

INTERVIEW

Tim: Thanks so much for taking the time to share your experiences with *Cartographic Perspective* readers. Would you mind introducing yourself and giving a thumbnail sketch of your background?

Patrick: Growing up in Canada to Swiss parents, I think I was always studying the differences between North America and Europe. Even at the age of 7 or 8, I was a news junkie: watching the news and flipping through our Swiss and Canadian news magazines, observing the design differences. Fast-forward to my university years, and my internships as a technical writer grew to that of a technical illustrator, and I started doing freelance instructional design and illustration for Hewlett-Packard. Instead of mimicking the painstaking detail of typical technical illustrations, I wanted to simplify them. I think Shakespeare said, “Brevity is the soul of wit.” So I took that, and the rules and principles of technical writing theory, audience analysis, and use-case analysis, and applied it to pictures.

I tried to take away the extraneous details. Instead of drawing the detailed computer motherboard, I drew the actions required to repair a very simplified representation of that motherboard. At the same time, I would try to make that representation topographical, showing how that object that belongs in a certain space relative to other objects in their spaces. This was 1993 or so.

Tim: Were you designing for the web at that time?

Patrick: Some of the companies I worked for were creating publications and putting them online, but not in the way we see now. Things were very static then. It fascinates me that cartography, at that point, was also very much static. The concept of a dynamic map was absolutely lost to us. It was not even predicted to be something of the future. It didn't register on our radar.

Tim: What first attracted you to cartography?

Patrick: Early on, cartography was open season for me, because, like technical or user manuals, you can judiciously use design and communication to teach people to do something on that landscape. Or, you can choose to give people a sense of what's in that landscape, and let them direct themselves what to do.

It's amazed me that once cartography became dynamic, once maps became something that were embedded in your browser, or in your little mobile device, all of these original rules of user-oriented design



Figure 1. Patrick Hofmann

and communication were now much more naturally being applied. We finally witness the outcomes of brevity and taking away clutter. We see designers making things that are fundamentally elegant and precise, establishing those conceptual rivers of space and flow so that people can actually navigate a map efficiently. The opportunities are incredible. The maps that you see today are just scratching the surface in terms of the depth of information that can be offered, not to mention the amount of information that we should adequately and appropriately take away.

Tim: **What's next if we are just scratching the surface?**

Patrick: That excites me, but it's hard to answer. Where I work, we can't physically build every single map tile of every single square meter of planet earth. So, you take a convention or library of conventions, and you say, "OK, given all of these cartographic conventions, how does Madison, Wisconsin look? How does London, England look? Can people navigate from A to B here? Can they search for landmarks or particular categorical searches? Can they find stuff? Are we appropriately adding things to the map when it's reasonable, and are we appropriately taking things away when it's unreasonable? Oddly enough, those questions haven't changed since 1993: I ask them whether I'm designing a technical illustration or an icon for a map.

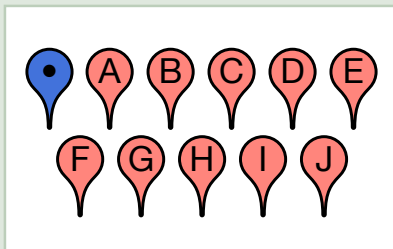


Figure 2. Basic Google markers

Tim: **Speaking of conventions, could you speak to how you have developed a single set of icons for mapping the entire world? Were some conventions global and others local? Why?**

Patrick: It basically began as an exercise to make a single universal set of icons; however, we were aware of the risk of some icons being confusing in some contexts. Will 80% of those icons be appropriate and recognizable for 80% of our users 80% of the time? At the beginning of the design process, I was sure that a single universal set would achieve that. I was thinking that we would have to make some localized icons at some point; after all, you want to minimize the number of icons that have to be "learned," and, of course, the number of icons that could be misinterpreted as to offend.

Tim: **So, some icons must require more sensitive design than others?**

Patrick: Sure—the places of worship icon is a good example of this. Not every single religion on the planet kneels or prays in the same way. Kneeling is not ipso facto, the thing that often defines what worshipping is. So I felt I had to come up with something unique for a universal icon.

So I thought of motifs that exist across religions, with a particular goal: to find the safest ones. Architectural elements came to mind. Architectural styles have changed, and the building styles of places of

worship have changed somewhat dramatically over the centuries, but they still have an obvious canonical association. So, I collapsed all of the architectural styles that I could find for the top 12 or 13 religions on the planet. The result was something that looks vaguely, but not exclusively, like a church... or a mosque... or a synagogue... or a temple. The averaging of everything created a very obvious symbol, because it paid homage to turrets, or minarets, or steeples. I thought it was quite successful as a single icon.



Figure 3. A sampling from Google icon library

Tim: Sure—but are there times when you might want to use a more specific icon?

Patrick: Definitely—and we use these as well. We distinguish between Shinto temples and Christian churches—it gives users a more informative view of the neighborhoods of Tokyo, for example. I designed icons for different types of Buddhism because they vary so much symbolically and really offer an informative texture of the makeup of an area. The result is a map that really educates people. As soon as you see a bunch of “wheel” icons over suburban Bangalore, India, it’s amazing to say, oh, those are all Dharmist Buddhist temples.

That said, we haven’t localized all our categories iconically. I haven’t localized all our restaurants, for example. This place is known for chicken wings. That one for pizza. That one for pasta. That one for soup. It might get too busy.

Tim: But then you run the risk of getting comical rather than canonical, right?

Patrick: Yes. That's exactly it—the balance between learnability and usability; canonical versus comical. The pizza slice, for example, looks very odd at by 12x12 pixels on a map. The chicken wing—or just the silhouette chicken—has never made it to Google Maps for a reason. These ideas just don't speak as well as the fork and knife. They might provide an amount of information, but I'm not sure they wouldn't add more busy-ness to the map rather than richness. Another issue would be the great number of restaurants that serve more than one type of cuisine. Whereas places of worship tend to be designated to a particular sect of a religion, restaurants can be a big can of worms.

Tim: Speaking of restaurant icons, have you seen the user-generated Google Map icons on the Map Icons Collection hosted at <http://code.google.com/p/google-maps-icons/>?

Patrick: Yes, indeed.

Tim: What do you think of the icon of a man wearing a sombrero to indicate the location of Mexican restaurant?

Patrick: I think they've done a really admirable job of creating one big family of icons. Although it's perhaps stereotypical, what's good about the sombrero icon is that it's not literal, but rather symbolic. A taco or burrito at such a small size is too literal and not unique enough. I like it when icons aren't so literal.

Tim: It's associative.

Patrick: Yeah, it's just a sombrero.

Tim: Any tips on how to make an icon better?

Patrick: In addition to refraining from literal representations, try to make it work as a single object, as a single silhouette. It's often better to bank on the learnability of a simple symbol rather than the immediate intuition of a complicated symbol (which often is done with an overly literal icon).

Tim: I'm curious to hear what your thoughts are on icons for things that are emotionally charged. In academic cartography the tendency may be to avoid using sensitive icons and instead use a generic point. If it has to be graphically represented, you use something very generic. But I'm wondering what your thoughts are. Would you use an icon for the location of an abduction or rape, of example?

Patrick: That's the thing—should we really be that specific? Do we need an icon for “rape”? How often are my users going to read a map that's

going to pinpoint these areas? And by pinpointing these areas, will we need to graphically make the distinction between abduction, child abduction, rape, torture, etc.?

With such crime maps or data-influenced maps, there is often going to be a supporting descriptive legend or some other component to which we are going to apply more information. Users will have other ways to get the finer details: the time at which the offence occurred, for example. Because these icons exist on the map to pinpoint location, they don't need to be overthought. There is no problem with using a dot on a map.

Tim: **Sure. Do you ever find yourself falling back on simple dots when you're stuck on a design?**

Patrick: Yes. Early in 2011, we were struck by floods in Queensland, Australia and earthquakes in Christchurch, New Zealand, and yet more earthquakes and a disastrous tsunami in Japan. In helping create the disaster maps for these events, I tried hard not to be too literal on everything. I didn't want to end up with a map that was trying to express so much that you couldn't see the forest for the trees.

With the example of Japan, it was really, really important to try and distinguish tsunami-affected areas from radiation-affected and earthquake-ravaged areas. But I wasn't going to go far beyond that. So create a category that talks about the climatic and cataclysmic impact of those three things. But again, don't create radically complex icons that represent the different levels of severity of radiation. It's good to use the same radiation icon and put a number next to it, or to change the size of the icon, but not create a different series of uniquely different radiation icons.

What I did for the earthquakes (and even other disasters) was similar. I created epicenters that looked like targets. The idea of the target is a very impactful one. It's one that we are familiar with from our formative years, from the age of three or four. We use it as a target, like pinning a tail on a donkey, when we're playing video games, and things like that. So the target is to me one of the most simple, and iconic, and easily recognizable things.

Tim: **I am always impressed, whether in Madison, Wisconsin or New York, New York, by how much information is on Google Maps. The addition of 3D buildings is impressive in Google Maps for mobile...**

Patrick: Did you find it helpful?

Tim: **I did use it once to determine the name of a building while looking across Manhattan at a unique roof. My memory failed me, but**

Google Maps had the answer. So in that way, the 3D was helpful. But as a default reference, it may be distracting.

Patrick: That's one of the biggest challenges for any mapmaker: finding the happy balance between attention and distraction. When a label appears versus not appearing is actually a very important one as well. Because we have so many other information types, neighborhood names, suburb names, street labels, street names, and these landmark icons to deal with.

So my engineering colleagues judiciously and constantly tweak these priority formulas, trying to see how we best show the right information at the right time. And on Android and on Google Maps in WebGL, you'll notice the difference—the labels actually appear quite dynamically. The map is no longer static at any zoom level.

Tim: Do you ever get oddball feedback on your icons?

Patrick: No, to be honest, I'm always expecting a ton, always expecting a deluge of feedback, especially on the religious icons, especially on just naturally misused icons. For example, stadiums in Canada that have been identified as baseball stadiums when they're actually hockey arenas.

But that's because the data classifications of certain buildings and areas may be poor, and we're continuously trying to fix that.

I think the effort to achieve absolute currency and absolute accuracy is a challenging one, because the city, the land, the earth, is always changing. Places plotted by publishers of maps change right after the maps are published. A new map is history a moment ago. As mapmakers, are we in a design industry, a design into science, where we have opportunity to make mistakes and be forgiven for them?

Tim: Sometimes you're blamed though, right? I feel like this is also an era where users are too trusting. Could they follow your map and make mistakes?

Patrick: That was the interesting point of our crisis maps during the earthquakes and floods, by the way—knowing that these state and governmental organizations were relying on our maps to send emergency vehicles out to various locations. They wanted the maps published as quickly as possible. The rapid timing was astonishing.

But again, we do provide that information with the very clear caveat that it is updated every so often and it is important to contact your authorities if you plan on driving through such a catastrophe. During an emergency, people need to know that—yes, we want to help people, but we don't want to inadvertently misguide them.

Tim: One last question—what is your favorite part of your job?

Patrick: That's a real tough one. I have to say, I enjoy the icon design. Map design is fun, but it's significantly more massive in terms of its information breadth and depth, conventions, stakeholders, engineers, testing and so on.

I think my favorite part in one word is the “variety.” My job isn't just icon design. It isn't just cartographic design. It involves just pure user experience design. Like, how are people going to use the map to find more information about a place? What brings them to it? What takes them out of it? How are they going to make comments about that place? How are they going to share that place? My job touches on so many different design disciplines and information disciplines. For me, that's the best part of it all.

Tim: Great. Well, thank you again, Patrick! We look forward to seeing what's next for you and Google Maps.

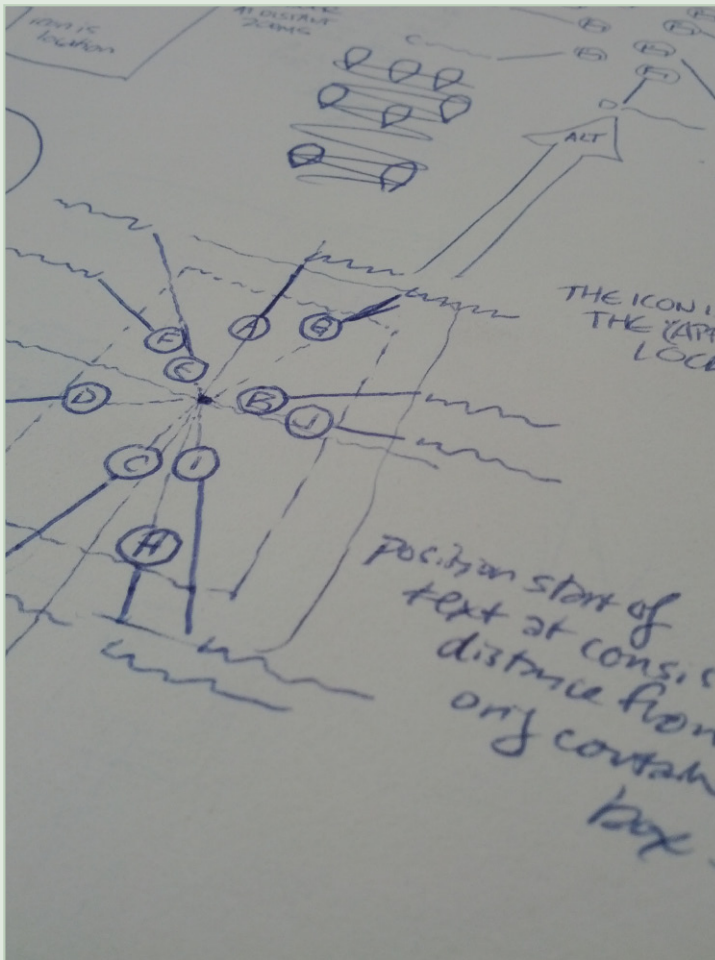


Figure 4. Sketches