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# DESIGN STRATEGIES FOR SERENDIPITY AND HOW THEY MIGHT FAIL | MIT CENTER FOR CIVIC MEDIA



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Catherine D'Ignazio is the person behind that really cute baby. She is an Assistant Professor of Data Visualization and Civic Media at Emerson College who investigates how data visualization, technology and new forms of storytelling can be used for civic engagement.

Professor D'Ignazio has conducted research on geographic bias in the news media, developed custom software to geolocate news articles and designed an application, "Terra Incognita", to promote global news discovery. She is working on sensor journalism around water quality with PublicLab, data literacy projects and various community-educational partnerships with her journalism students. Notably, she co-organized a hackathon at the MIT Media Lab called "The Make the Breast Pump Not Suck!" Hackathon.

Her art and design projects have won awards from the Tanne Foundation, Turbulence.org, the LEF Foundation, and Dream It, Code It, Win It. In 2009, she was a finalist for the Foster Prize at the ICA Boston. Her work has been exhibited at the Eyebeam Center for Art & Technology, Museo d'Antiochia of Medellin, and the Venice Biennial.

## DESIGN STRATEGIES FOR SERENDIPITY AND HOW THEY MIGHT FAIL

Submitted by [kanarinka](#) on June 27, 2014 - 12:46pm

**Terra Incognita: 1000 Cities of the World**

**Cairo, Egypt**  
Capital city, pop. 7,734,614

**Fortune favors the brave**

Top Reader of Cairo: nihala (8)  
Top Recommender of Cairo: kanarinka - YOU! (1)

**5 Things to Read About Cairo (24)**

- British reporters deny 'aiding terrorists' in work for Al Jazeera in Egypt | World news | theguardian.com
- Ancient Egypt had cheezburger: We've always been obsessed with cats - Salon.com
- First woman to head a political party in Egypt says it proves the revolution has changed attitudes | World news | The Observer
- Alexandria police investigate lives of three slaying victims for possible links - The Washington Post
- MS. MARVEL: Why does Marvel's latest book succeed? Because its new Muslim teen superhero is 'sweet, conflicted and immensely relatable' - Comic Riffs - The Washington Post

**What You Read About Cairo (2)**

- Traveling While Female has drawbacks, but are they so different from at home? | Jill Filipovic | Comment is free | theguardian.com
- Netizen Report: Egyptian Activists To Be Tried Under Anti-Protest

You have read about 138 cities. Wanna go somewhere else?

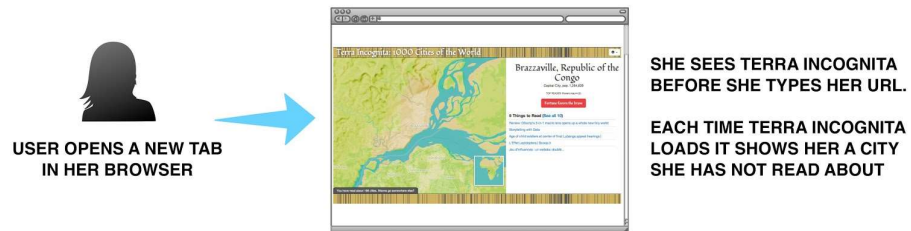
[Terra Incognita: 1000 Cities of the World](#) is a global news recommendation system and game that invites readers to explore news about the 1000 most important cities in the world (some of which we guarantee you have never heard of).

The central design challenge of Terra Incognita is how to incentivize wandering over "what you want" in an everyday online situation. For a detailed discussion of why this is important and what the risks of [homophily](#) and personalization algorithms are for the networked public sphere, check out Ethan Zuckerman's book [Rewire: Digital Cosmopolitans in the Age of Connection](#). At the end of the book, Ethan calls for "engineering serendipity", an intriguing and poetic concept that I have taken on as a challenge in the past year.

In Terra Incognita, I'm using a number of design strategies to try to make the conditions right for serendipitous noticing and discovery of global news that the user is not seeking. These strategies should be seen as orientation points for making decisions during development, not as foregone successes. I will be discussing the successes and failures of these strategies in my thesis once I have collected all the data from my user study.

Professor D'Ignazio is a Fellow at the Emerson Engagement Lab and a Research Affiliate at (and alumna of) the MIT Center for Civic Media.

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## Intervention and Repetition: Rhythm of Attention

One of Terra Incognita's main features is that it operates as an intervention into a user's everyday browsing behavior, giving her many opportunities everyday to explore. When the user opens a new browser tab, Terra Incognita gives her news recommendations about a city she has never read about. This repetition is deliberate and was designed to function in a couple of ways. First, when a user is opening a new Tab it is because she is cognitively shifting into a new task. It is a transition or a moment of micro-attention shifting where the user is oriented towards a future action rather than focused on the task at hand. Thus, there is greater potential for interruption of her task and diversion into new information.

This choice is contrasted with the difference of, say, sending someone a push notification every 5 minutes to explore a new city. Or a once-a-day email with an invitation to explore. Each of these choices would have had its own affordances and potential limitations.

The repetition of showing a new city on every new Tab also gives the user multiple opportunities for exploration. Each new city is a new invitation and a new micro-learning experience even if the user only reads the city name and glances at the map. At the same time, the repetition of showing up on every new Tab also makes the user interface experience mundane. The browser user gets used to Terra Incognita's repeated invitations. They feel safe, predictable and ignorable, something I would argue is a feature, not a bug (see the below section on *highlighting harmlessness*).

The risk of having chosen a repetitive, interventionist design strategy for diverting the user's attention is that users might feel like their browser is colonized by a foreign invader, that the repeated invitations to explore will induce guilt if the user doesn't feel like she can follow up on them or that they will even create behaviors to resist the browser extension. For example, I have noticed in myself the phenomenon of "New Tab Avoidance" so that I don't have to engage with Terra Incognita.

## Prioritize Exploration over Personalization

Rather than compiling exhaustive and intrusive information on "who the user is" so that we can predict their tastes and exact state of mind at any given point in time, Terra Incognita positions all users as explorers of news about global cities. The title "Terra Incognita" comes from maps during the Age of Exploration. The use of zoomed-in maps as the key visual element on the page and the choice of display font were made to reinforce the metaphor of exploration.

This is not to say that some amount of personalization might not be helpful. At the moment, the risks of prioritizing exploration are that the scope of the information is very broad, only being organized by geography. Thus, the news recommendations that people see may not be perceived as interesting enough to click on.

## Highlight Harmlessness and Triviality: You Run No Risks That Threaten Who You Are

Getting lost is a concept that sounds romantic until you are actually lost and either terrified, baffled or bored. This is why wandering needs to be mitigated with a light touch. We must feel safe in order to generate new world-views and we must be open to and have time for new information in order to perceive it. This is where entertainment, humor and games are especially useful. Framing a new experience as potentially challenging to a person's previously held ideas ("In this Extremely Important Deliberative Online System you will encounter people with differing viewpoints") is very different from framing a new experience as extremely trivial ("This experience will be a fun and meaningless diversion from your Real Life and ultimately does not matter all that much").

Terra Incognita has been designed with triviality in mind. It is a lightweight, mostly ignorable intervention. The stakes are low and thus the potential for disarming the viewer with new information is higher. Because of the rhythm of attention that it structures - opening with every new tab - it

becomes mundane and normalized into the everyday behavior of the user. This balance between novelty and normalization is very important.

The risk of pursuing triviality and mundanity as desired features is, of course, that the user will completely ignore the application and deem its invitations to explore meaningless.

## Visual & Spatial Seduction: Address User as Eyes and Body, Not Just a Disembodied Head

In both civic media and software engineering, we make the mistake too often of imagining end users as rational repositories of information, like walking databases that happen to have outer coverings of skin and hair. In civic media, this is the "raising awareness" strategy that goes something like, "If people only had better information about this problem then it would get fixed". In software engineering, it's the privileging of textual information over all other forms.



Terra Incognita tries, within the limitations of the screen and browser (which are significant), to pique the user's curiosity with visual and spatial information. The key visual element of Terra Incognita is a large map on the left-hand side of the screen. English-speaking users browse left to right, so the map is most likely the first visual element apparent to them. The map is zoomed in so that city streets are visible. This is also a deliberate choice so as to position the user less as a disembodied eye viewing a global, abstract map (which [Donna Haraway calls the "God trick"](#) and [Michel DeCerteau calls the fiction of "the celestial eye"](#)) and position her closer to the ground, giving her visual and spatial details about the architecture of cities that she may never otherwise experience. In the end, the choice of deploying visual and spatial information first is about anchoring the user's body closer to the concrete reality of the city than is possible with textual choices and news article titles.

The risks of pursuing a visual and spatial strategy are that people learn and process information differently and some may be drawn less to these dimensions of the experience. Additionally, maps are ultimately unsatisfying for communicating the lived experience of place. They may pique our curiosity but also serve to distance and abstract us from the richness and complexity of experience on the ground. Perhaps there are better ways than maps to plunge the user into a new city.

## Restrict Choice

Even when there are tens or hundreds of recommendations in the system about a particular city, Terra Incognita purposefully limits how many news stories the user sees to five and additionally provides one large red button to travel to a serendipitous news recommendation (à la the Google "I'm feeling lucky" button). While choice in software systems and in market economies is often and [erroneously conflated with being more democratic](#), each new choice imposes the additional cognitive labor of discerning, comparing and choosing on the part of the user. Sometimes restricting choice is the fastest pathway towards serendipitous information, as Ethan Zuckerman wrote about in [his response to Why Audio Never Goes Viral](#). Overwhelming users with choices in a serendipitous system makes it more likely they will determine that they don't have time to engage with the tool.

The risks of restricting choice in relation to news recommendations in Terra Incognita are that the five choices presented to the user will not include something interesting enough to click on. And five choices might even be too many! But restricting choice to only the big red button means that whatever it delivers better be pretty damn good (which Terra Incognita's recommendations are not yet) or you will quickly teach people that their effort is not worth it.

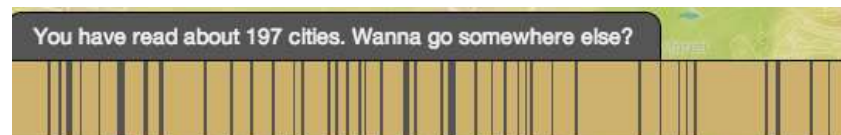
## Favor Curiosity Over Guilt

Finally, I have been trying to carefully navigate the looming shadow of the quantified self over this field of work. The quantified self approach to "healthier" or desired outcomes uses personal data collection and analytics about past behavior to inform present action. So the mobile app [Loselt!](#) helps people track their meals and meet daily calorie intake goals so they can reach a weight goal. Personal data can be combined with social data in applications like the [FitBit](#) system where users compete with friends for how many steps they have taken that day.

There are prototype applications like [Newstrition](#) and [Slimformation](#) that have used this kind of tracking and goal-setting in relationship to the news. Like their names suggest they are based around nutritional metaphors applied to news reading where some news is "good" and some news is "junk". The concept of applying normative judgements to newsreading feels intuitive since many of us do that already, but it completely misses the point on the real importance of the so-called "junk". For me, reading [Carolyn Hax's advice column](#) or about [Kim Kardashian in Us! Weekly](#) is a precious pre-bed ritual in a daily routine that is otherwise submitted to extreme the efficiency and productivity of trying to keep small people alive while maintaining a career. Whether your junk is gossip, sports, fashion photos or artisanal guitar blogs, junk is fun, diverting, safe and predictably about OPP (Other People's Problems (and the other OPP, too)).

Junk binds us together and gives us things to talk about, bond over, and judge others about. I love judging the Kardashians - they are just so materialistic and have so many leopard print clothes! North is so cute but what a dumb name! But what we also might consider judging is a culture that submits every micromoment of the day to a ruthless criteria of self-improvement, functionality and efficiency. You might call this the Tyranny of Extreme Utility which seems to stand at the opposite end of the spectrum from serendipity. My inclination in that kind of oppressive environment would be towards more junk, way more naps and insurrection through extreme laziness.

For the first iteration of Terra Incognita, I have purposefully avoided applying these kinds of nutritional metaphors to the user's personal geography of newsreading, mainly because I am skeptical of the idea that reading about more cities is "better" and did not want the system to indirectly communicate that as a goal. I also did not want to shame or guilt the user into clicking on articles. The aspiration is to favor curiosity, spontaneity and wandering over guilt, goal-setting and obligation.



The only indication of your personal analytics comes through your city count which increments as you read about more of the 1000 cities in Terra Incognita. The user who reads or recommends the most articles about a particular city is also recognized on that city's page. Both of these have lesser importance in the UI than the city maps and news stories. The interface is oriented towards the future (where you might go) rather than on the past (where you have been).

As you can tell by the length of this section, I feel conflicted about this choice. Ultimately it may come down to personal style. Perhaps there is a gender dimension to this? I think it is worth testing how much of an effect showing personal data analytics would have on end users versus the more open-ended exploration that I am attempting to favor.

## Engineering Serendipity is Hard, Counter-Intuitive and Worthwhile

In this blog post I've outlined some of the specific design strategies that I have employed to create one specific, serendipitous news recommendation application called [Terra Incognita: 1000 Cities of the World](#).

The challenges for engineering serendipity for news applications are less technical than they are situational. When [our scarcest resource is attention](#), how do you invite people to wander off-task, explore potentially useless things, and ultimately discover and assimilate new information about remote places in the world? The challenge is really in engineering the time and space to make uselessness and triviality matter once again to web browsing. [Reddit's doing a good job](#). But what about news?

### References:

[Install Terra Incognita](#)

[Terra Incognita Website](#)

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