English naming tends to focus more on the biographical. The well-known fixation of English place names on pioneers, explorers, and elites is evident in a variety of names honouring Euro-American figures in local topographies.

Each of the 11 regional sections of this book includes boxes or separate sections that highlight stories provided by key informants, usually elders. For example, a story called "Returning Home: The Odyssey of the Kaach.ádi" (p. 128) contains 36 named geographic referents forming a spine along which the narrative is guided. The narrative reads almost like a creation myth, but it is factual, tracing with the aid of a map the path of the storyteller's ancestors: Johnny Jackson tells of the "big flood" that forced his ancestors to move inland and how, with the receding of the flood, there was a strong urge to reclaim former homes along the coast. The return migration involved ancestral movement across the land to areas well known for providing shelter or suitable conditions for harvesting, gathering, and processing food.

Intergenerational aspects of place-names come to the fore as, repeatedly, stories associated with various clans form in abundance around various clan activities. The result is a differentiation of the landscape around those clans, each of which trace their lineage, through place-based narratives, back to the time of the big flood mentioned by Johnny Jackson and other elders. But place names recounted in this way are useful beyond compiling a record of historical occupancy. They also trace physical changes in the land itself. Thornton notes that "Sitkoh Bay is an excellent example of how Tlingit place names serve as linguistic artefacts on the land, providing important clues about the natural and social history of a particular landscape" (p. 111). In terms of natural history, for example, the name *Sitkoh Bay* refers to glaciers that do not presently exist in its vicinity, pointing to aspects of the "Little Ice Age" contained in Tlingit narratives and in the place names themselves.

The black-and-white photos in this volume focus mainly on artefacts that represent myths associated with certain places; on elders responsible for creating both linguistic and material artefacts for representing and mapping intergenerational aspects of place; and on the actual places referred to by the names themselves. Their subjects include robes, masks, totem poles, fish traps, elders (individually and in groups), and landscapes that often include both mountains and coastlines. These photos relate to the texts and maps in an entirely complementary and innovative way, relying on a cross-referencing system that is impeccable throughout.

This book includes only a minimal number of non-hill-shade-style maps, one of which makes reference to a Web site hosting a database of names. A rather austere cartographic style relies on greyscale terrain models that serve, in a way, to mask the technical sophistication that must have gone into the creation of this atlas. The presence of the Web site adds a neo-geographical "weight" and scholarly rigour to a project whose anthropological credentials are unimpeachable. The creators of this impressive volume have obviously taken GIScience seriously, as is evident the way in which toponymic, cartographic, and GIS design principles are given equal consideration and weight.

Haa Léelk'w Hás Aaní Saax'ú / Our Grandparents Names on the Land is agenda setting, not in terms of technical aspects of cartography and GIS but in its incorporation of indigenous knowledge into discourses and practices of cartography and GIS. This book sets an important agenda on entirely different terms from those currently associated with critical cartography, GIS, and geoweb research, which remains, for the most part, focused on device- and software-driven means of interacting with space and naming place. Names for places with intergenerational-scale impact generate meaning in part and precisely through a longevity that, in neo-geography, remains far from proven. The amount we can learn about place and space through of geo-tagging, for example, is extremely limited. While political fads and fashions in the geoweb world come and go, the indigenous geoweb matters more than ever and continues to grow beneath, beside, and around its more ephemeral "neophyte" and abundantly "tagged" cousin, which makes its way in the world primarily through a dependence on the formalities of code.

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THE BIG ATLAS OF LA POOLS / Benedikt Groß and Joseph K. Lee. London: self-published, 2013. Pp. 5,822 (unpaginated), 74 vols.; illus. (147 maps, 43,123 drawings, photographs); $8 \times 11.25''$. No ISBN (paper). Available from http://benedikt-gross.de/log/2013/06/the-big-atlas-of-la-pools/.

It was a big year for swimming pools, was 2013. In Nice the Été pour Matisse featured not only the Musée Matisse's new ceramic realization of the artist's paper cutout *La Piscine* – in the permanent collection of New York's Museum of Modern Art – but an exhibition, À propos de piscines, at the Musée d'Archéologie's Cimiez site near the Roman baths. There, along with Bill Viola's *The Reflecting Pool*, the museum played portions of *A Bigger Splash*, Jack Hazan's pool-filled movie about David Hockney, the artist whose swimming-pool obsession climaxed with his 1978 suite *Paper Pools* (pools he made with pressed colour-paper pulp). The year also saw the publication of Elizabeth Tonnard's *One Swimming Pool*, a nine-volume, 3164-page book whose pages can be detached and reassembled into a 21×21-foot version of one of the pools from Ed Ruscha's 1968 volume *Nine Swimming Pools and a Broken Glass* (which consisted of nine photographs of

individual Los Angeles and Las Vegas swimming pools and one photograph of a broken glass). This was also the year Imelda Moise and four others published "Geographic Assessment of Unattended Swimming Pools in Post-Katrina New Orleans, 2006–2008," in the *Annals of the Association of American Geographers*. Their paper, which was concerned with the pools as risks for vector-borne diseases, included three yearly maps of unattended pools and two maps of unattended pool analysis.

But 2013 was also the year Benedikt Groß and Joseph K. Lee published their amazing *The Big Atlas of LA Pools*. Altogether the atlas runs to 74 volumes; although several copies of the first volume, *Process and Overview*, have been printed, only one hard copy of the full work exists. Amusingly, the atlas reflects aspects of each of the other swimming-pool projects that surfaced during the year. In fact, while the *Big Atlas* is an expert and crowd-sourced analysis of National Agriculture Imagery Program orthoimagery, it is also, as the authors admit, "rather an art project," one that has plenty in common with the work of Matisse, especially his very late paper collages but also his drawings; Hockney, particularly given his fascination with the latest technology; Tonnard, in the sheer massiveness of the project; and Ruscha, for the atlas could easily be called *43,123 Swimming Pools*. With the *Annals* authors the atlas shares an interest in a city's entire population of pools (there were 7,170 in New Orleans).

If perhaps "rather an art project," the atlas is primarily "about the process of mapping and map-making in the contemporary age of big data, open data, crowdsourcing, and the citizen scientist." Crowd-sourcing was a particular fascination: Groß and Lee exploited clipping farms in India and Amazon's Mechanical Turk to address the formidable tasks of extracting and validating the pools. They began with the purchase of true- and false-colour orthoimagery from the National Agricultural Imagery Program. This they shipped to the Indian clipping factory farms, where they paid US$0.003 per pool for workers to isolate the pools and trace their bezier paths. Having reviewed and, where necessary, corrected this work, they resubmitted the imagery to the factories for reprocessing, and then again performed their quality check.

After passing this rigorous inspection, the geopositions (latitude and longitude) of each pool were viewed against higher-resolution (~1 ft) Bing maps as provided by Microsoft. The authors then submitted these high-resolution images to Amazon Mechanical Turk – a crowd-sourcing Internet marketplace that lets users assign tasks to people (again for next to nothing per task) to do things computers can't – and asked the workers to visually check whether a feature might be a pool (blue water) or not (blue roof); this was done twice to ensure that the geolocated features were accurately classified. The authors manually resolved any conflicts in the resulting data set and, finally, used Google Geocoder to get each pool's address.

Next Groß and Lee coordinated their database of 43,123 pools with the Los Angeles County Assessor's database of lot parcel boundaries, land use, property values, and so on to produce the files for the 73 catalogue volumes of the atlas. Each page of these volumes can display up to nine pools with a full-colour photo, an ID number, the pool's latitude and longitude, the number of gallons the pool evaporates each year, the parcel's dollar value, the construction date of the primary structure, and the relevant zoning code. The authors ran all these data against the *Los Angeles Times* neighbourhood boundaries data set to sort the pools into neighbourhoods. Because they were unable to secure orthoimagery for all of Los Angeles – which *is* available now – they are shy the far northern neighbourhoods (including all those in the San Fernando Valley) and the eastern neighbourhoods, although they do have parts of 24 of these (e.g., Glendale and Eagle Rock).

That's the atlas.

But Groß and Lee also ran their data against those provided by eightmaps.com, a (now defunct) Web site that posted to Google maps the locations of donors to California's anti-gay-marriage Proposition 8 campaign; the Megan's Law Sex Offender List, which gives the addresses and crimes of registered sex offenders; and the crime data set maintained by the Los Angeles County Sheriff's Department. These resulted in three of the maps in the *Process and Overview* volume.

And what an interesting volume it is!

Starting with the cover: this is, in white on blue, an overlay of the outlines of all 43,123 Los Angeles pools, normalized to centres and longest axis. The amazing image looks like the cocoon of a silkworm – except for the small blue centre – with the density of strands decreasing appropriately with distance from the solid white core. Within these covers the first image is a photomosaic of Groß and Lee's Los Angeles, and overleaf, a map of the same area with each pool picked out. Amidst the swarm of pinpricks, Beverley Hills, Hancock Park, and a few other neighbourhoods stick out by virtue of the density and regularity of their patterning. A three-page introduction laying out Groß and Lee's methods is followed by a two-page spread they call "LA Sorted" – another arresting image in which they've classified each pixel in the source imagery, displayed on the left page, into the four categories displayed on the right: sea, developed areas, pools, and vegetation. Within these, the pixels have been arranged by their greyscale value, and so appear in three broad bands of shaded grey, with a narrow strip of blue. Then follows a two-page spread of bar graphs showing the number of pools in each neighbourhood (or the part of the neighbourhood covered by Groß and Lee's orthoimagery), which lays out mammoth inequities: for example, Beverly Hills,

with its 34,000 inhabitants, has 2481 pools, while Watts, with its 37,000 inhabitants, has none.

The next section, 140 pages of it, devotes a page to each neighbourhood with at least one pool, on which the outlines of all its pools have been overlaid. The first two pages exemplify the graphic richness of this section. The first neighbourhood, Adams-Normandie – which lies to the west of the University of Southern California – has four pools, whose outlines look like an abstraction by Ben Nicholson. Across from it, Alhambra, with its 552 pools – in the San Gabriel Valley – is a silk cocoon unravelling into sharp geometries. Although drawn with Photoshop's pen tool, these pages bring to mind the collages of Matisse, the drawings of Hockney.

The following six pages pit the pools against crimes whose geo-location fell on a pool's parcel boundary; the addresses of sex offenders (a mere handful); and the addresses of those who financially supported Proposition 8. These pages are surprisingly uninteresting.

The concluding 140 pages map the pools by neighbourhood, and so here we can see where the four pools in Adams-Normandie are located, the 552 pools of Alhambra, and the 2481 pools of Beverly Hills. Without pools, Watts, of course, is not included. Each of these maps has its own attractions, speaking of history, street layout, class friction, ethnicity, and the other sources of variation that render Los Angeles so endlessly fascinating. If you know the city, these pages are absorbing, but even if you don't, they cast a spell.

There are those who will deride the whole project as a species of insanity, but doubtless they would similarly dismiss the work of Matisse, Viola, Hockney, Tonnard, and Ruscha, or, if not the work of all of these, then that of most of them. This suggests that ultimately *The Big Atlas of LA Pools* is, despite its exploitation of big data, open data, crowd-sourcing, and meticulous assembly, a work of art. I think it is. What it most connects with, for me, is On Kawara's *I Went*, the 12-volume, 4740-page collection of maps documenting his daily movements from June 1, 1968, to September 17, 1979. Here what at first appeared an excess of conceptual obsessiveness came to seem the necessary caution required to seriously attend to so ordinary, and therefore so readily overlooked, a reality as our daily motion in space–time. Groß and Lee's 75-volume atlas, with its 5822 pages, may be what it takes to focus our attention on the phenomenon of pools in what is, after all, a desert. I'll bet they could write some code to total the amount of water evaporated from those pools every year: *that* would be telling!

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 Cartographica 49:1, 2014, pp. 78–80 doi:10.3138/carto.49.1.rev03