Round N Around is a collaborative research project between Het Nieuwe Instituut, the University of Applied Sciences in Amsterdam (HVA citizen data lab) and the University of São Paulo. Curated by Gisela Domschke and with the support of local biker communities, the project aims to explore the technologies developed for the measurement and analysis of data on the user experience of bike paths in the city of São Paulo. Cyclists, researchers and public managers contributed to an ecology and encourage the use of bike lanes in the city.
A collaborative action for a bikeable São Paulo

Uma ação colaborativa por uma São Paulo ciclável
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Staging data driven research for urban activation
Gabriele Colombo

Gabriele Colombo is a designer and PhD candidate at DensityDesign, a research lab of Politecnico di Milano. His research interests include data and information visualisation, interface design and digital methods. In his PhD project, he explores design strategies to analyze pictorial content in the context of online mapping. Gabriele is a long-time collaborator with the Amsterdam University of Applied Sciences’ Citizen Data Lab.

Pesquisas orientadas por dados para ativação urbana
Gabriele Colombo

Gabriele Colombo é designer e pós-doutorando pelo DensityDesign, um laboratório de pesquisa da Politecnico di Milano. Seus interesses na área de pesquisa incluem visualização de dados e informações, design de interfaces e métodos digitais. No seu projeto de PhD, ele explora estratégias de design para analisar conteúdos pictóricos no contexto de mapeamento online. Gabriele é há muito tempo colaborador do Citizen Data Lab da Universidade de Ciências Aplicadas de Amsterdã.
From digital traces left by social interactions online to official datasets provided by municipalities, data is a new lens through which we can look at cities. Collecting and analyzing data coming from various sources can provide novel and useful insights into urban dynamics. This can help us understand urban processes better. Which routes do people prefer on their bikes? What routes do they avoid? How long and what distances are people willing to bike? What time are bike routes used most intensely? Data collected through cycling apps or from mobile phone operators could reveal these kind of insights.

Secondly, visualizations of these data can also guide us into action. For instance, a map of most popular bike routes could reveal a lack of connections between these routes, and help policy makers when they’re deciding which new bike routes they want to lay out in the city. Maps can become ‘action maps’: in that case they are not just representing the city as it is right now, but opening up a framework for debate and urban activation. In addition, ‘issue publics’ can form around these maps, consisting of a broad variety of citizens that have taken an interest in the theme that’s represented. For instance, various blogposts or social network conversations could link to the map, staging a conversation about the best way to develop the cycling lane network further. Likewise, these maps could be the focal point of a conversation in offline workshops aimed at furthering the discussion on biking in São Paulo. The map then is not so much the final product, but rather ‘a conversation piece’ that provides particular insights and provokes further discussion about them.

To get to that point, research findings need to be staged through an act of design. The design of cultural artifacts – static or interactive maps, digital platforms, exhibition settings – able to present issues in a clear and compelling way, is crucial to the process of public engagement. The map then is not exactly the final product, but rather ‘a conversation piece’ that provokes a deeper discussion about them.

Indo direto ao ponto, as descobertas das pesquisas precisam ser organizadas por meio de um ato de design. O design de artefatos – estáticos ou interativos, plataformas digitais, exibições – que podem apresentar questões de maneira clara e persuasiva, é fundamental para o processo de participação pública.
formation. In this article three different design strategies to do this will be outlined: designing maps as visual interfaces for complex issues (Venturini 2012); materialising abstract issues through visual imagery (Tactical Tech 2013); designing time-based and interactive visualisations to provide different levels of insight (Nagel et al 2016).

Maps as visual interfaces for complex issues

Observing social issues using digital traces online involves a process in which collected data need to be rendered into accessible artifacts, able to provide legible visualizations of complex phenomena. In the contest of controversy mapping, the cartographic metaphor is often recalled to address the nature of such maps: diagrams and data visualizations are used as navigational tools, to guide both researchers and users into the exploration of a specific issue (Venturini 2012). In the project Knowledge Mile Atlas from the Citizen Data Lab (citizendatalab.com), Digital Methods and data visualization were used for the mapping and activation of an urban area in the city of Amsterdam.

The Knowledge Mile is the name used to identify a number of streets cutting through different neighborhoods, from the city center to the suburbs in the South. It has been used as a local framework for bringing together citizens, research centers and universities active in the area. In order to provide a baseline to be used in participatory design sessions, a mapping of the important places on the streets was undertaken, using data from different sources (Instagram, Google Panoramio, Foursquare, a database of registered companies from the Chamber of Commerce of Amsterdam). One of the maps produced is a visualisation of all companies registered in the area, plotted on a geographical layer. On top of this mapping, an additional layer of information is added: a network visualisation of those organizations that link to each other online.

Gabriele Colombo
During participatory design workshops, the map is used to provide a framework for discussion, inviting local stakeholders to confront themselves with a visual rendering of the streets. Different actors are invited to assess and evaluate their resonance in the area and their relationship with other organizations. Some actors find themselves to be central in the map (such as the municipality of Amsterdam, biggest node in the network), while others absent or only marginally present. What is seems to be more effective for triggering a conversation in these contexts, is the lack or extreme marginality of specific actors in the map, compared with more prominent ones. The distance between what stakeholders think should be represented in the map and what they found is what triggers speculations and reflections.

Network visualization of companies of the Knowledge Mile, layered on a geographic map of the street. Citizen Data Lab.

Visualização em rede das empresas localizadas na Knowledge Mile, exibidas em camadas em um mapa geográfico das ruas. Citizen Data Lab.
The second strategy is concerned with the enrichment of a previously compiled dataset with photographic imagery. In the book Visualising Information for Advocacy (2013) the collective Tactical Tech describes a number of techniques under the broad term of “elements of visual persuasion”. One of the strategy involves the use of visual footage to “materialise an otherwise abstract, hard-to-imagine problem and its impact”.

The example used to illustrate this strategy is the project Dronestagram (2012), by British artist James Bridle. For almost 3 years, he collects and posts on Instagram satellite images of locations of drone strikes as they occurred. Location and time data are provided by The Bureau of Investigative Journalism, (thebureauinvestigates.com) which at the time reported on drone wars in Pakistan, Yemen and Somalia. The project, in the words of the artist, contributed to turn the compiled database about drone strikes into something “a little more visible, a little closer. A little more real” (Bridle, 2012).

In a similar way, the project Officer Involved (theintercept.co/officer-involved) by designer Josh Bagley (2016), starts from a database on police brutality in the United States, compiled by The Guardian. For each reported death contained in the dataset an image from Google Street View of the location of the killing is extracted and used to build a visual catalogue accessible online. Isolated from the seamless continuum of Google Maps and reorganized as an array of elements, those apparently insignificant places constitute a reminder of the the breadth of the phenomenon, providing at the same time the specificity of each single killing.

The same materialization strategy is applied to the urban context in the project Scandaglio (2016), by the Italian collective Offtopic Lab (www.offtopiclab.com) se comparados àqueles mais proeminentes. A distância entre o que as partes interessadas consideram que deveria ser representado no mapa e o que elas descobriram é o que faz surgirem especulações e reflexões.

Materializando questões abstratas por meio de imagens visuais

A segunda estratégia envolve enriquecer com imagens fotográficas uma base de dados previamente compilada. No livro “Visualising Information for Advocacy” (2013), o coletivo Tactical Tech descreve várias técnicas sob o termo mais amplo “elementos da persuasão visual”. Uma das estratégias envolve o uso da transmissão de imagens visuais para “materializar um problema de outro modo abstrato, difícil de imaginar, e o seu impacto”.

O exemplo usado para ilustrar essa estratégia é o projeto Dronestagram (2012), do artista britânico James Bridle. Há quase três anos, ele coleta e publica no Instagram imagens de satélite de locais onde houve ataques de drones exatamente conforme eles ocorreram. Os dados sobre hora e local são fornecidos pelo grupo de jornalismo investigativo The Bureau of Investigative Journalism, (thebureauinvestigates.com), que na ocasião reportava guerras com drones no Paquistão, Lêmè e Somália. O projeto, nas palavras do artista, contribuiu para transformar a base de dados sobre ataques de drones em algo “um pouco mais visível, um pouco mais próximos, um pouco mais real” (Bridle, 2012).

De forma similar, o projeto Officer Involved (theintercept.co/officer-involved), do designer Josh Bagley (2016), foi iniciado a partir de uma base de dados sobre violência policial nos Estados Unidos, compilada pelo jornal The Guardian. Para cada morte reportada contida na base de dados, uma imagem do Google Street View do local da morte é extraída e usada para construir um catálogo visual acessível online. Isolado do contínuo ininterrupto do Google Maps e reorganizado como uma gama de elementos, aqueles lugares aparentemente insignificantes constituem um lembrete da amplitude do fenômeno, fornecendo ao mesmo tempo dados específicos de cada morte individual.
In this case, Google Street View imagery is used to add a visual layer on a mapping of abandoned areas produced by the municipality of Milan. The timeline feature embedded in Google Street View, which allows to see images of the same place taken in the past by the pervasive photographic mapping undertaken by Google cars all around the world, is repurposed as a visual evidence machine. Scandaglio offers an explorable interface for the monitoring of the evolution of more than 100 locations in the city (empty buildings, abandoned green areas, construction sites). Google Street View imagery provide a layer of materiality, helping to observe city modifications overtime. The platform is presented in public events and used to collect stories around each locations.

A mesma estratégia de materialização é aplicada ao contexto urbano no projeto Scandaglio (2016), do coletivo italiano Offtopic Lab (www.offtopiclab.org). Nesse caso, as imagens do Google Street View são usadas para acrescentar uma camada visual em um mapeamento de áreas abandonadas produzido pelo município de Milão. O recurso de linha do tempo embutido no Google Street View, que permite ver imagens do mesmo lugar feitas no passado pelo permanente mapeamento fotográfico realizado pelos carros da Google no mundo todo, é reutilizado como uma máquina de gerar indícios visuais. O projeto Scandaglio oferece uma interface explorável para monitorar a evolução de mais de cem pontos da cidade (prédios vazios, áreas verdes abandonadas, canteiros de obras). As imagens do Google Street View fornecem uma camada de materialidade, ajudando a observar as modificações ocorridas na cidade ao longo do tempo. A plataforma é apresentada em eventos públicos e usada para coletar histórias em torno de cada local.

Staged analysis to move from interest to insight

Presenting research findings in exhibition settings by means of data visualization demands design decisions aimed at striking a balance between complexity, readability and engagement. The solution proposed by the Urban Complexity Lab is framed as “staged

Encenação de análise para avançar do interesse à percepção

Apresentar as descobertas de pesquisas em espaços de exposição por meio da visualização de dados exige tomar decisões de
analysis” (Nagel et al. 2016). Staging analysis involves the design of increasingly more complex views of the same phenomenon, preparing their appearance in the exhibition in a similar way in which a performance is designed.

In the project City Flows (uclab.fh-potsdam.de/cf), dedicated to comparing bike sharing services in three different cities, interactions patterns and animations are used to guide the user from a simple interest into a more conscious insight on the topic. The exhibition offers different visualisations of a dataset about bike trips during one day in Berlin, London and New York. The user can switch between three main views: a city-wide view of all bike trips, a focus on smaller parts of the city, an analytical view breaking down bike trips by time, direction and other variables. The multiple visualisations provide increasingly more detailed information, moving from what the authors call an “aesthetic experience” to “analytical engagement”. The exhibition, designed in such a way, attempt at creating a “discursive space”, enabling visitors to compare and discuss the visualizations among each others.

References:


Gabriele Colombo
Images from the exhibition “cf. city flows” comparing bike sharing services in three different cities. Urban Complexity Lab (uclab.fh-potsdam.de/cf)

Imagens da exposição “cf. city flows” comparando os serviços de compartilhamento de bicicletas em três cidades diferentes. Urban Complexity Lab (uclab.fh-potsdam.de/cf)
The visualization shows the Facebook space of São Paulo cycling-related pages. Each node of the network represents a page; pages linking each other are connected by a line, therefore being closer in the space. São Paulo cycling space is divided in two main groups. On the right, a cluster of pages that can be identified as “biking as activism”: local associations, advocacy groups and personal blogs promoting the use of bicycle in the urban context. The connection between the community BikeAnjo and the World Bicycle Forum (Foro Mundial de la Bicicleta) works as a bridge for a number of international bike-related actors in top right of the network. The second cluster occupies the left part of network and incorporates mainly “biking as sport” pages: professional companies, outdoor gear shops, professional cycling team pages. At the center of the network, bridging the two communities, the rather big node of Renata Falzoni personal page, pioneer of journalistic bike reporting.

The initial dataset has been compiled by collecting Facebook pages based on a set of queries: [São Paulo Brazil bicycle] - [São Paulo Brazil bike] - [São Paulo SP bicycle] - [São Paulo SP bike]. The initial search returned a list of roughly 100 pages. The dataset has been expanded by crawling pages liked by pages of the initial list. Data has been collected using the Netvizz application, developed by Bernhard Rieder.