

Social Media Neighborhood Guides

A PhD Thesis Proposal by Dan Tasse

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2016-04-28

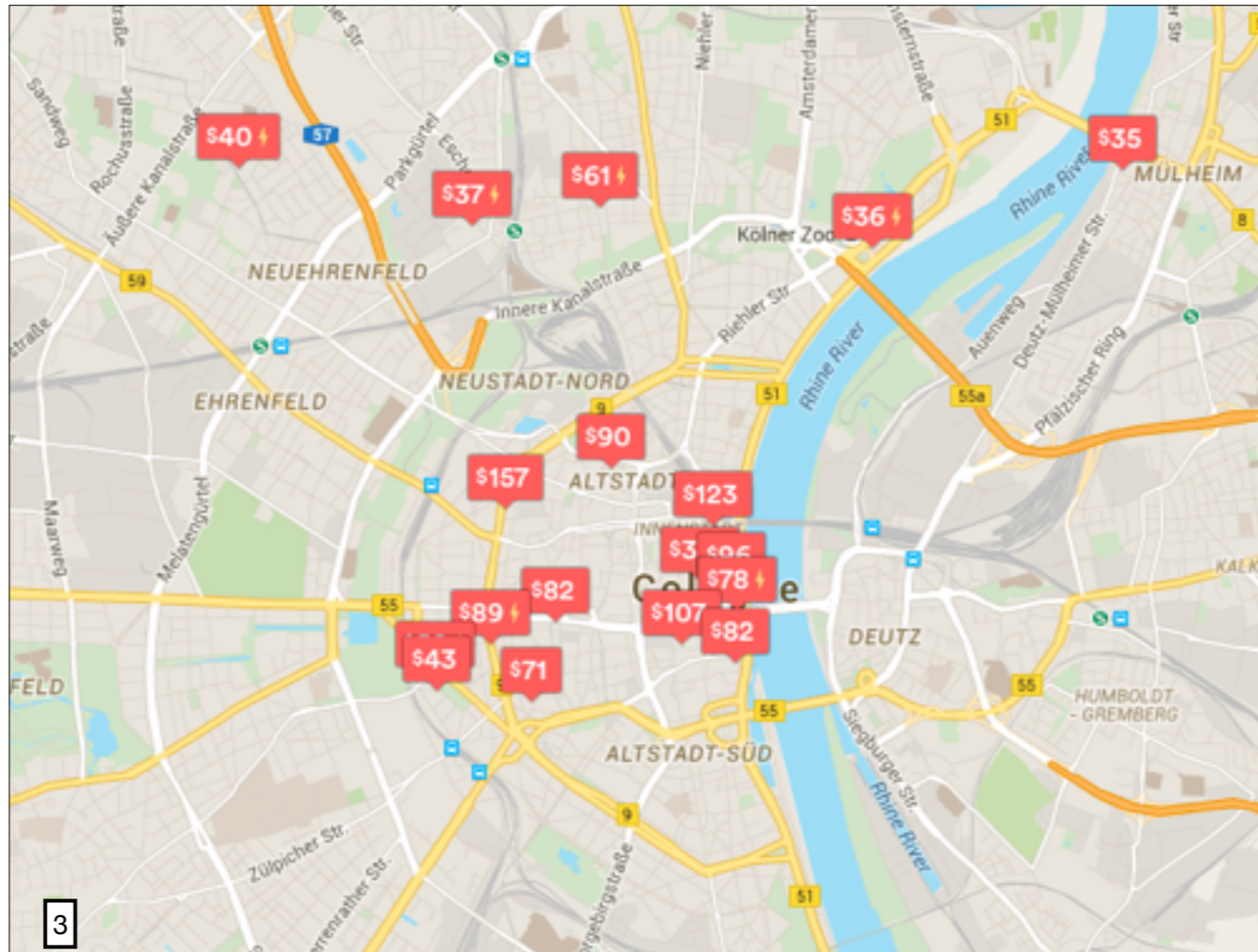
why we need social media neighborhood guides, how I'm going to build them, and what we're going to learn from them.



ICWSM 2016: Cologne, Germany

I'm going to ICWSM, the Int'l Conference of Web and Social Media, in a couple weeks. I went to look for a place to stay. conference hotel

photo from Sainath K M <https://www.flickr.com/photos/sainathkm/4489390640>



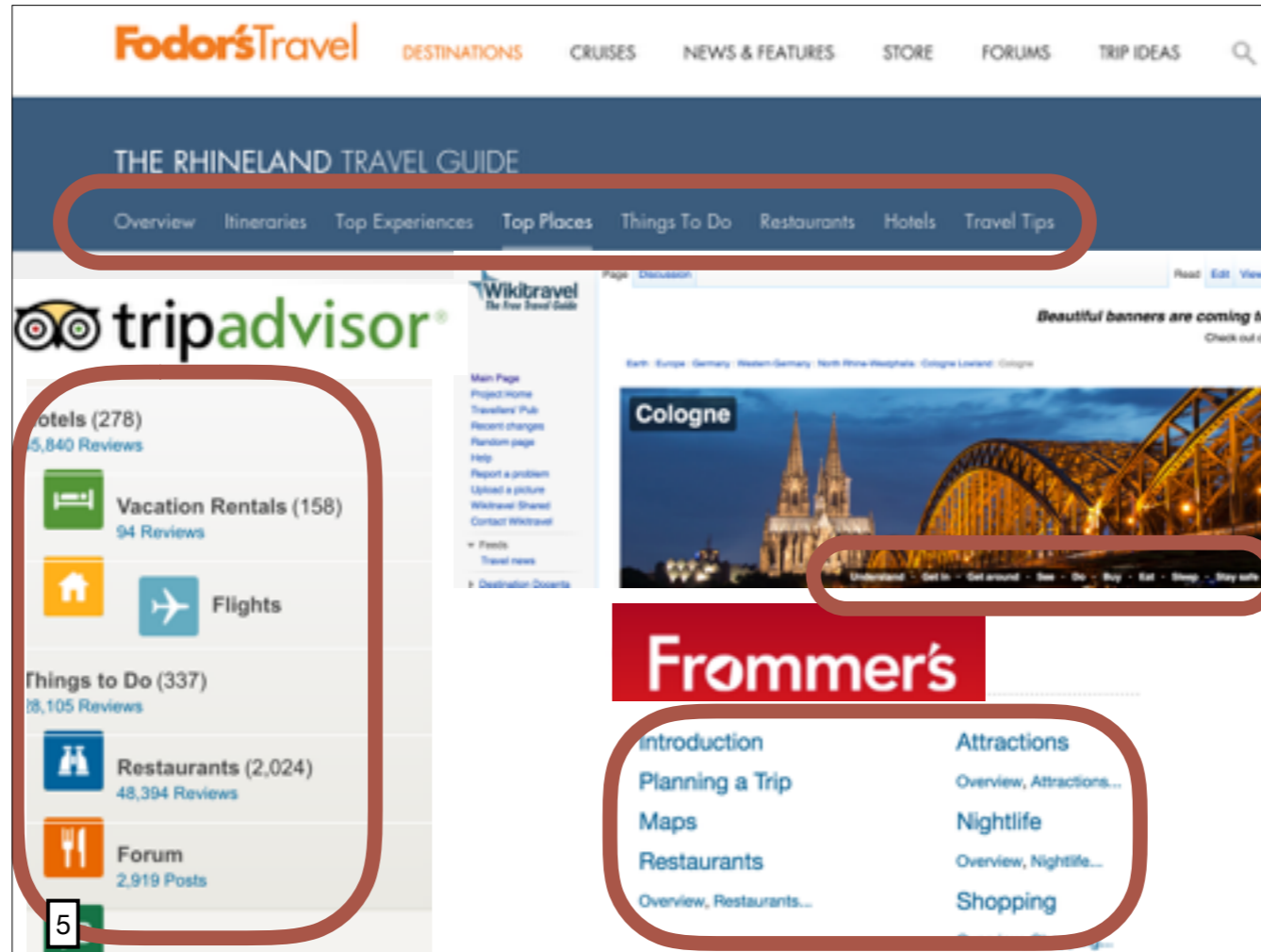
looking for an airbnb... where to start? well, look up travel guide Lonely Planet



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[SIGHTS](#) [HOTELS](#) [RESTAURANTS](#) [SURVIVAL GUIDE](#) [MAP](#) [BOOKS](#) [ADVENTURES](#)

everything is points. Points of places to stay, Points of sights to see, Points of restaurants to eat



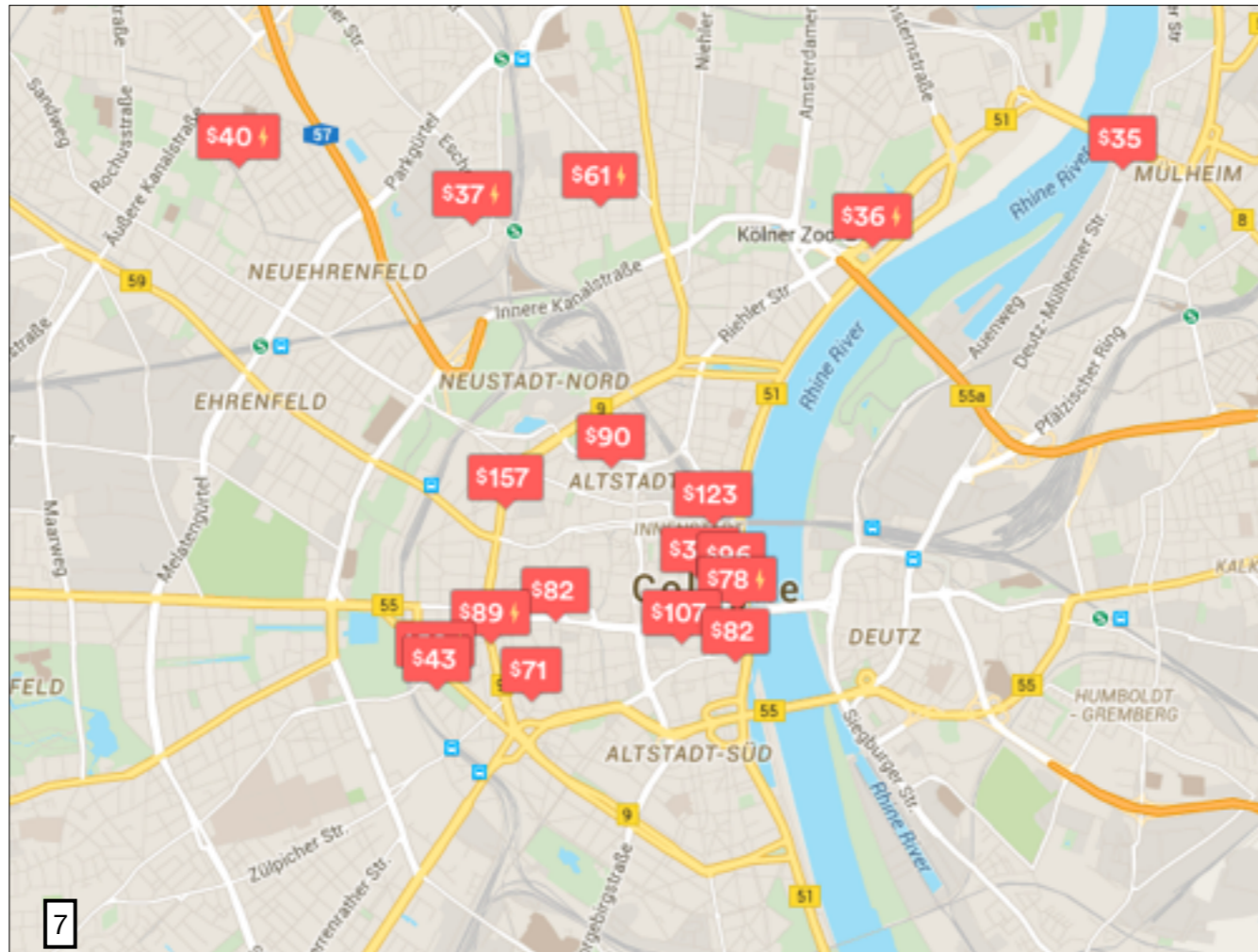
and not to knock lonely planet - all the travel guides, Fodor's, Trip Advisor, Wikitravel, Frommer's, they're all point focused. because it's easy.

Problem 1:

These guides are all point based. But I'm not staying somewhere based on points. I'm choosing it based on the neighborhood.

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I don't care if I'm right next to a museum, or the top-rated restaurant in the city.



And all those points are all downtown, even. nothing tells me anything about what neighborhood I'd like.



what do I want? is it this? no, because knowing the few neighborhoods Lonely Planet picked out as “The Best” is not right either. How do they know if the best neighborhood for me is...



this

<https://www.flickr.com/photos/la-citta-vita/5852467627>



or this

<https://www.flickr.com/photos/fitzharris/10768127696>



or this?

<https://www.flickr.com/photos/56892824@N00/1370771320/>

Problem 1:

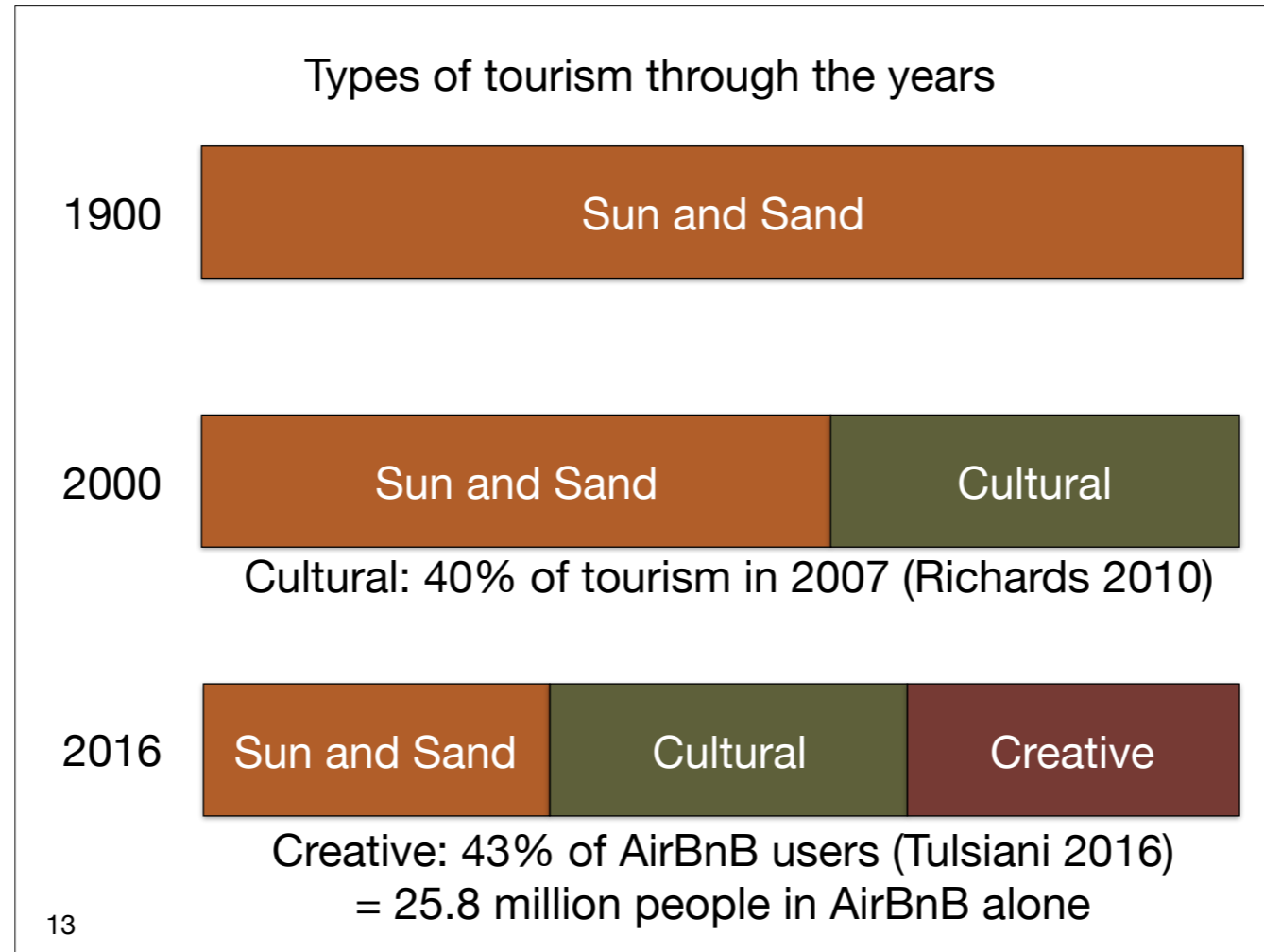
These guides are all point based. But I'm not staying somewhere based on points. I'm choosing it based on the neighborhood.

Problem 2:

Existing guides are all about finding "the best" things overall, not things that are meaningful *to me*.

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so what's different? why aren't these guides working for me?



I'm here acting as one of a new class of travelers: "creative" tourists, or "new urban tourists", or Airbnb calls them "Explorers" (Tulsiani 2016).
 hard to find exact numbers overall - "how many of these tourists are creative?"
<https://www.airbnb.com/about/about-us>

Guides are made for cultural tourists.
But creative tourists increasingly
want to experience the everyday, not
the highlights.

“These [off-the-beaten-path] areas offer city visitors opportunities to create their own narratives of the city. At the same time, they contribute to visitors’ sense that they are discovering and in some sense creating new places to visit.” (Maitland 2010)

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creative tourism - experiencing the everyday, not the highlights, and creating your own experience.

“... shift in what visitors want – from “having” a holiday through “doing” the sights or activities towards “becoming” – a focus on the tourism experience and its (potentially) transformative effects.” (Maitland 2010)



tourists these days might be taking a cooking class in Seattle

<https://www.flickr.com/photos/pmuellr/521031553/>



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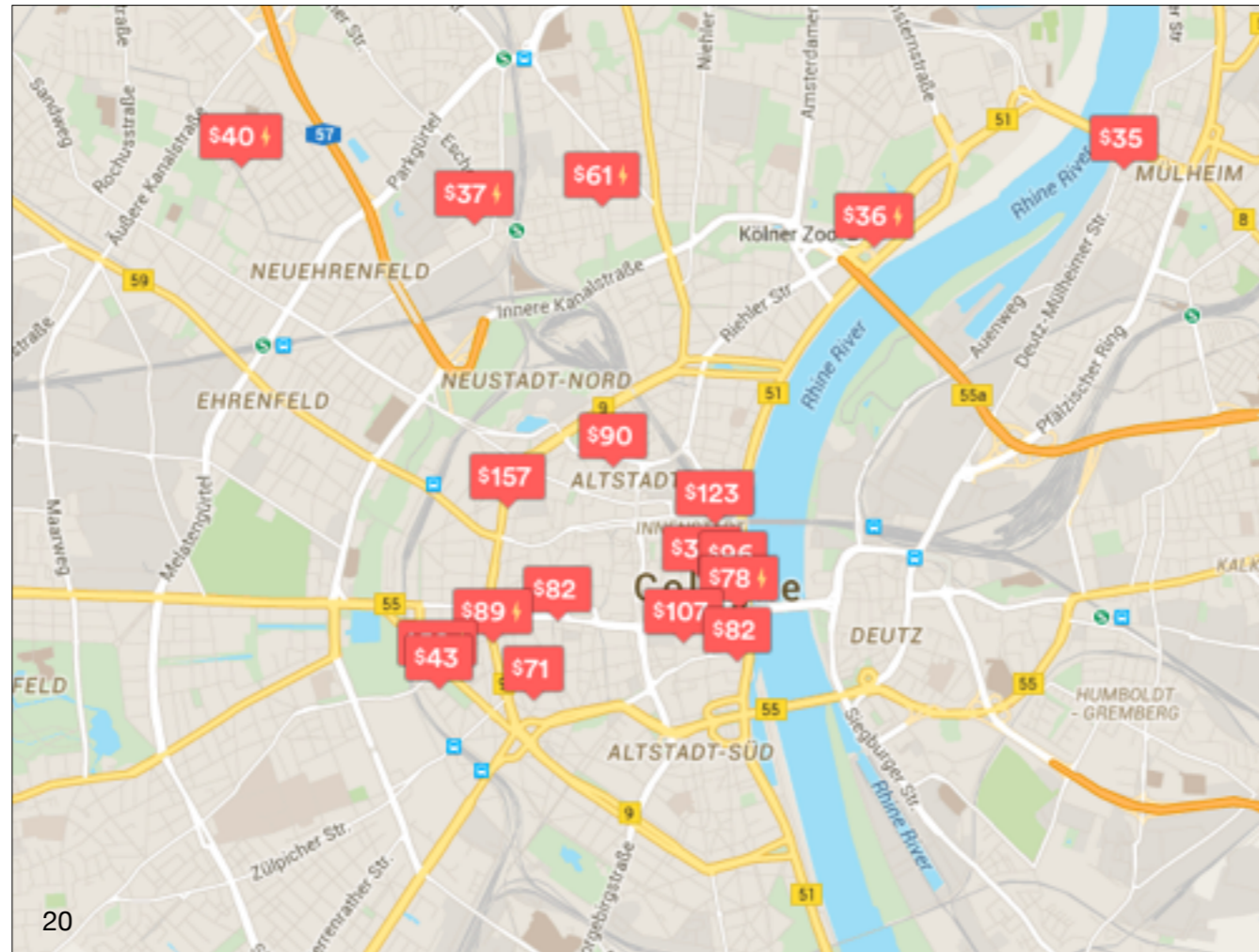
learning how to clear fields with machetes in ecuador

(my own photo)

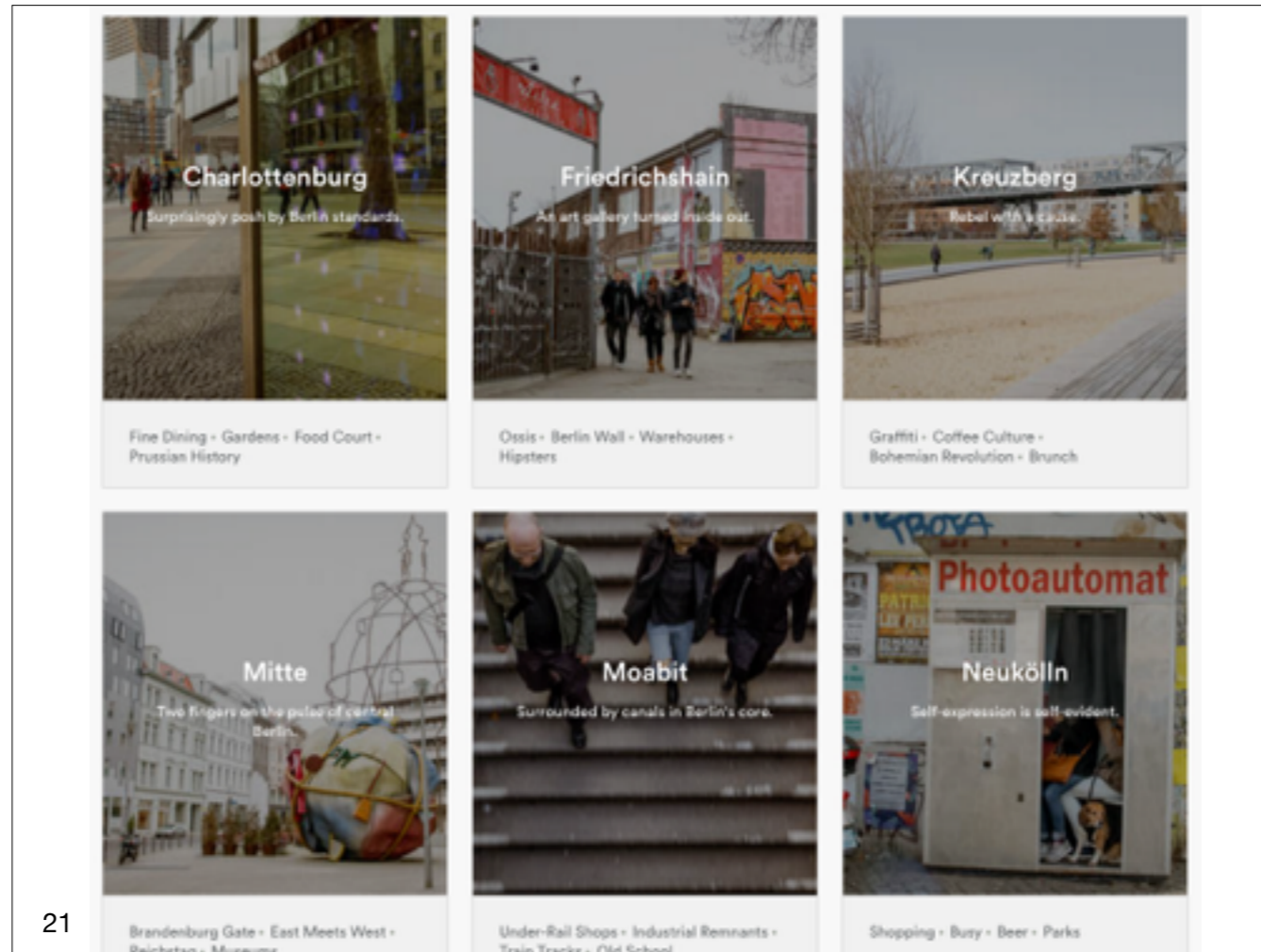


or even just creating their vision of paris by hanging out in cafes

<https://www.flickr.com/photos/darkb4dawn/17149460936>

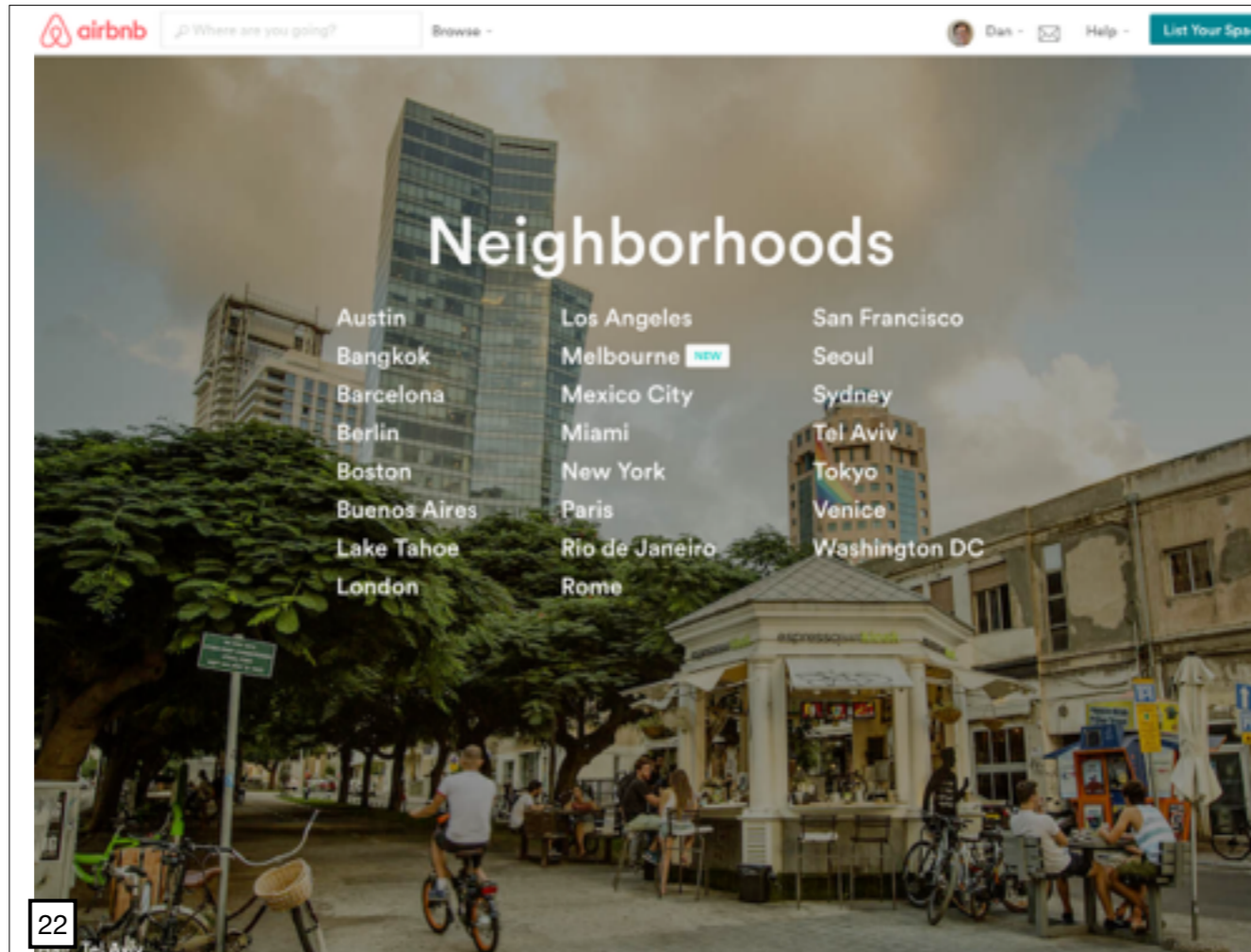


So what's a Creative Tourist to do? How can we possibly solve this problem?



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if we were going to Berlin, we might use AirBnB's guides



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but there is no guide for Köln. and building them one at a time like this is really unscalable, given that there are thousands of cities people travel to. This is the problem that I'm going to address in this talk.

This proposal outline

- Creative tourists want to explore cities in new ways, and existing travel guides do not support them well.
- Completed work: Introductory interviews to understand what creative tourists want
- Proposed work: build travel guides for creative tourists.
 - Comparisons between neighborhoods they know and neighborhoods they don't know yet
 - Context for the comparisons
 - Evaluate comparisons (quantitative), how they understand these guides (qualitative)

but before talking about completed work, I want to foreshadow what I want to build a bit.

How can we make guides for everywhere else?

- Expanding the number of cities available -> auto-generate guides
- Expanding the number of neighborhoods available -> richer navigation

if we want to expand the number of cities available

Navigation: by comparison

- Use the power of analogical reasoning
- Describing neighborhoods with words is too generic: words like “artsy” and “trendy” don’t give travelers much information (Tulsiani 2016)

Navigation: by comparison

- Le Falher 2014: Where is the Soho of Rome? Measures and algorithms for finding similar neighborhoods in cities

neighborhood	Barcelona					New York					Paris				
	NY	PR	RO	SF	WS	BC	PR	RO	SF	WS	BC	NY	RO	SF	WS
fashion shops & luxury	68.7	89.4	73.2	100.0	53.8	70.1	70.1	70.1	70.1	70.1	98.1	60.0	85.6	93.5	82.8
colleges & students	45.8	45.8	45.8	—	71.7	79.5	94.2	45.9	—	45.9	81.8	84.5	81.8	—	81.8
red light	—	91.6	—	85.6	69.0	no ground truth for this query					93.7	—	—	93.5	78.0
touristic & artsy	32.4	91.1	13.9	75.1	91.0	90.3	87.9	49.2	49.2	49.2	81.2	81.2	81.2	81.2	81.2
government	49.5	99.7	78.8	51.9	99.6	87.2	87.2	87.2	95.0	87.2	74.1	74.1	74.1	77.5	74.1
lgbt	75.1	84.0	—	79.8	66.1	77.0	95.0	—	50.7	60.7	36.9	55.6	—	56.8	86.1
expensive residences	96.2	36.8	8.7	8.7	99.7	95.2	72.8	72.8	72.8	99.8	87.9	87.9	95.6	97.2	87.9
leisure	95.2	98.8	95.2	96.4	—	—	81.3	98.2	81.3	—	—	99.6	99.6	99.6	—

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and there's been a little work on it so far - to find the fashion shops neighborhood, college neighborhood, red light neighborhood, of each city; it's a useful approach, but they only used Foursquare venue data to compare, and only for 8 well-defined neighborhoods, AND no human evaluation.

Navigation: by comparison

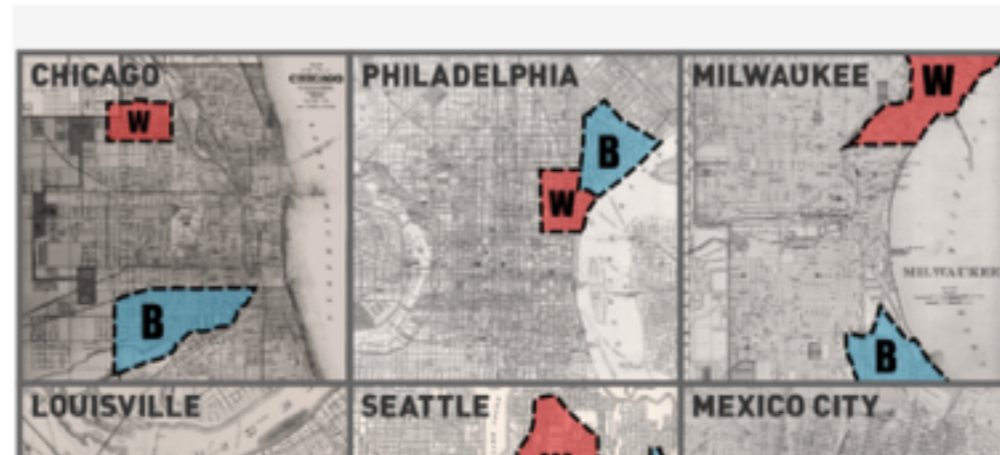


Log in / Sign up

This Is the Williamsburg of Your City: A Map of Hip America

Max Read
1/25/14 11:30am - Filed to: WILLIAMSBURG

647.5K 1.8K 27



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and this is popular.
(here it's Lawrenceville and Bloomfield, of course.)

I know:

I'm going to:

Show me a neighborhood like:

<p>The Mission</p> <p>73% similar, because:</p>	<p>Bayview</p> <p>71% similar, because:</p>	<p>North Beach</p> <p>68% similar, because:</p>
<p>Western Addition</p> <p>51% similar, because:</p>	<p>Inner Sunset</p> <p>44% similar, because:</p>	<p>Duboce Triangle</p> <p>41% similar, because:</p>

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so envisioning a site like this

this is a useful metaphor, but how do we compare these neighborhoods? on what axes are they similar and different?

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Ok, starting on completed work now.

Understanding Travelers' Needs: Goals

- How do people search for places to stay when they're traveling (or moving)?
- What tools do they currently use, and what tools do they need?
- How do different types of social media reflect the neighborhoods they live in or travel to?

Understanding Travelers' Needs

- 24 Interviews: 7 travelers and 10 movers in Pittsburgh (A1-A17), 7 travelers in San Francisco (B1-B7)
- Recruitment: Reddit, Craigslist, Facebook, Twitter for people who recently moved or traveled.
- Mostly 20s and 30s, 13 women and 11 men
- Payment: \$15
- Interviews took place in a cafe or other neutral place in their neighborhood. (unrecorded due to IRB/privacy laws)

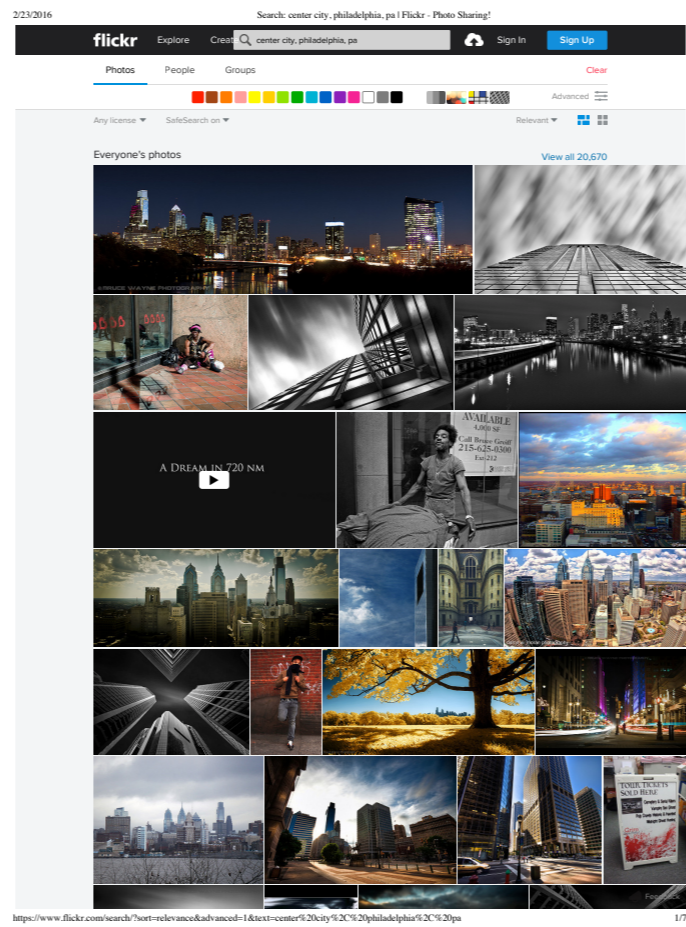
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so bear with me if I'm missing a couple quotes.

why cafe/neutral place? convenience, near them, thinking about third places, and I'm alone

Understanding Travelers' Needs

- 1-2 hour interview; talked about recent trip, walked through their info search process for where they stayed, and gave them print outs to make a collage about their home neighborhood and the one they visited or moved from



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for example, someone who went to Center City, Philadelphia



Browsing Market East, Philadelphia, PA Businesses


Showing 1-10 of 21776


- Active Life
- Beauty & Spas
- Financial Services
- Home Services
- Nightlife
- Real Estate
- Arts & Entertainment
- Education
- Food
- Hotels & Travel
- Pets
- Restaurants
- Automotive
- Event Planning & Serv...
- Health & Medical
- Local Services
- Professional Services
- Shopping


More categories


Filters


- \$
- \$\$
- \$\$\$
- \$\$\$\$
- Open Now
- Order Pickup or Delivery
- All Filters


- 


1. Morimoto
 1273 reviews
 \$\$\$\$ - Japanese, Sushi Bars
 Market East
 723 Chestnut St
 Philadelphia, PA 19106
 (215) 413-9070


I'm so glad I finally got to try the Iron Chef, all the hype was spot on! - I got "Duck duck duck" dish which I would say was the best duck dish I ever had. - I ordered the ish... [read more](#)
- 

2. Talula's Garden
 813 reviews
 \$\$\$ - American (New)
 Washington Square West, Market East
 210 W Washington Sq
 Philadelphia, PA 19106
 (215) 592-7767


I went with a group of people so we shared the "Master Collection" cheese plate. - We chose scallops, with a decidedly Thai motif, for our main course. - We couldn't resist... [read more](#)
- 


3. Barbuzzo
 1457 reviews
 \$\$ - Mediterranean, Pizza
 Market East, Avenue of the Arts South
 110 S 13th St
 Philadelphia, PA 19107
 (215) 546-9300

The salted caramel budino was so good I teared up - it's a must. - The sheep's milk ricotta to start was unbelievable. [read more](#)
- 

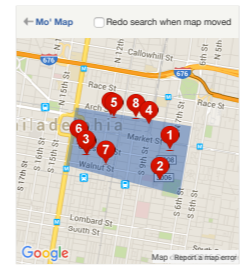
4. TT Skewer
 40 reviews
 \$ - Barbeque, Hot Pot
 Market East
 56 N 9th St
 Philadelphia, PA 19107
 (215) 460-6617

This restaurant takes reservations

lamb, chicken wings, squid are sooo good! - I usually order their beef, lamb, and fish tofu along with my hotpot bowls. [read more](#)
- 

5. Hershel's East Side Deli
 368 reviews
 \$ - Delis, Sandwiches, Salad
 Market East
 51 N 12th St
 Philadelphia, PA 19107
 (215) 922-6220

If you like corned beef or pastrami you can not go wrong! - Russian dressing and the cole slaw on the Hershel's Special is 'da BEST. - I had the Hershel's special with pastrami. [read more](#)



Google Maps Center City



Map data ©2016 Google 2000 ft



Center City Philadelphia, PA



Quick facts

<https://www.google.com/maps/place/Center+City,+Philadelphia,+PA/@39.9504667,-75.1777311,14z/data=!3m1!1e4!3m2!3m1!1s40089e6c62f36be86990a436e1d1...> 1/2

ZIP Lookup What Your ZIP Code Says About You.



Tapestry | Income | Age | Population Density

For ZIP Code

Top Tapestry™ Segments

- 77% Metro Renters
- 14% Trendsetters
- 9% Social Security Set

Want to know more? Esri's Tapestry™ Lifestyle Segmentation classifies the US population into 67 market segments and provides comprehensive lifestyle details.

[More about Tapestry](#) [Contact Us](#)

[f](#) [t](#) [in](#) [✉](#)

and so I'd give them these printouts for their home neighborhood and the one they traveled to or moved from.

Understanding Travelers' Needs

- Analyzed data with grounded theory-inspired open coding
- After interviewing movers and travelers in Pittsburgh, realized that movers had many other concerns that the neighborhood doesn't address, so we focused more on travelers.

Understanding Travelers' Needs: Findings

1. If people have a heuristic, they use it.
2. If not, they try to optimize six dimensions.
3. Current tools are not very good at helping them explore these six dimensions.

Understanding Travelers' Needs: If people have a heuristic, they use it

- B1 traveled for a wedding
- B4 staying near family
- A9 traveling for a concert
- B5 and B6 looking for the cheapest place possible
- B2 Couchsurfing, so took any room he could find

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and remember these A1-A17 are the Pittsburgh interviewees, B1-B7 are the SF ones.
but almost everyone had some trips where there was no heuristic.

Understanding Travelers' Needs: The Six Dimensional Model

1. Safety
2. Diversity
3. Walkability
4. Aesthetic Appeal
5. The Ideal Everyday
6. Authenticity

Understanding Travelers' Needs:

1. Safety

- Type of crime matters: “Drug deal gone bad” vs “random crime” (A2), looking up frequency of murders before moving (A5)
- Different thresholds: “I just don’t want to get shot at” (B4) vs rerouting itinerary to skip a city that they heard was unsafe (A6)
- Not only crime, but mostly: A1, A15, A17 all mentioned bedbugs in New York

pretty self explanatory

Numbers are participants: A's from Pittsburgh, B's from SF.

Safety data: Crime Statistics

- Crimes per person per year
- Violent crimes per person per year

Understanding Travelers' Needs: 2. Diversity



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everyone liked diversity
photo by me

Understanding Travelers' Needs:

2. Diversity

- Train stations and markets - “Not the hot new restaurants, but where the people from the hot new restaurants are buying their produce” (B1)
- “There’s no place in SoHo for my grandma” (A1)
- “There’s some odd ducks, and they make life so interesting” (A17)
- Enjoys hearing many languages, ethnicities, restaurants (A9)
- Likes “blue collar culture more than white collar/yuppies/whatever we are” (A10)

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makes life interesting, and also they're not pushing anyone out.

Diversity data: Demographics

- US Census:
 - Percent of residents in each age group
 - Percent of residents in each income bracket
 - Percent of residents of each race

Understanding Travelers' Needs:

3. Walkability

- Convenience: “It’s about being mobile” (B2), “Is there a bus system there?” (major criterion) (B6), “You cannot pay me to drive here in the snow” (A8)
- Depends on transport: Being in the middle of stuff isn’t as important in NYC because of the subway (B4)
- Enabling serendipity: New Orleans street parties (B6), “I’m very uninterested in doing anything intentionally” (A11), B7 walking through Merida

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convenience paradox - “being in the middle of stuff”, “having stuff around” - but what stuff?

not strictly about walkability but pretty close

enables serendipity

Understanding Travelers' Needs: 3. Walkability



B7 being a bit away from the center gave her an excuse to walk around and run into stuff

Understanding Travelers' Needs:

3. Walkability

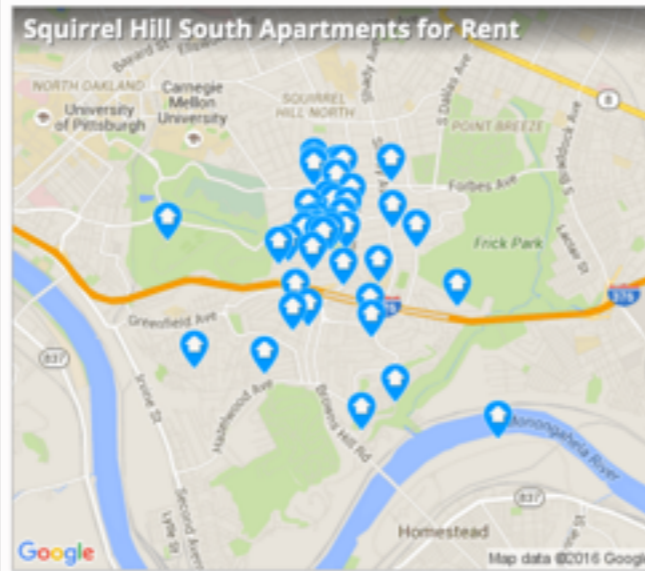
- (visitor surveys) “reveal the popularity of rather vaguely articulated activities such as ‘sightseeing’, ‘wandering about’, ‘taking in the city’, ‘getting among the people’” (Ashworth 2011)

You can't wander about in a car.

Walkability data: Walkscores

- Neighborhood Walkscore
- Neighborhood TransitScore

Living in Squirrel Hill South Pittsburgh



Walk Score
71

Transit Score
49

Bike Score
59

Squirrel Hill South is the 19th most walkable neighborhood in Pittsburgh with 15,112 residents.

Squirrel Hill South has some public transportation and is somewhat bikeable.

Nearby neighborhoods: [Squirrel Hill North](#), [Greenfield](#), [Swisshelm Park](#), [Point Breeze](#), [Regent Square](#), [Glen Hazel](#) and [Hazelwood](#).

[Nearby Apartments](#)

Understanding Travelers' Needs: 4. Aesthetic Appeal



but it's not just a linear scale, some people's standard of beauty is this

Understanding Travelers' Needs: 4. Aesthetic Appeal



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and some people enjoy the aesthetics of a palace; might search for it;

Understanding Travelers' Needs: 4. Aesthetic Appeal



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for some people beauty is in a big city
anyway aesthetics are subjective almost by definition

Understanding Travelers' Needs:

4. Aesthetic Appeal

- “The architecture and built environment that is important to them is not iconic, monumental and planned, but the ordinary and everyday fabric of the city” (Maitland 2013)
- (Airbnb guests) “want this feeling: that's Berlin. A hostel, in contrast, is of course completely interchangeable; it always looks the same everywhere” (Stors 2015)

often it's the everyday architecture and distinctive things in the city

Understanding Travelers' Needs: 4. Aesthetic Appeal

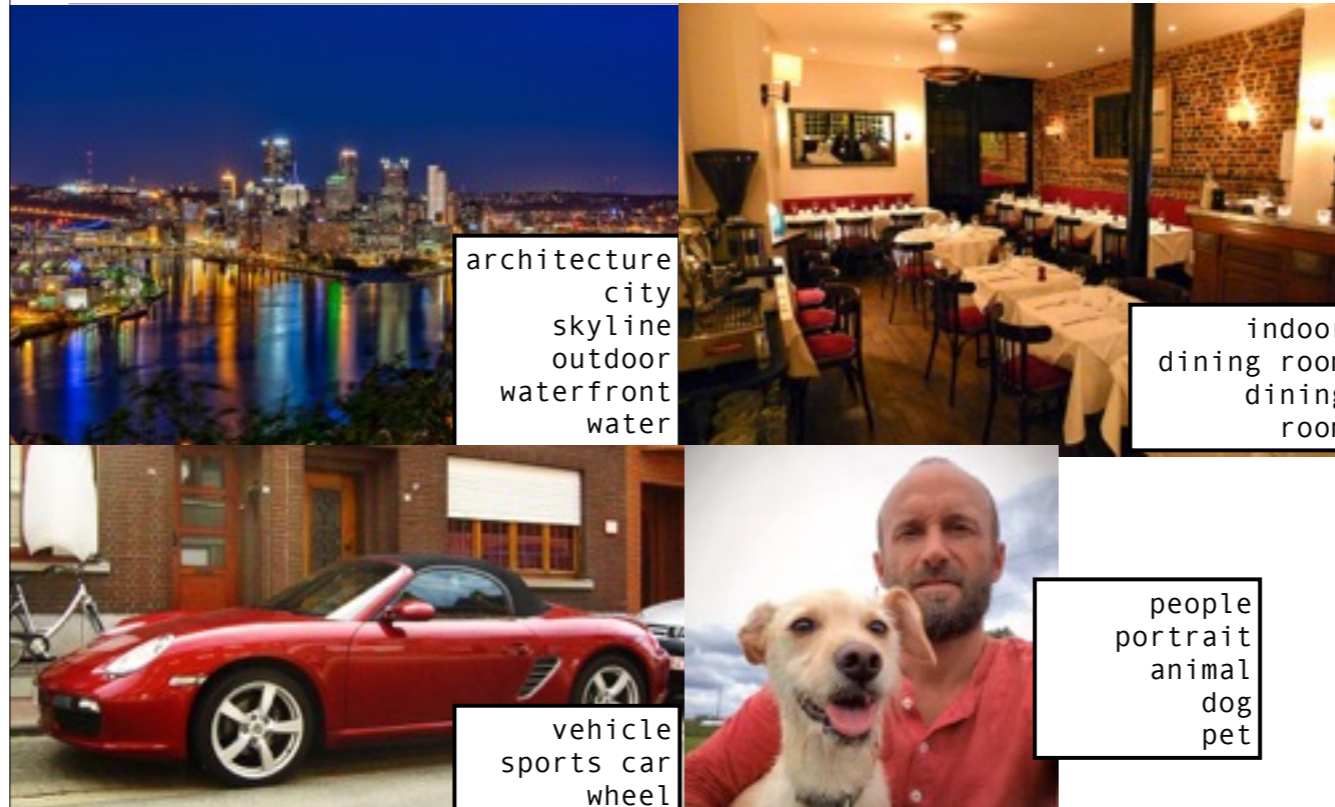
- “Maybe 25-30% agricultural” (A10) vs “concrete jungle” (A4)
- Bethel Park: “Perspective of what country living should be.” (A7)
- “Beautiful tiny hidden gems” (A11)
- Not high-rises (B3, B1), “You can’t see a neighborhood in a high-rise” (B1)
- London’s beauty is landscaped, organized - “Wherever the British go they turn it into Britain” (B2)

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but what makes Berlin look like Berlin, or Bethel Park look like Bethel Park?

this is very individual

Aesthetics data: Flickr Autotags



<https://www.flickr.com/photos/matthewpaulson/6997780866>
<https://www.flickr.com/photos/hotels-paris-rive-gauche/6260663722>
<https://www.flickr.com/photos/christopher-gozy/3889013672>
<https://www.flickr.com/photos/dylanboyce/15018502095>

Aesthetics data: Flickr Autotags

- Number of users who tagged at least one photo with each tag (1720 tags)
- Top 10 tags in Financial District, SF: architecture, people, building, face, blackandwhite, vehicle, monochrome, building complex, road, text
- Top 10 tags in Outer Sunset, SF: nature, people, landscape, face, shore, seaside, sky, road, water, coast

(and normalize within city - there are 1000 users in this city, 20 of them posted a photo tagged “dog” in this neighborhood)

Aesthetics data: Flickr Autotags

- Why not human tags?



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may be good for future work but as is they're pretty messy - and people vary wildly in what they tag - camera-specific, place-specific, scientific terms

Understanding Travelers' Needs: 5. The Ideal Everyday



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people want to experience everyday life

(my photo again)

Understanding Travelers' Needs: 5. The Ideal Everyday

- "I want to pretend I lived there, like this is my everyday experience" (B1)
- "The ultimate home experience everywhere" (A1)
- "I like to play the game of, what if we lived here?" (A17)
- "See what the locals do" (A9)
- Frenchman St, "The local Bourbon St" in New Orleans (B5 and B6)

Understanding Travelers' Needs: 5. The Ideal Everyday

- Repeat visitors “feel attracted by residential quarters and other places that are part of Parisian everyday life” (Freitag 2010)
- “experiencing a city and living like a local are valued and sought after by Airbnb users” (Yannopolou 2013)
- “an important element in the appeal of the city is the opportunity to experience and feel a part of everyday life.” (Maitland 2010)
- “Tourists increasingly say that they want to experience local culture, to live like locals and to find out about the real identity of the places they visit” (Richards 2010)

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but not the taking out the garbage or paying the bills
that perfect saturday, hang out in a cafe, a bar, hacky sack, dinner
everyone's ideal everyday is different, but it's usually about relaxing, and about third places.

Ideal Everyday: Yelp Review Words



Chris D.
Basalt, CO
12 friends
10 reviews

★★★★★ 3/13/2015

Biddle's deserves its reputation as a bit of a hidden gem, serving good coffee and offering a studying / meet-up friendly vibe as well as a neighborhood community hub. One wall is a windowed garage door bringing in lots of natural light (and which they sometimes open) looking out on to their comfortable dog-friendly patio. Funky decor, beads for sale along the back wall, decorative masks, pinball machines - there's plenty to comment on but it has a definite style. Some tables are made from up cycled front doors, others are two-tops that can be moved around to suit different size groups.

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this is a tricky one

NOT the star ratings - interviewees mistrusted those b/c the people leaving them are different than you.

Ideal Everyday: Yelp Review Words



Stephen D.
San Diego, CA
42 friends
178 reviews
Elite '16

★★★★☆ 11/28/2015

1 check-in

I was pleased with what A Mano is putting forth. The espresso was smooth with a hint of sweet which really rounded out my Capp. The setting is hipster-esq, with a trend towards the NYC state-of-being yet still keeping to its' PA roots. Charming and hip at the same time. I was not feeling pastry the day after TurkeyDay, but their selection was rather varied and my feeling of their 'nearness to The Strip', bodes well for the quality of what they were serving.

so what do we do with these

Ideal Everyday: Yelp Review Words

- Option 1: Bag of words, normalized by overall counts
- Option 2: doc2vec (one document is all the words in a neighborhood's reviews) to learn embeddings into a higher dimensional space.
- Option 3: Counts of Third Place types, classified by Yelp (2 cocktail bars, 4 dive bars, 2 pubs, 1 gay bar, 0 sports bars, 5 coffee shops, and 1 tea room)

Understanding Travelers' Needs:

6. Authenticity

- “Berlin is witnessing a massive tourism boom, and parts of it can be described as ‘new urban tourism’, which shows a preference for off the beaten track areas and ‘authentic’ experiences of the city.” (Füller 2014)
- “While in the past tourists mainly frequented tourist hot spots and officially designated tourist attractions, they are increasingly seeking ‘authentic and local experiences’” (Bock 2015)

Understanding Travelers' Needs: 6. Authenticity

- “kind of get a feel rather than be there as a tourist” (A6)
- Only does “tourist things” when guests are in town (B2)
- People are nicer in places where you don’t “have a dollar sign on your forehead,” like Cancún (B7)
- Likes places that are “not just a tourist spot” (B4)
- Most tourist places aren’t worth it (B5, B6)
- “I’m like the anti-tourist.” (A9)

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people start talking about this as non-touristy.



1. Philly Zoo
2. Philadelphia Museum of Art
3. Reading Terminal Market
4. The Palestra
5. Rittenhouse Square
6. Electric Factory
7. Sports Complex
8. Max's Steaks



this is from A9, the "Anti-tourist."

Understanding Travelers' Needs: 6. Authenticity



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people seeing all the sights, but then saying they want “non-touristy” things.

Understanding Travelers' Needs: 6. Authenticity

- MacCannell 1977: Places present themselves like people
- Six stages of places, from front stage to back stage.
- Travelers want to get closer to the back stage.

lots of work on Authenticity in travel - this from MacCannell 1977 - he assumed everyone was trying to get more backstage. but somehow this isn't what they're talking about. they would go see the Eiffel Tower too.

Understanding Travelers' Needs: 6. Authenticity

- Objective Authenticity (This is an original Chihuly vase)
- Constructive or Symbolic Authenticity (This is an official reproduction of a Chihuly vase)
- Existential Authenticity (This is a real experience I'm having, admiring the beauty of this Chihuly vase) (Wang 1999)

but this is too simple - later work distinguishes between multiple kinds of authenticity and I think existential authenticity is the real one.

Understanding Travelers' Needs: 6. Authenticity



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is this authentic?
(my photo)

Understanding Travelers' Needs: 6. Authenticity



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and walnut st is a bunch of yuppie stores? or is this where real people live and the strip district is an anachronism?

(this is why authenticity is a tricky point)

it's about finding a place that will feel authentic to you

<https://www.flickr.com/photos/123443334@N07/13998284352>

Understanding Travelers' Needs:

6. Authenticity

- “It’s the thing to do, but I don’t care.” (B6, about seeing the Crown Jewels in London)
- “This looks like maybe a touristy place I should be.” (B1, about Newport Beach, CA)

Authenticity data: Tweets

- Why tweets?
 - Authenticity is subjective. Tweets, as freeform text, can represent what people are talking about, and you can decide what would resonate with you.
 - We can distinguish locals from tourists (Tasse, Sciuto and Hong, “Our House, in the Middle of Our Tweets”, ICWSM 2016) and so potentially use just the locals to better understand the place, if that’s what “authentic” means to you.
- How? Same options as with Yelp reviews

Understanding Travelers' Needs: The Six Dimensional Model

1. Safety

2. Diversity

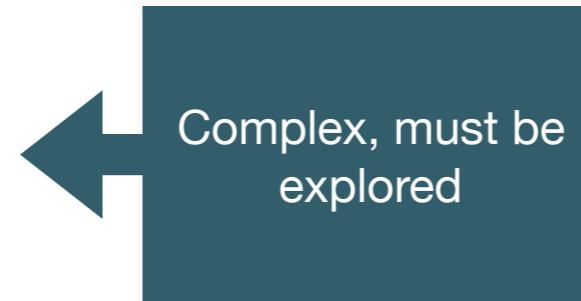
3. Walkability



4. Aesthetic Appeal

5. The Ideal Everyday

6. Authenticity



Understanding Travelers' Needs: Findings

1. If people have a heuristic, they use it.
2. If not, they try to optimize six dimensions.
3. Current tools are not very good at helping them explore these six dimensions.

Understanding Travelers' Needs: Findings

- Searches people use:
 - “(city) off the beaten path” (B5)
 - “(city) non tourist attractions” (B5)
 - “(city) attractions” (B4)
 - “Best coffee in (city)” (B1)
 - “queerest neighborhood in (city)” (A11)
- Other sources people use:
 - local ultimate frisbee games (B2)
 - [city-data.com](#) (A9, A17)
 - ask friends who have been there (A1, A9, B6)
 - ask strangers in bars and restaurants (A14)

these are all real searches and heuristics people used

This proposal outline

- Creative tourists want to explore cities in new ways, and existing travel guides do not support them well.
- Completed work: Introductory interviews to understand what creative tourists want
- Proposed work: build travel guides for creative tourists.
 - Comparisons between neighborhoods they know and neighborhoods they don't know yet
 - Context for the comparisons
- Evaluate comparisons (quantitative), how they understand these guides (qualitative)

but if you notice,

I know:

I'm going to:

Show me a neighborhood like:

<p>The Mission</p> <p>73% similar, because:</p>	<p>Bayview</p> <p>71% similar, because:</p>	<p>North Beach</p> <p>68% similar, because:</p>
<p>Western Addition</p> <p>51% similar, because:</p>	<p>Inner Sunset</p> <p>44% similar, because:</p>	<p>Duboce Triangle</p> <p>41% similar, because:</p>

79

we just explained how we'll compare these places. Six dimensions, six data sources.

I know:

I'm going to:

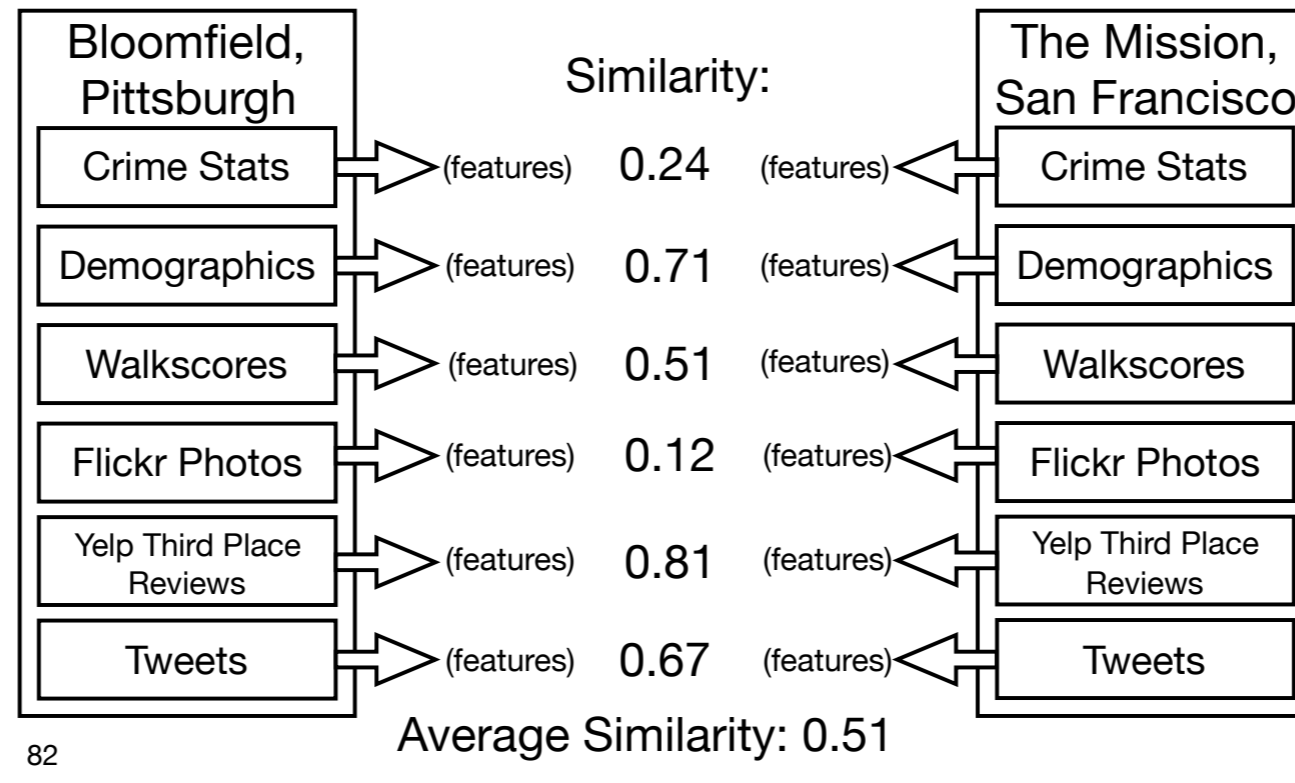
Show me a neighborhood like:

<p>The Mission</p> <p>73% similar, because:</p> <ul style="list-style-type: none">- Yelp: "dive", "specialty coffee"- Twitter: "hipster", "brunch"- Demographics: 20s	<p>Bayview</p> <p>71% similar, because:</p> <ul style="list-style-type: none">- Demographics: lower incomes- Twitter: "punk", "rock"	<p>North Beach</p> <p>68% similar, because:</p> <ul style="list-style-type: none">- Flickr: restaurant, festival- Yelp: "Italian"- Demographics: 50s, 60s
<p>Western Addition</p> <p>51% similar, because:</p>	<p>Inner Sunset</p> <p>44% similar, because:</p>	<p>Duboce Triangle</p> <p>41% similar, because:</p>

Compare Neighborhoods: How

1. Safety: Crime statistics
2. Diversity: Demographics
3. Walkability: Walkscore
4. Aesthetic Appeal: Flickr photo autotags
5. The Ideal Everyday: Yelp third place reviews
6. Authenticity: Twitter

Compare Neighborhoods: How



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we'll turn each neighborhood's data into a feature vector, then average them out to tell the average similarity.

Give Context

1. Safety: Crime statistics
2. Diversity: Demographics
3. Walkability: Walkscore
4. Aesthetic Appeal: Flickr photo autotags
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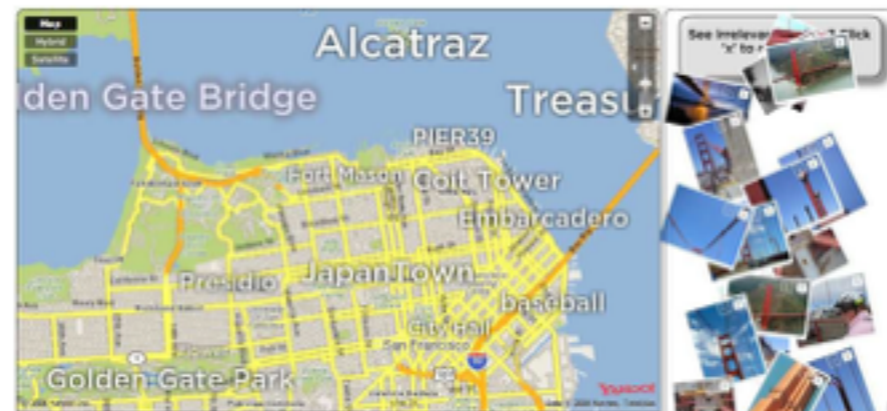
83

this is important - the answer to that “why” is “because of all these posts.”

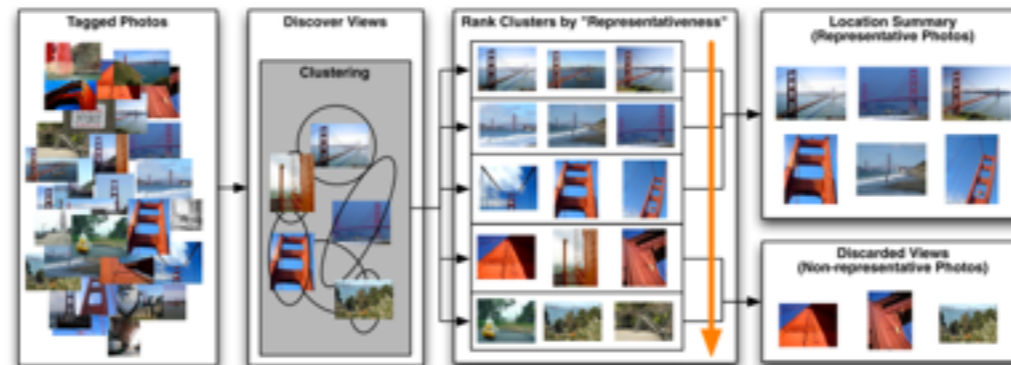
“I’d like it, but I don’t know if I could trust it”

intelligibility, algorithm understanding etc

Give Context



(Ahern 2007)



(Kennedy 2007)

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Aesthetic appeal, it's particularly handy to give context about b/c it's been well studied

top: Ahern 2007
bottom: Kennedy 2007

Give Context

1. Safety: Crime statistics
2. Diversity: Demographics
3. Walkability: Walkscore
4. Aesthetic Appeal: Flickr photo autotags
5. The Ideal Everyday: Yelp third place reviews
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if we do the bag of words thing, this is easy, the words w/ the highest weight; if we do the doc2vec, it may be harder, and we may instead have to just summarize the small corpora in different ways

This proposal outline

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but if you notice,

Evaluation: How good are the comparisons?

The of San Francisco is:

North Beach

Definitely incorrect Probably incorrect I don't know Probably correct Definitely correct

Why?

Is there a better match?

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Put this online. Recruit people who know Pittsburgh and one other city.

Evaluation: How good are the comparisons?

- Condition 1: Our algorithm, including all 6 dimensions
- Condition 2: Just first 3 dimensions (safety, demographics, walkability)
- Condition 3: Random comparisons

and hope that people do better in our condition. 50 people each.

Evaluation: How do creative tourists understand these guides?

- Two qualitative user studies
 - One in March, for people going to SXSW
 - One ongoing
- Feedback: not “is it good?”, but which parts are most and least useful.
- Goals: further develop six-dimension model, and understand how social media (and our algorithms processing it) reflects neighborhoods.

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Get people to walk us through their trip-booking and place-understanding process. qualitative feedback. real preliminary for sure. The feedback we're looking for isn't "we asked 10 friends and they said it was good", it's "the photo summarization isn't accurate" or "I don't care about the comparisons" etc.

Evaluation: How do creative tourists understand these guides?

- Further understand their search needs:
 - Walk through how they've searched so far
- Understand how social media reflects neighborhoods:
 - For each dimension, does this make you want to stay there more or less?
 - Talk about their home neighborhood: does this seem accurate?

Evaluation: How do creative tourists understand these guides?

- Extra bonus feedback: comment box on the site

This proposal outline

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Contributions

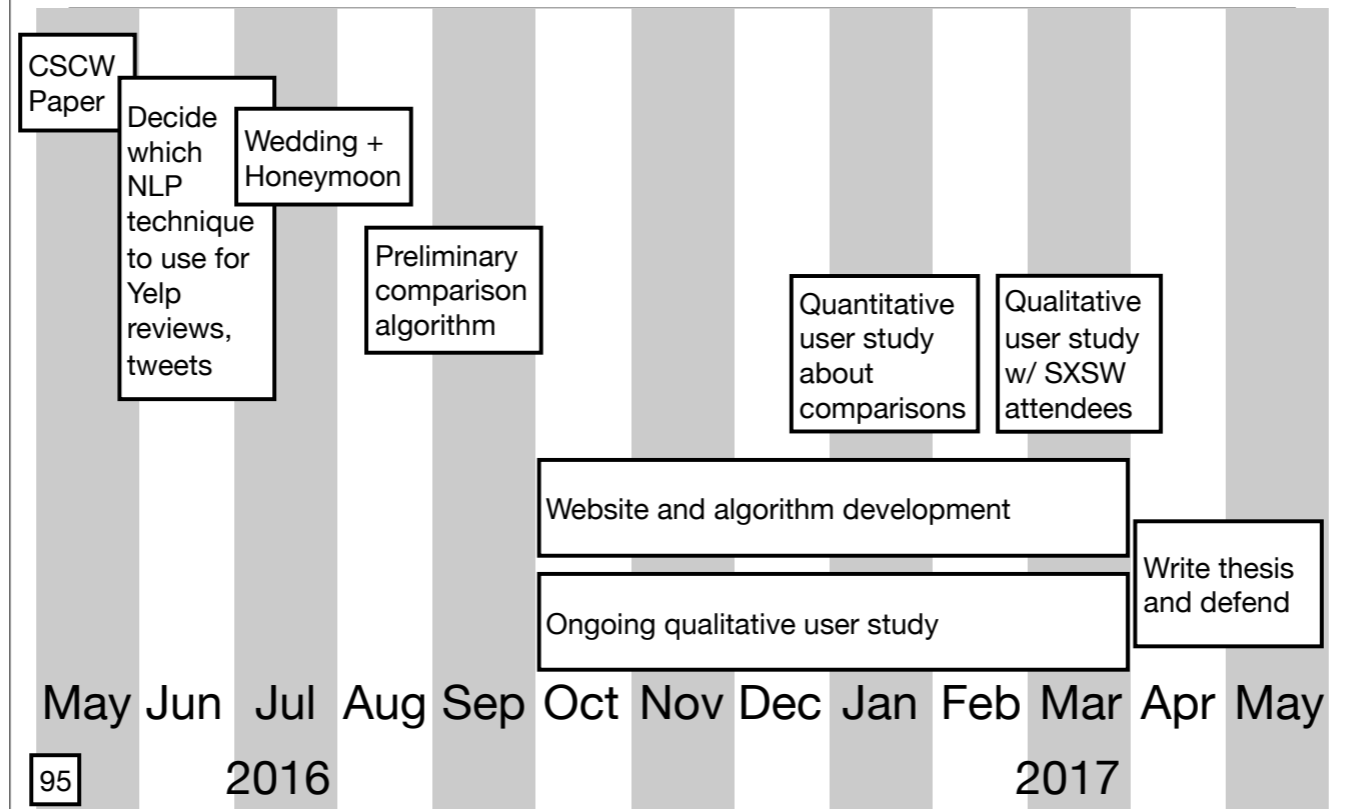
- A model of tourist information search, focusing on six primary characteristics that creative tourists deem valuable today, based on formative interviews and qualitative insights from user studies.
- The iterative design and implementation of an automatically generated web-based neighborhood guide, which uses social media to provide comparisons between neighborhoods in different cities and to provide context for these comparisons.
- This neighborhood comparison algorithm based on both statistics and social media, that works better than baselines.
- A deeper understanding of how social media can represent neighborhoods, based on the development and iterative feedback on this guide. This will likely include learning which forms of social media are most important to travelers and how best to summarize them.

Feedback to city planners?

- Tourism boards and realtors: why is a certain region seen as more or less desirable?
- Neighborhood associations: when people look at your neighborhood, what do they see?
- How much do people talk about X in a given neighborhood? (schools, infrastructure, crime, etc)

side benefit; not trying to prove I can do this in this thesis, but there's reason to believe that in the future it may lead to useful info for these folks.

Schedule



Social Media Neighborhood Guides

A PhD Thesis Proposal by Dan Tasse

Committee:
Jason Hong (chair)
Jodi Forlizzi
Niki Kittur
Judd Antin

2016-04-28

And this is my proposal! Thanks again to Jason, Jodi, Niki, and Judd. And all of you.

Contributions

- A model of tourist information search, focusing on six primary characteristics that creative tourists deem valuable today, based on formative interviews and qualitative insights from user studies.
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Frequently Asked Questions

Why is this Research?

- We don't actually know that social media can be turned into anything particularly useful for tourists
- We also don't know how social media reflects the city it's posted in
- Improving our understanding of cities from a tourist's point of view is one step on the way to improving our understanding of cities overall, which is incredibly important given cities' current growth

Neighborhood comparison evaluation: why not gather ground truth?

- There is no ground truth. What's the Bloomfield of San Francisco? Depending on who you ask, it could be Bayview or the Lower Haight or North Beach.

Why not just use collaborative filtering?

- It's not just a recommendation task: we need to allow recommendation and browsing
 - The creative tourist's goal is to create their experience, not have it handed to them
- Privacy: easier to understand places than people

How will you get neighborhood boundaries?

- From city boundaries, e.g. <https://data.wprdc.org/dataset/pittsburgh-neighborhoods770b7>
- Eventually from Who's on First: <https://mapzen.com/blog/who-s-on-first/>
- Why not Livehoods? It's more complicated and wouldn't gain us much. In most cases, Livehoods are similar to as neighborhoods. Also, it's harder to understand: "Something like Bloomfield" vs "Something like Livehood 34."

What's your thesis statement?

- Using user-generated social media, we can automatically generate guides that will help Creative Tourists travel in the way they want.

What are your contributions?

- A model of tourist information search, focusing on six primary characteristics that tourists deem valuable today, based on formative interviews and qualitative insights from user studies.
- The iterative design and implementation of an automatically generated web-based neighborhood guide, which uses social media to provide comparisons between neighborhoods in different cities and to provide context for these comparisons.
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What are your research questions?

- What do urban tourists nowadays want?
- Can we use social media to build guides to help them travel like they want?
- Can we use social media to build guides to produce meaningful neighborhood comparisons?

What problem are you addressing?

- Creative Tourists/New Urban Tourists/Explorers don't have good guides to help them travel the way they want to. All the guides are about points or sights, not the "everyday life" that they want.

Isn't that a pretty trivial problem?

- Tourism is a \$7 trillion business globally
- Consider also how these guides can be repurposed to learn about cities by people moving, businesses, and city governments

(I just didn't study these because their needs are more complicated)

<http://www.statista.com/topics/962/global-tourism/>

Why are you the best person for it, and why now?


- I can hack Big Data and also conduct decent qualitative interviews; build web apps and develop theory
- Now is a changing time for tourism: there's a clear need that nobody's filled
- I've spent a lot of time urban traveling, so I know why some ideas would or wouldn't work

Wait, that ESRI thing looked pretty good, why not just use that?

2/23/2016 Esri ZIP Code Lookup | Demographics and Lifestyle by ZIP Code

ZIP Lookup

What Your ZIP Code Says About You.



Tapestry | Income | Age | Population Density

For ZIP Code

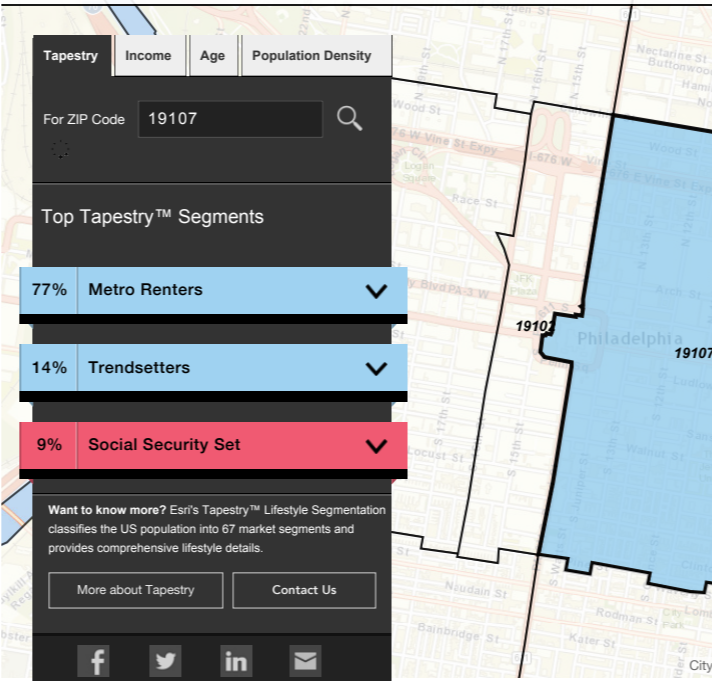
Top Tapestry™ Segments

77%	Metro Renters	▼
14%	Trendsetters	▼
9%	Social Security Set	▼

Want to know more? Esri's Tapestry™ Lifestyle Segmentation classifies the US population into 67 market segments and provides comprehensive lifestyle details.

[More about Tapestry](#) [Contact Us](#)

[f](#) [t](#) [in](#) [✉](#)



Wait, that ESRI thing looked pretty good, why not just use that?

- Nobody trusted it.
- You can't tell why it's "77% Metro Renters" or why "most of our income goes to rent, fashion, or the latest technology."
- Some people were offended.
- It's still abstract; I don't know what a "Metro Renters" zone is like, but I know what Shadyside is like.

Where'd the Big Data guy go?



- Ahern, S., Naaman, M., Nair, R., & Yang, J. H.-I. (2007). World Explorer: Visualizing Aggregate Data from Unstructured Text in Geo-Referenced Collections. In Proc. 2007 conference on Digital libraries - JCDL '07 (p. 1). <http://doi.org/10.1145/1255175.1255177>
- Ashworth, G., & Page, S. J. (2011). Urban tourism research: Recent progress and current paradoxes. *Tourism Management*, 32(1), 1–15. <http://doi.org/10.1016/j.tourman.2010.02.002>
- Bock, K. (2015). The changing nature of city tourism and its possible implications for the future of cities. *European Journal of Futures Research*, 3(1), 20. <http://doi.org/10.1007/s40309-015-0078-5>
- Freytag, T. (2010). Déjà-vu: Tourist practices of repeat visitors in the city of Paris. *Social Geography*, 5(1), 49–58. <http://doi.org/10.5194/sg-5-49-2010>
- Füller, H., & Michel, B. (2014). “Stop Being a Tourist!” New Dynamics of Urban Tourism in Berlin-Kreuzberg. *International Journal of Urban and Regional Research*, 38(4), 1304–1318. <http://doi.org/10.1111/1468-2427.12124>
- Jaffe, A., Naaman, M., Tassa, T., & Davis, M. (2006). Generating summaries and visualization for large collections of geo-referenced photographs. *Proceedings of the 8th ACM International Workshop on Multimedia Information Retrieval - MIR '06*, 89. <http://doi.org/10.1145/1178677.1178692>
- Kennedy, L., Naaman, M., Ahern, S., Nair, R., & Rattenbury, T. (2007). How Flickr Helps us Make Sense of the World: Context and Content in Community-Contributed Media Collections Categories and Subject Descriptors. In *ACM Multimedia*.
- Krumm, J. (2007). Inference Attacks on Location Tracks. *Pervasive Computing*, 10(Pervasive), 127–143. http://doi.org/10.1007/978-3-540-72037-9_8
- Maitland, R. (2010). Everyday life as a creative experience in cities. *International Journal of Culture Tourism and Hospitality Research*, 4(3), 176–185. <http://doi.org/10.1108/17506181011067574>
- Maitland, R. (2013). Backstage Behaviour in the Global City: Tourists and the Search for the “Real London.” *Procedia - Social and Behavioral Sciences*, 105(0), 12–19. <http://doi.org/10.1016/j.sbspro.2013.11.002>
- MacCannell, D. (1977). Staged Authenticity: arrangements of Social Space in Tourist Settings. *American Journal of Sociology*, 682(3), 678–682.
- Richards, G. (2010). Tourism Development Trajectories - From Culture to Creativity? *Encontros Científicos - Tourism & Management Studies*, (6), 9–15. <http://doi.org/10.4324/9780203933695>
- Stors, N., & Kagermeier, A. (2015). Motives for using Airbnb in metropolitan tourism – why do people sleep in the bed of a stranger? *Regions Magazine*, 299(1), 17–19. <http://doi.org/10.1080/13673882.2015.11500081>
- Tulsiani, N. and Era, N. (2016) What's in a Word? Using location context to build better search tools for travel. *AirBnB Design Blog*. <http://airbnb.design/whats-in-a-word/>
- Wang, N. (1999). Rethinking authenticity in tourism experience. *Annals of Tourism Research*, 26(2), 349–370. [http://doi.org/10.1016/S0160-7383\(98\)00103-0](http://doi.org/10.1016/S0160-7383(98)00103-0)
- Yannopoulou, N., Moufahim, M., & Bian, X. (2013). User-Generated Brands and Social Media: Couchsurfing and Airbnb. *Contemporary Management Research*, 9(1), 85–90. <http://doi.org/10.7903/cmr.11116>