from voting for African-Americans or Asians. I've done it.

JC How often does it happen in practice?

MM I think it happens with increasing regularity. An increasing number of people are willing to look beyond skin color.

JC Some of the questions to do with what you call remapping are similar to the debates this country had concerning the census and the statistical sampling issue. Hannah (2001), for instance, argued that counting people is more 'political' than voting—resources and decisions are increasingly made on how many people in certain categories are counted. Are we becoming a nation of passive 'countees' rather than active voters, and isn't this part of state surveillance?

MM Yes on both counts (so to speak). There are different ways to count the population, with different effects on revenue sharing and legislation, and a reliable count is a foundation of representative democracy. As for statistical sampling, it's amazing how rapidly it went up in smoke. The intriguing issue here is that the Census Bureau, for some reason that I don't fully understand, seems to be sitting on the results that they generated. Various newspapers have used FOIA to request the statistical estimates, and the Census Bureau does not want to give them up. Why they're doing this doesn't make a darn bit of sense, other than the fact that I guess it could be embarrassing because the bureau *itself* put a lot of emphasis on sampling as the most reliable way to reduce both the undercount and the overcount. I'm sure that if those data were released the public would consider the results embarrassing insofar as sampling becomes extraordinarily tricky when you're dealing with small areal units. Sampling would probably yield a better count for aggregates like congressional and legislative districts. If anything, the Census 2000 sampling controversy demonstrates that counting people is an enormously difficult task, and getting it right is tricky and expensive. It seems that this time around, in 2000, they actually got it a lot more right than they did in 1990, simply because the federal government was willing to spend a lot more on a so-called 'actual enumeration', and they were willing to do this primarily because a Republican Congress felt that an estimated census would help Democrats. But it's hard to say whether it would.

JC Why?

MM It's unclear because basically you can identify people's political persuasion and past voting history, but whether or not they go to the polls in the next election is another story. A statistically adjusted census would help some jurisdictions as far as federal aid might be concerned, but even there I don't think this time around that municipalities really have more much cause for concern than they had in 1980 or 1990. One big difficulty, of course, is that a census is a snapshot, and federal agencies have other ways of estimating population that are far more accurate once one gets more

than a couple of years out from a census enumeration itself. Censuses also pose some other problems, if you recall what happened with September 11. The census didn't really tell you how many people were actually down there, how many undocumented and illegal workers, for example. Moreover, the census tells you pretty much where people sleep, not where they work. Which raises other questions about voting and taxation: for instance, New York City would like to tax people who work within its borders but sleep elsewhere. It makes sense that these workers should contribute to the cost of running the city. But they should also have a stake in municipal elections, which is not going to be an easy issue to deal with.

JC It's an interesting example of the spatial complexity of our lives. A simple census map of income might not be very revealing because it's based on where people live rather than where they earn that income, which is a point that Lucky Yapa has made.[2] Maps of poverty, for example, show where they live but not where they're underpaid at work. So 'poverty' is at work, not home.

MM But you could also argue that part of where they live for census purposes is, in a larger sense, another worksite.

History of cartography
JC Well, this brings us quite nicely to the last topic that I want to address, and that's the history of cartography in the 20th century, of which the census is obviously a significant part. I believe that you were asked to be involved in the *History of Cartography* series early on by David Woodward?[3]

MM By David and Brian Harley, actually, and this was—oh my gosh, it must have been back in the 1970s. I sort of lost track because, at one point, we came up with an outline for volume 6, and I was the principal person (but not the only one) involved in drawing that up. But it sort of languished because volume 1 took a long time. And volume 2, which proved to be much bigger than volume 1, took even longer. Brian unfortunately died in 1991, and now David sees himself getting older and he's wondering how this is going to end, if in fact it does! So he appointed three coeditors for volume 4. He's going to be the principal person involved with volume 5, and I'm going to be the coeditor for volume 6. David's also restructured volumes 4, 5, and 6, which will be encyclopedic in structure and content rather than collections of narrative essays. Articles will range from as short as 500 words up to about 10 000 words, but there will not be many longer ones. This strategy should make volume 6 more comprehensive, let us bring in contributors from a wider range of countries, and finish it within a reasonable period of time, and—this is probably the greatest justification—making it a useful reference, which is the *History's* fundamental objective.

JC What do you think Brian Harley will be best remembered for? What is his legacy?

MM He got many people to think about questions that they hadn't been thinking about before. It's a shame that he died at age 59. Had he lived, his views on things would no doubt have evolved, and he would have had a much greater influence on contemporary cartographic thought, including the critique of GIS. It's almost like his essays are frozen in time. It's a shame that his book[4] came out so long after his death. I've reviewed it for *Cartographic Perspectives*, and one of the things that struck me is

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[2] See Yapa (1996).
[3] See Harley and Woodward (1987; 1992; 1994); Woodward and Lewis (1998).
[4] Harley (2001).

the introductory essay by John Andrews. When you read that and then you read what Brian says, you really have a different take on Brian's viewpoints, and I'm not certain I would like to have that happen in my case.

JC Does the *History of Cartography* have an overall vision or theory?

MM Well, I'm not sure what you mean by overall vision or theory. At the simplest and probably most important level, its vision is giving scholars something that is systematic and useful. This goal is going to be a lot easier, I think, for volume 5, covering the 19th century, than it is for volume 6, on the 20th century, because facts, processes, artifacts from the 19th century have by now surely gelled, which hasn't yet happened—not fully at least—for the 20th century. By contrast, the issue of theory is tricky, which raises the question: what is theory in the context of map history and cartography in general? One take on theory is the conceptual framework, a structure intended to help you to understand something; an example is David Woodward's 1974 framework.[5] Other theories are intended to inform map design; for example, if you pay heed to Bertin's visual variables, you should produce maps that are more reliably decoded than if you had ignored Bertin.[6] That's the kind of theory that works. I'm a bit leery about other concepts that go under the name of theory in, say, human geography or social science. 'Theory' is used to justify critical appraisals, and a lot of people in our discipline spend a significant part of their time critiquing other people in the discipline. What bothers me is that these critiques have little if any relevance to mapping policy. Through its silences this approach suggests that policy is immaterial. Critical analysis can indeed inform policy, but many of its cartographic practitioners seem to have blinders on. In my view what they see as theory is pointing them toward activities that are far less socially and politically useful than they could be.

JC Theory for theory's sake rather than for the sake of policy and politics?

MM Yes, basically. Policy and politics can have an effect that this type of theorizing seems to ignore. Why don't I like theory? Initially because of psychophysics. I entered academic cartography when psychophysics—Flannery's proportional circles,[7] for example—was being touted as highly promising. If we build on it, its proponents implied, we will eventually make map design far more efficient and reliable. For a while—but fortunately not for long—I bought into the paradigm. But by the late 1970s it was apparent that the psychophysical approach was largely worthless. Which is not to denigrate the systematic study of map design: there's a lot that one can learn through a systematic examination of map symbols and evaluation experiments of various types with human subjects, but that's more empirical than theoretical. Nowadays, when I confess to being skeptical about theory, I'm especially concerned that proponents of social criticism of cartography don't really seem to be very committed to communication. They litter their essays with elitist language, which I don't think takes anybody, except maybe them, further down the road toward understanding. I say understanding rather than truth. If anything, I am probably as skeptical as anyone as to exactly what we mean by truth. And I think some of the social criticism is raising issues that need to be raised, but in the context of policy.

JC I guess there are two different ways of thinking about what a history of cartography does for scholarship. One is an encyclopedic one, where the facts are at your fingertips. The other, though, is where narratives actually think through issues in the

[5] See Woodward (1974).
[6] See Bertin (1983).
[7] See Flannery (1971).

history of cartography that can only be done in a more sprawling way. So there's sort of a fact-based record, and then there's one which is how do we interpret it, and what does it mean.

MM An excellent point. But remember, though, facts and interpretation are not mutually exclusive.

JC What would be the topic that you would most like to see addressed in volume 6 that you don't believe is addressed sufficiently at the moment?

MM The extent to which map design matters, and this goes to a variety of different things, which is to say that maps can communicate information; they can reveal patterns; they can attract interest; they can support a particular political point of view. That I guess is at one level. Then look beyond that in terms of the map's effect on the betterment or the worsening of humankind. It's a complex situation, and somewhat iffy. We might also bring up the question of the Peters map, and raise a question of how many people died as a result of the Mercator projection? You could try and answer that I guess at different levels, some of which could get a little bit ludicrous. For instance, to what extent did a navigational tool support the slave trade? But as a potentially propagandistic view of the world—does the projection really matter? Indeed, does map design really matter? Do maps really matter? I think they do!

I've heard, as I am sure you have, that cartography as geographic subdiscipline is moribund. I can recall one time I thought of a 'macrocartography' and a 'microcartography'. In this schema microcartography is map design, and there's always going to be a need for map design. Cartography is going to remain important, and can play a role in a critical examination of GIS products. In its applications and products, GIS has many shortcomings. Many people who are using it, not to mention some who are teaching it, don't really have a good sense of what map designs work well and which are likely to fail miserably: questions in the realm of microcartography. There's also a macrocartography that embraces photogrammetry or photo interpretation, remote sensing nowadays, and GIS. But many people, I'm sure, think of cartography as an undergraduate course in which one draws maps in pen and ink. But this way of drawing maps has changed—it's no longer there. What's left then? Has cartography become GIS? It's a moot point. I guess a lot of people in the GIS arena wouldn't agree that what they are doing is cartography. There's also the annoying tendency among academics to rename things, as occurred when we went from geographic information systems to geographic information science, to geospatial technologies, a term that acknowledges that the important role of GPS and what's called 'location-based services'. If you look beyond GIS, you'll see a wider enterprise in which GIS as we know it now (mostly buffering and map overlay) is a relatively small part of macrocartography. But I don't have a crystal ball.

JC Thank you once again.

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