

MAPPING EMOTIONS AND WELL-BEING EVOCATIVE PLACES

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OVERVIEW

Well-being evocative places

- Tangible and intangible characteristics
- Mapping emotions

Urban planning perspective vs. GIScience perspective

Virtual places: games and simulations

Conclusions and further research



INTANGIBLE CHARACTERISTICS OF PLACES

INVISIBLE GEOGRAPHIES



Visible characteristics of places |
tangible

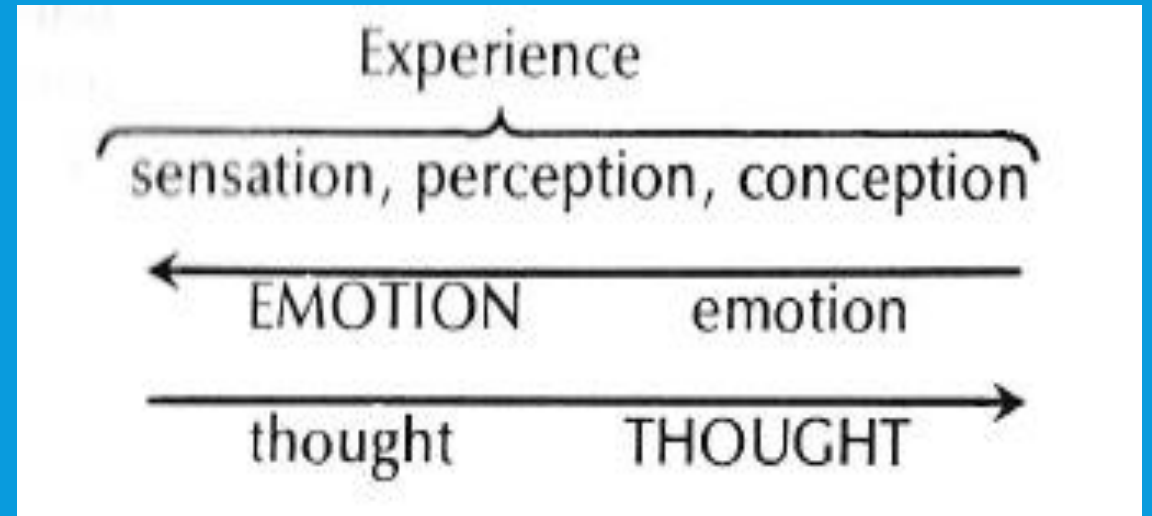
**Invisible characteristics of places |
intangible**

- Sensual geographies (Rodaway 1994): body and senses
- Emotional landscapes (Krinke)
- Healthy landscapes
- Healing landscapes

- Mapping: fuzzy objects (Burrough and Frank 1996)
- Emotions & Cartography

EXPERIENCE AND PLACE

...people construct their reality through their experience. The experience can range from “more direct and passive senses of smell, taste, touch, to active visual perception and the indirect mode of symbolization (p. 8)”, and is “compounded of feeling and thought” (Yi-Fu Tuan 1977, p. 10)



Experience and place (Tuan 1977)

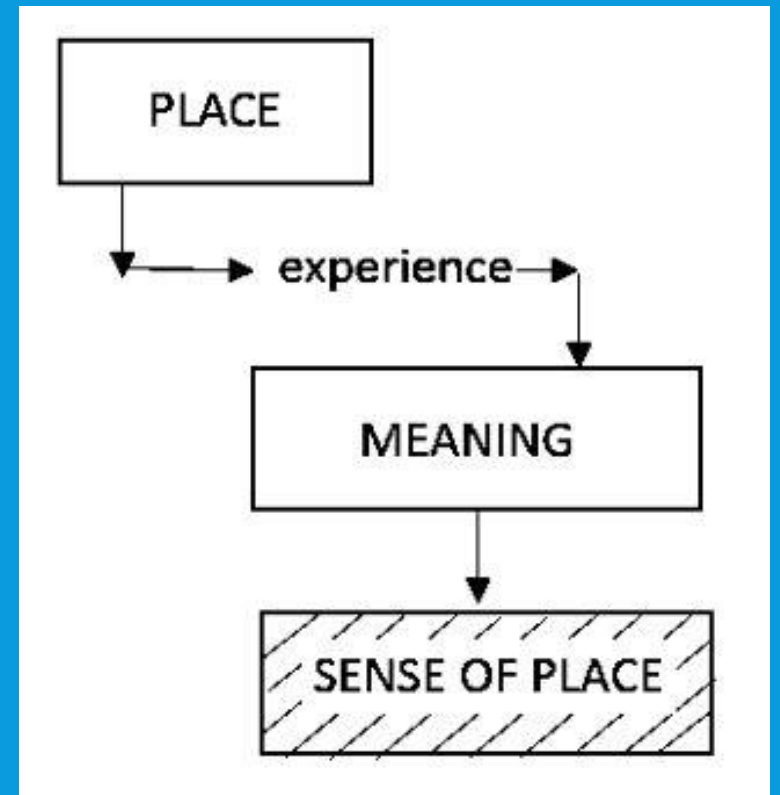
SENSE OF PLACE

...places are “**spaces that people have made meaningful**”; a place is therefore defined as a **meaningful location**.

“Place is how we make the world meaningful and the way we experience the world. Place, at a basic level, is space invested with meaning.....

(Cresswell 2004, p. 4).

Cresswell (2004) in his book *Place: a short introduction*



WELL-BEING EVOCATIVE PLACES

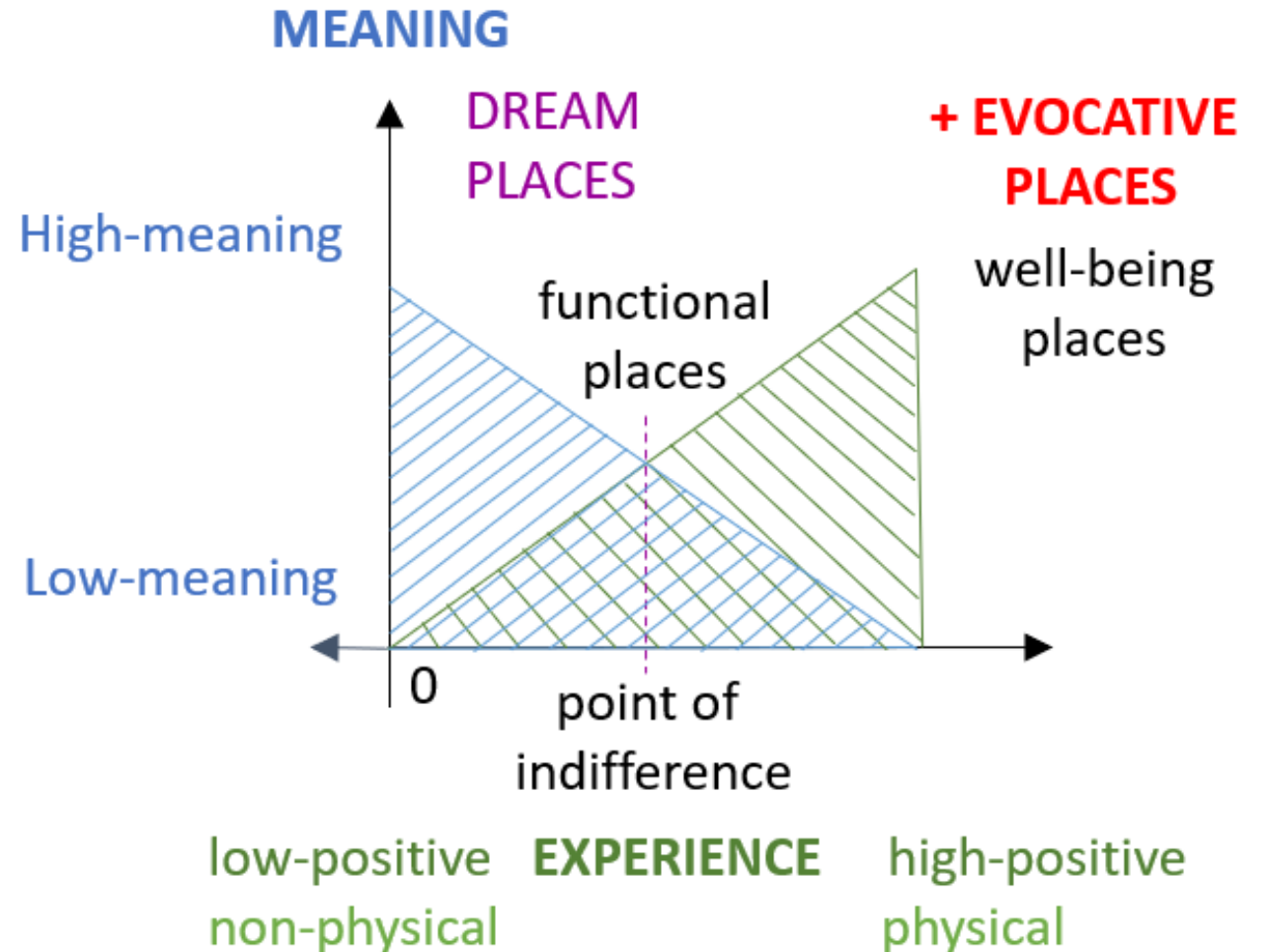
...people construct their reality through their **experience**.

Experience and place (Tuan 1977)

...places are “**spaces that people have made meaningful**”; a place is therefore defined as a **meaningful location**.

Place: a short introduction (Cresswell 2004)

An **evocative place** is a place that evokes emotions, images and memories.



MAPPING EXPERIMENTS

Well-being evocative places: select places at which you feel recharged, relaxed, at peace...

Locations

- share the location of your self-selected evocative place

Characteristics

- choose words freely

Emotions

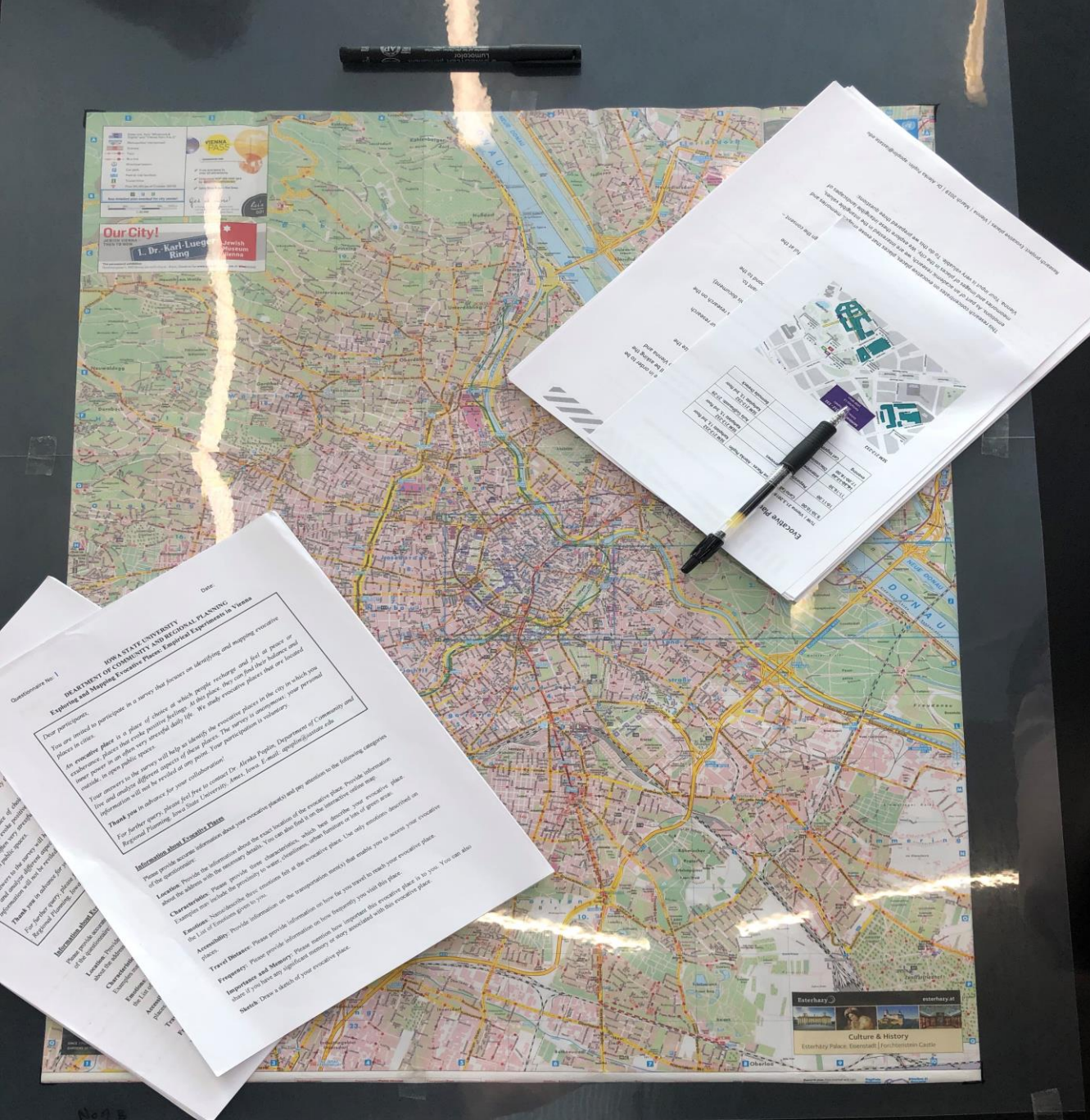
- choose from the list of emotions

Accessibility

- the mode of transportation

Sketch (paper map)

Basic information about participants



EXPERIMENTS CONDUCTED SO FAR...

Europe: Hamburg (Germany) and Vienna (Austria)

North America: Ames and Grinnell (Iowa)

South America: Vitória and Belo Horizonte (Brazil)

Thank you to my local collaborators:

- Vitória and Belo Horizonte: Bruno de Andrade (originally from Vitória (Brazil), Delft University of Technology)
- Vienna: Georg Gartner and Silvia Klettner, Vienna University of Technology
- Grinnell: Elizabeth Queathem, Grinnell College
- Ames: my students at Iowa State University

Help with the datasets: Erin Duffer (Vienna), Shoaib Mahmud (Ames, Vitória and Belo Horizonte)

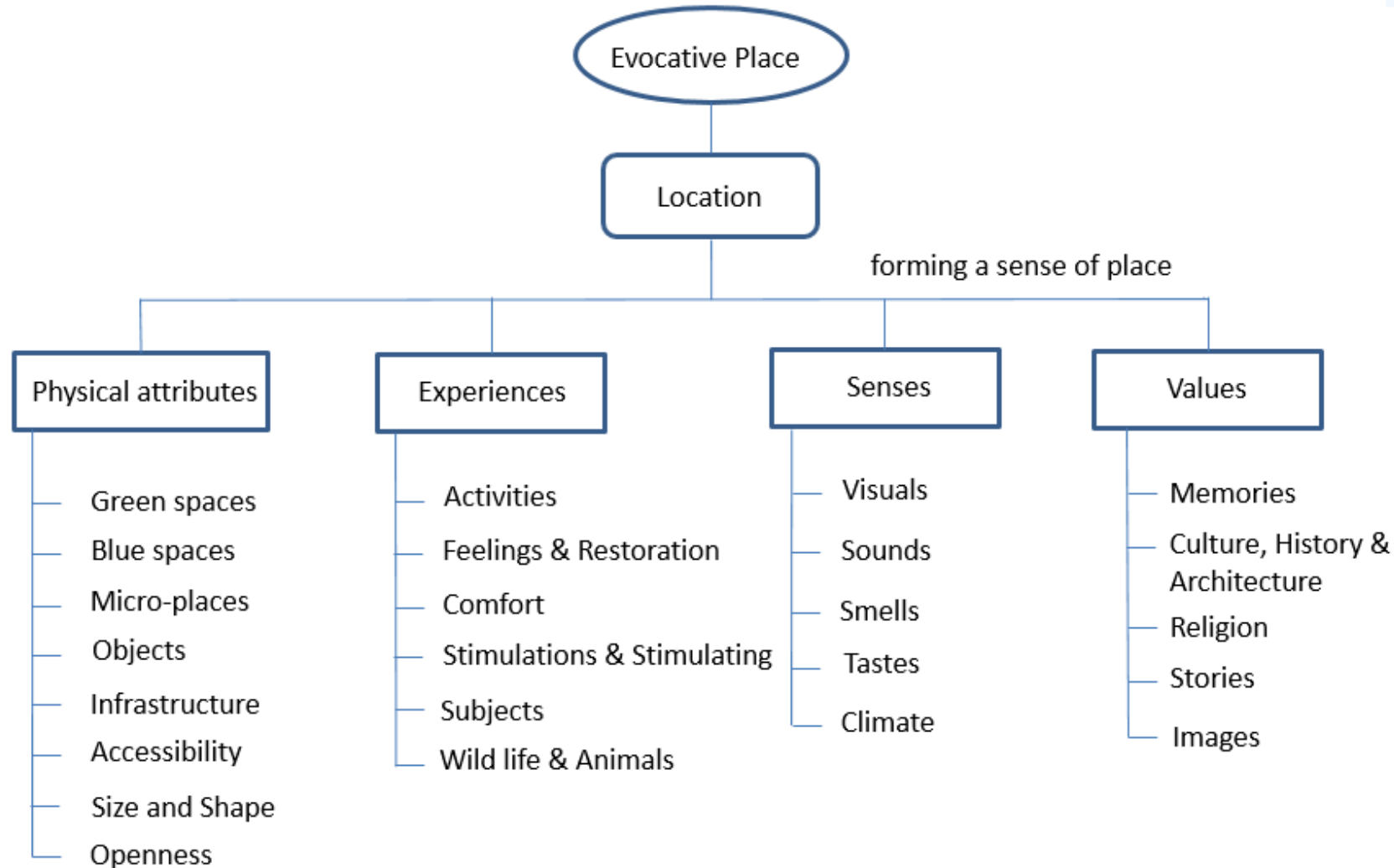


THE CONCEPTUAL MODEL OF AN EVOCATIVE PLACE (2022)

Several iterations

- 2,300 words for characteristics
- 2,100 words for emotions

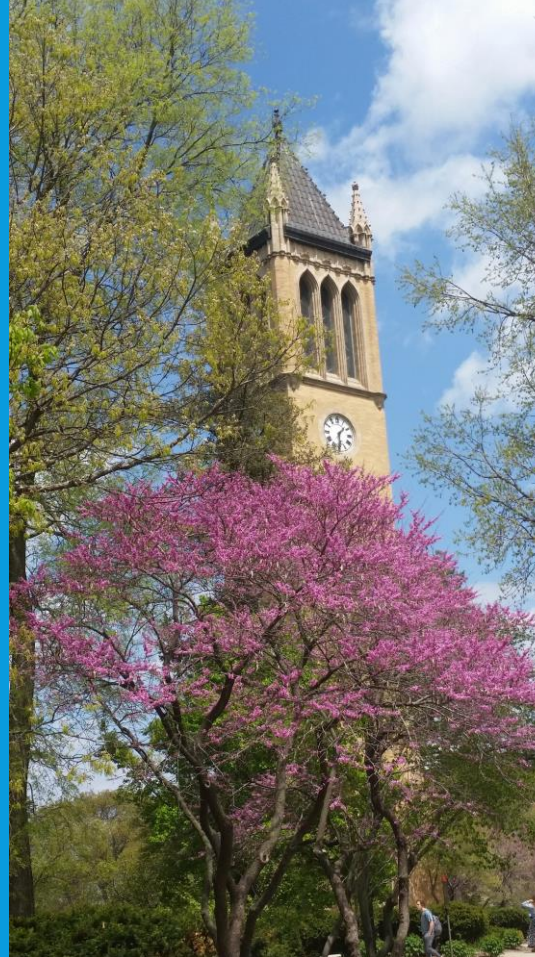
Inter-Rater Reliability Test



CHARACTERISTICS OF EVOCATIVE PLACES

Physical attributes are tangible and visible

- **Green spaces:** parks, meadows, trees, flowers
- **Blue spaces:** water forms
- **Micro-places**
- **Objects:** benches, buildings, restaurants, coffee places, libraries
- **Infrastructure:** (lines) paths, roads, streets



CHARACTERISTICS OF EVOCATIVE PLACES

Physical attributes are tangible and visible

- **Accessibility:** how can this place be physically accessed
- **Size and shape:** wide, narrow, large, small
- **Openness:** open, closed



CHARACTERISTICS OF EVOCATIVE PLACES (CONT.)

Experiences are related to the **intangible characteristics** of a place and may encompass:

- **Activities:** jogging, walking, reading, swimming, studying
- **Feelings & restoration:** meditation, inner peace, content, peaceful, happy, invigorated, in love,...
- **Comfort:** feel comforted
- **Stimulation:** motivating, fun, inspiring, invigorating
- **Subjects**
- **Wild life & Animals**



CHARACTERISTICS OF EVOCATIVE PLACES (CONT.)

Senses: ways of perceiving / methods of perception

- **Visuals:** views
- **Smells**
- **Climate:** warm, cold, sunny, nice weather
- **Tastes:** food and drinks



Sounds: loud, quiet, music, silent, birds chirping



Jun 24, 2022, 21:31

Vienna, 2022, Museumsquartier

CHARACTERISTICS OF EVOCATIVE PLACES (CONT.)

Values: historical or personal values

- Memories
- Culture, History & Architecture
- Religion
- Stories
- Images



Feelings Inventory

Feelings When You Feel Satisfied

AFFECTIONATE compassionate friendly loving open hearted sympathetic tender warm	EXCITED amazed animated ardent aroused astonished dazzled eager energetic enthusiastic giddy invigorated lively passionate surprised vibrant	EXHILARATED blissful ecstatic elated enthralled exuberant radiant rapturous thrilled
ENGAGED absorbed alert curious engrossed enchanted entranced fascinated interested intrigued involved spellbound stimulated	GRATEFUL appreciative moved thankful touched	PEACEFUL calm clear headed comfortable centered content fulfilled mellow quiet relaxed relieved satisfied serene still tranquil trusting
HOPEFUL expectant encouraged optimistic	INSPIRED amazed awed wonder	REFRESHED enlivened rejuvenated renewed rested restored revived
CONFIDENT empowered open proud safe secure	JOYFUL amused delighted glad happy jubilant pleased tickled	

FEELINGS INVENTORY

Emotions

Difficult to:

- Measure
- Express
- Evaluate
- Map

Changing

Intangible

Not a typical object

Uncertainties in the meaning attached to the word

Rosenberg, M. B. (1999). *Nonviolent Communication: A Language of Compassion*. Encinitas, CA, PuddleDancer Press.

Further references: The Center for Non-Violent Communication

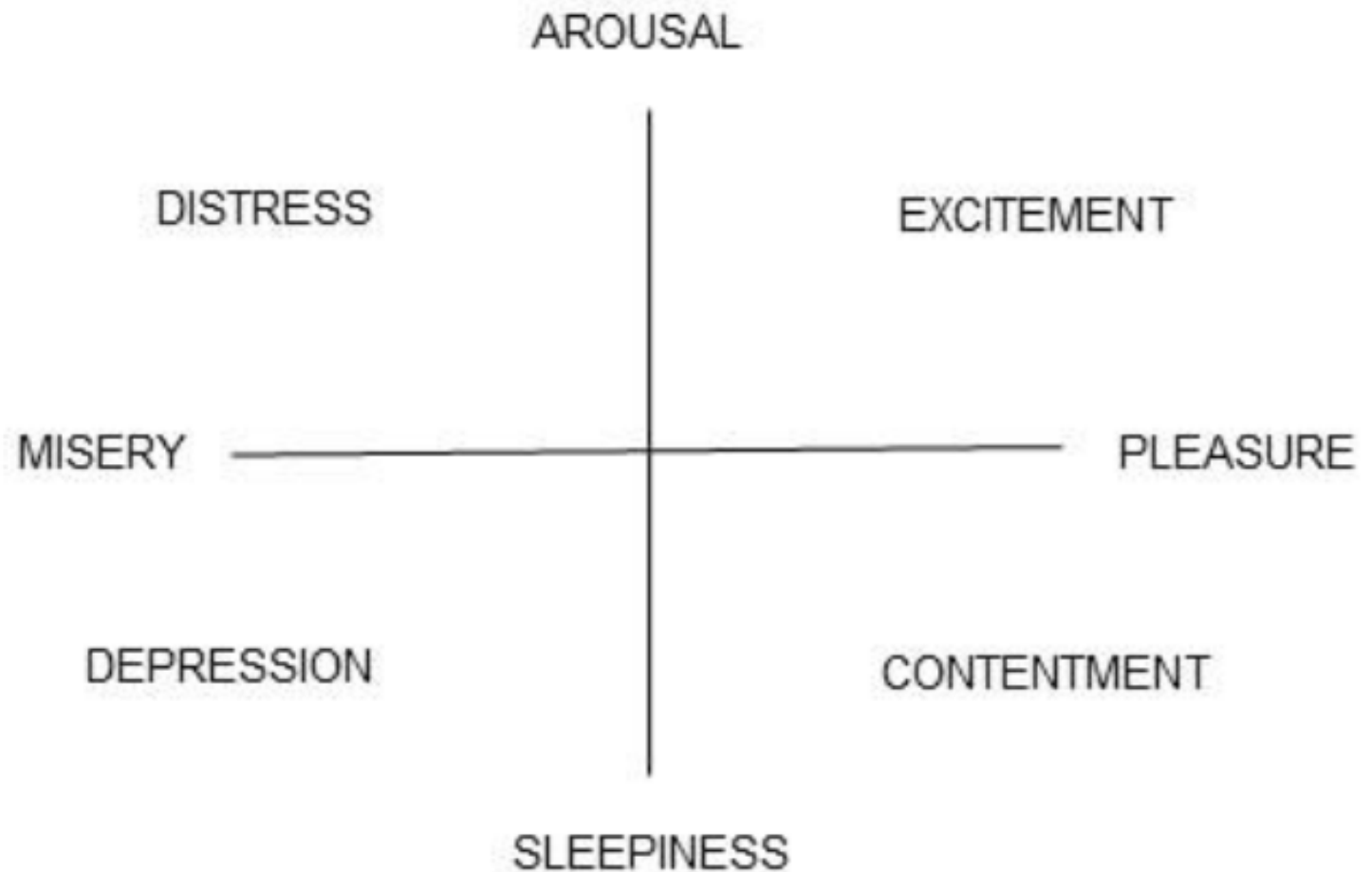
<https://www.cnvc.org/training/resource/feelings-inventory>

CIRCUMPLEX MODEL OF AFFECT (RUSSELL 1980)

Russell's (1980)

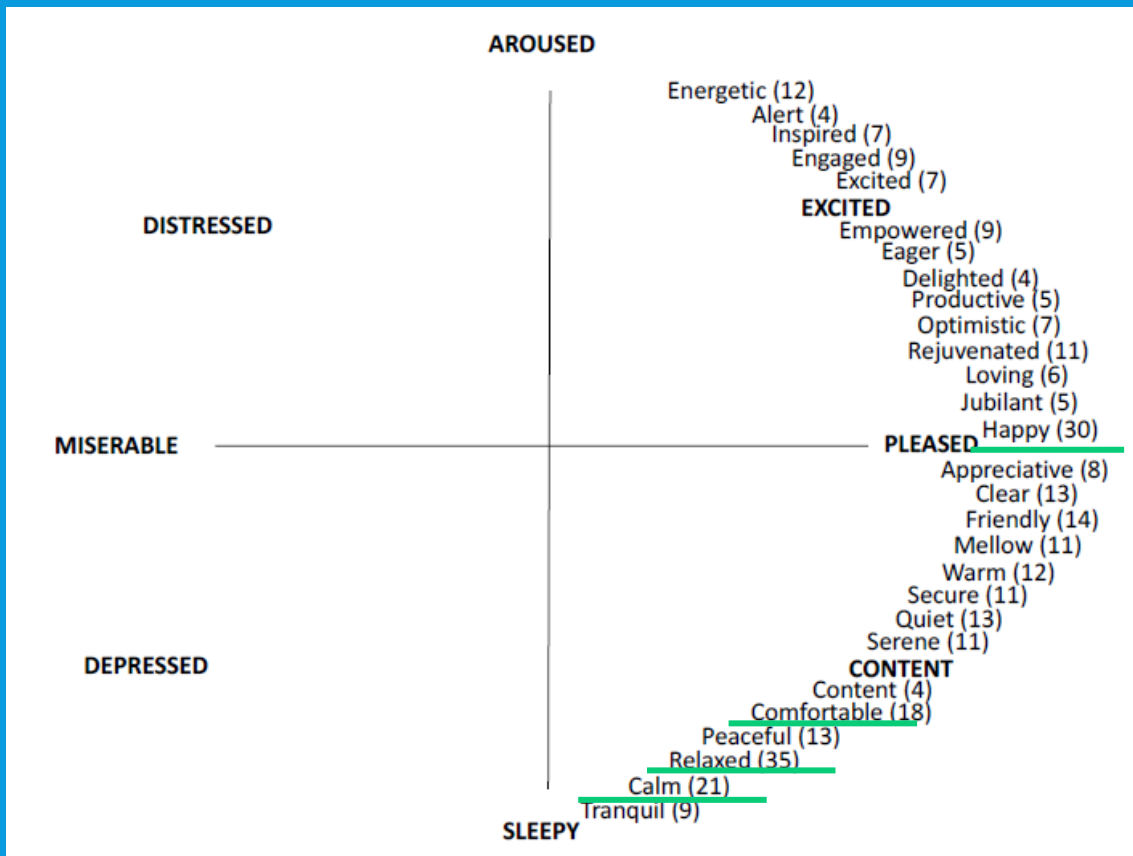
Circumplex Model of

Affect representing eight affect concepts in a circular order

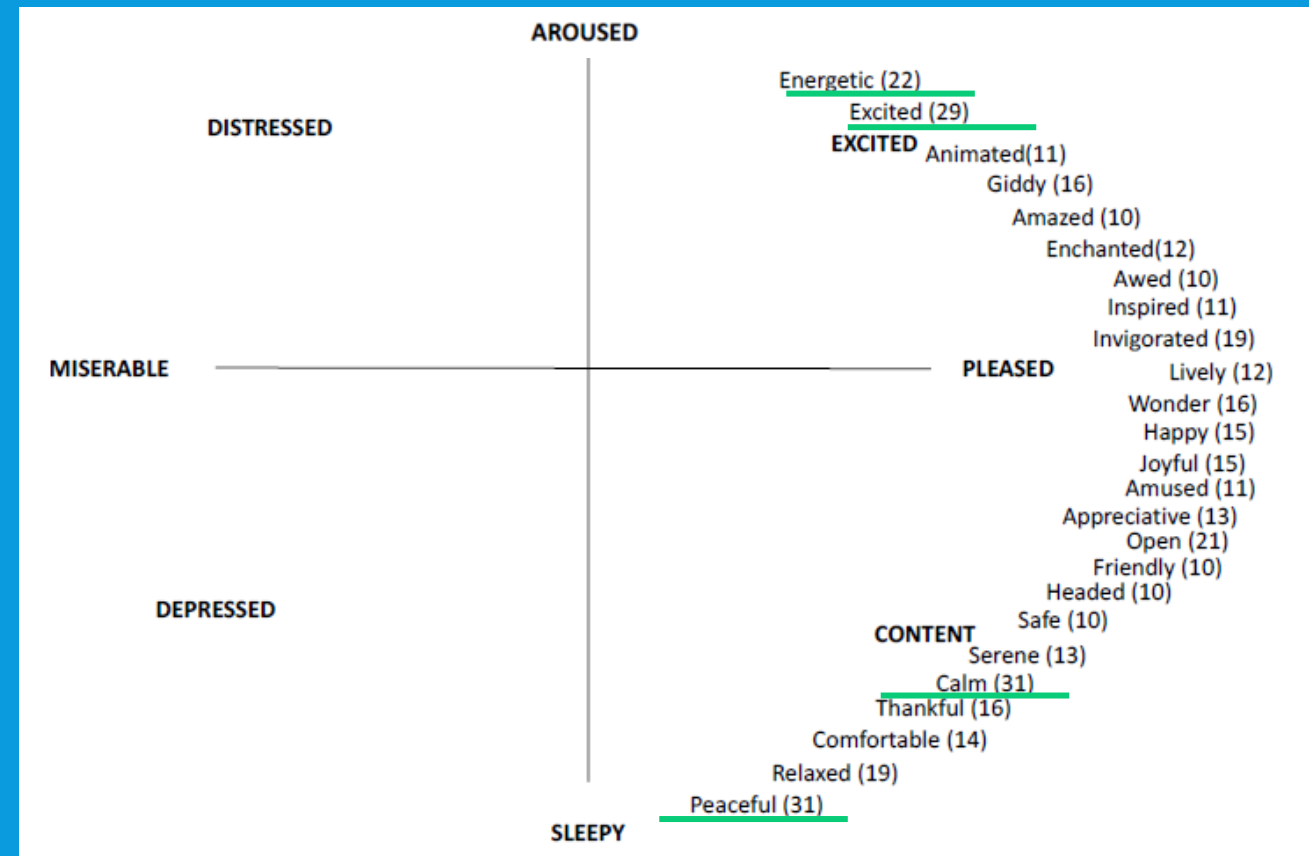


EMOTIONS AT WELL-BEING EVOCATIVE PLACES

AMES



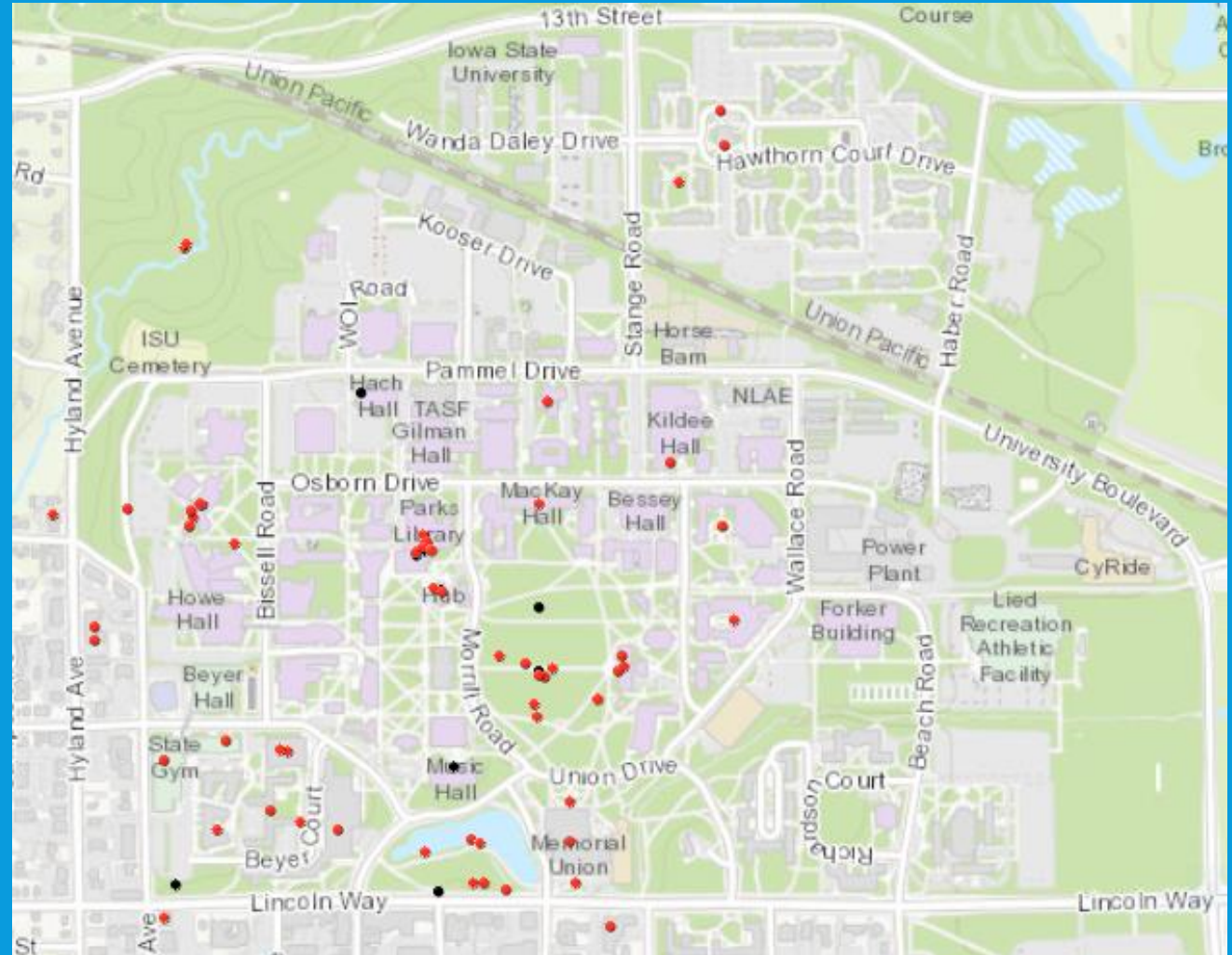
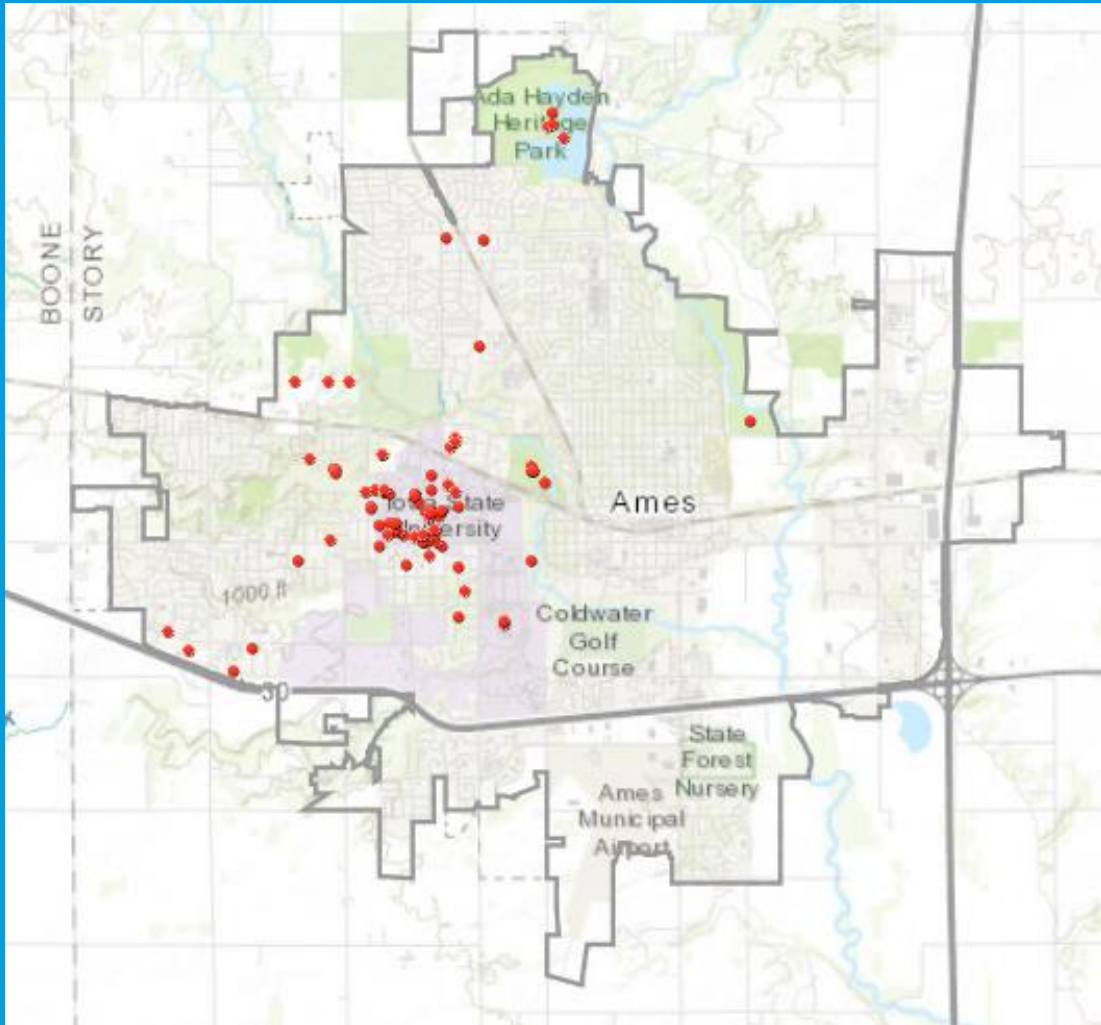
VITÓRIA



UNDERSTANDING EVOCATIVE PLACES CAN HELP TO CREATE HAPPY AND HEALTHY CITIES & CITIZENS



EVOCATIVE PLACES ARE WALKABLE



INTERNATIONAL COMPARISON: INDOOR VS. OUTDOOR

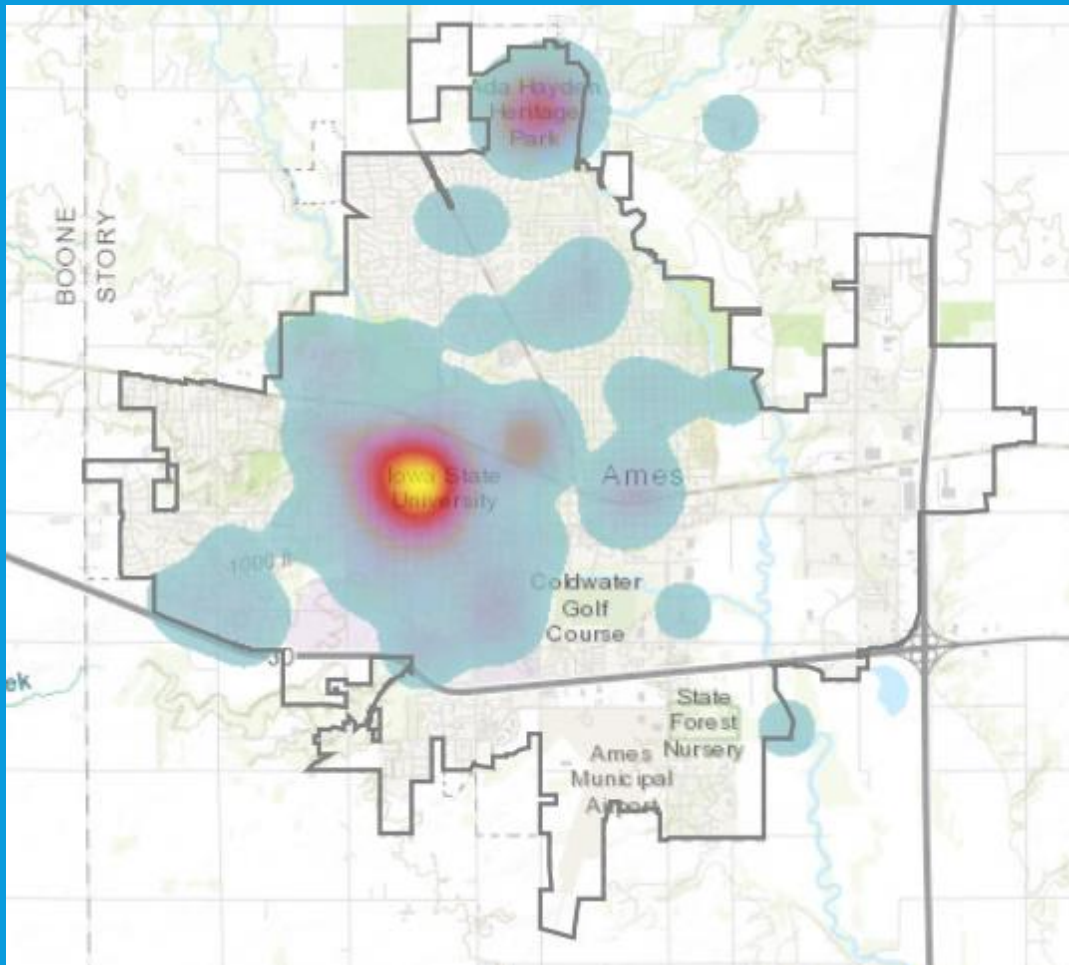
- The majority of evocative places selected in **Europe and Brazil (based on the selected cities)** are places that can be found outside. They include parks, beaches, parts of the roads, outdoor coffee places, recreational centers, golf places, farmers' markets.
- The residents of the cities in the US, tend to spend much more relaxing time indoor.

AMES

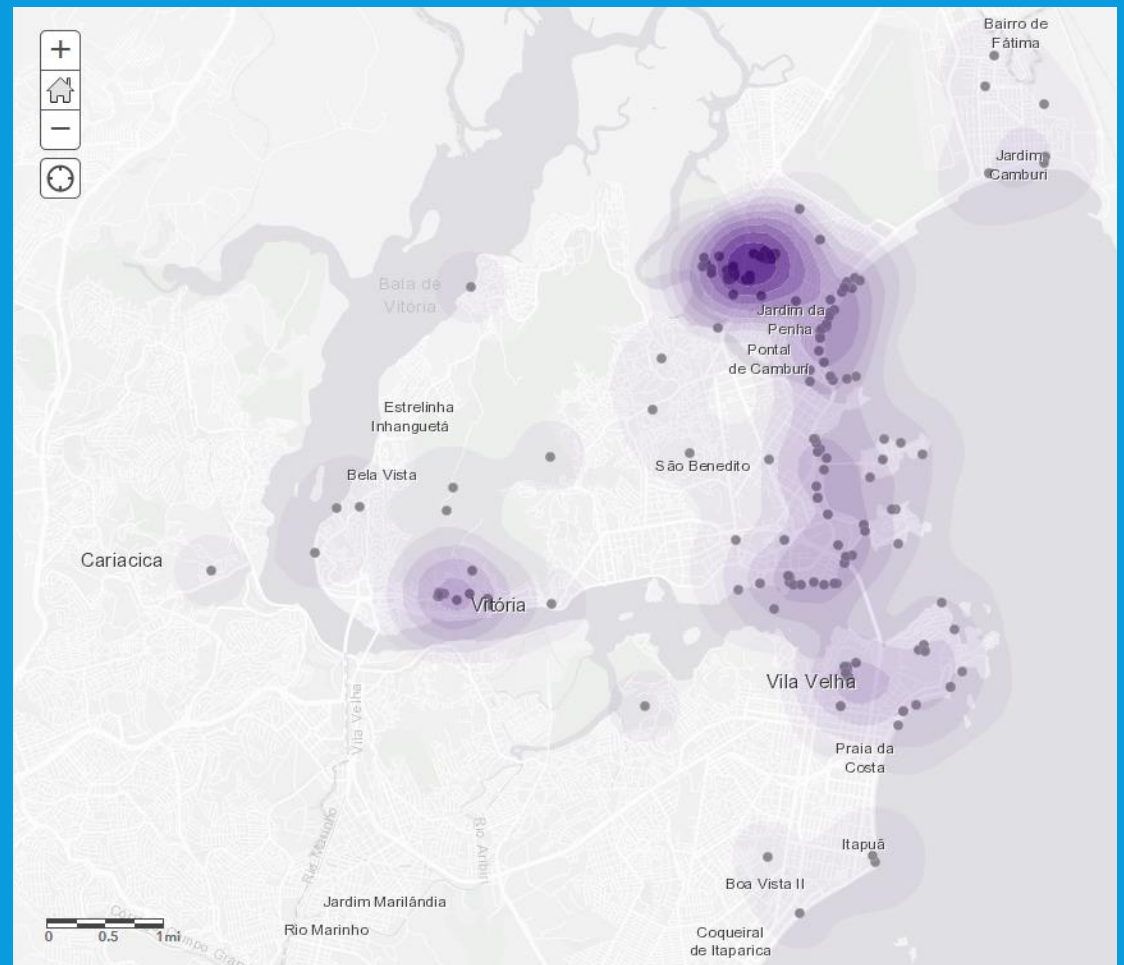
Place/location	Includes (number of places)
Outdoor evocative places together (118)	Park (61), University campus (35), Avenue, road, street (13), Coffee place (5), Jack Trice Stadium (2), Recreation centre, golf (1), Farmers' market (1)
Indoor evocative places together (74)	University building, hall, home, library (60), Restaurant (9), coffee place (5), Recreation centre, gym (5)

CONCENTRATIONS OF EVOCATIVE PLACES

AMES



VITÓRIA



Online map of Vienna: <https://arcg.is/o4Xvf5>

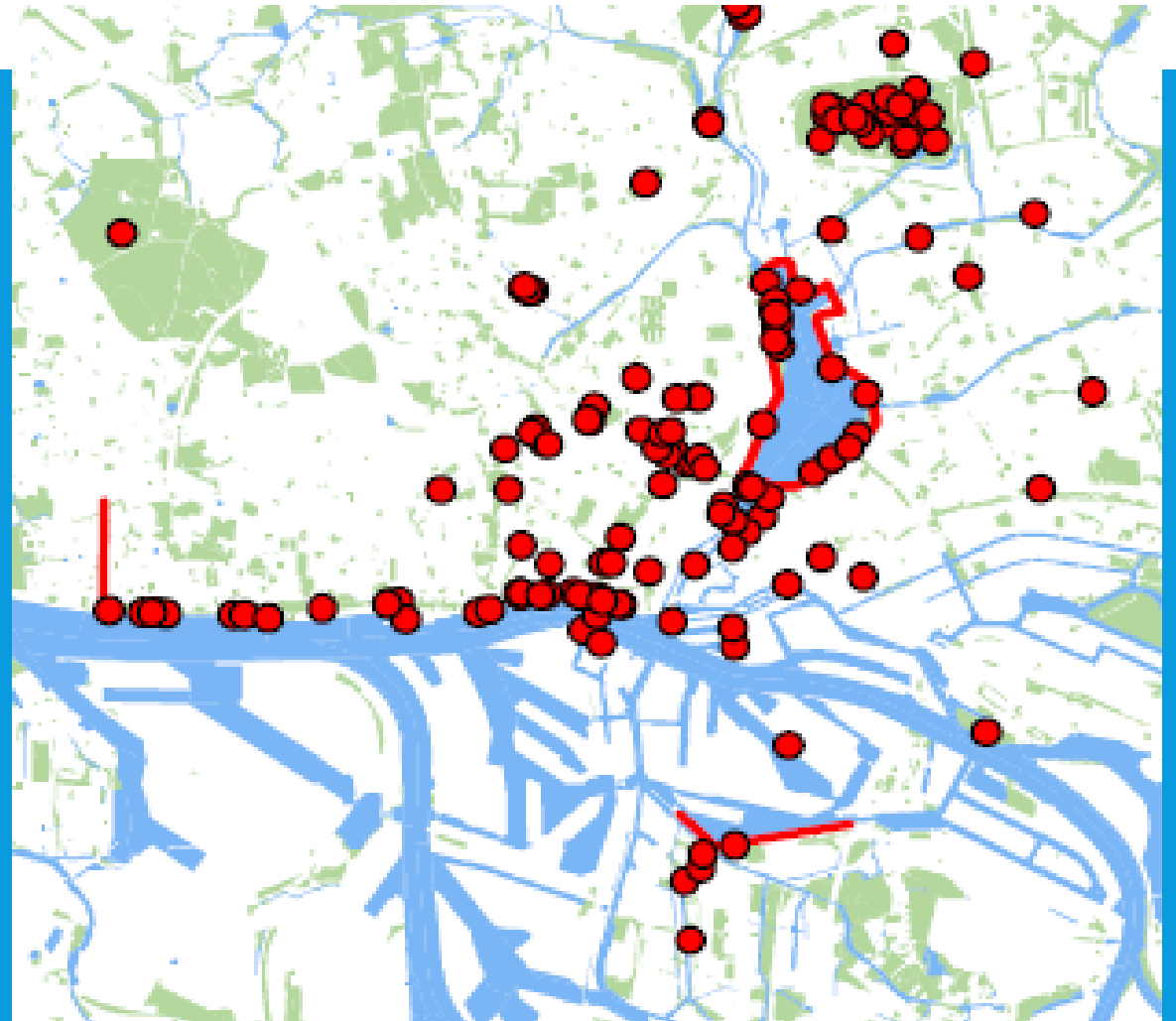
Alenka Poplin | apoplin@iastate.edu

MAPPING FUZZY OBJECTS: THE SHAPE OF THE PLACE

Points – Lines – Polygons

Often, the shape of an evocative place may be different than just a point; the whole park might be considered a power place or just a walking path along the lake.

Figure shows the linear shapes of indicated power places which are the paths around the Alster Lake where people enjoy jogging, walking their dogs or meeting friends for a long walk.



MAPPING FUZZY OBJECTS: PLACE'S BORDERS

Fuzziness of the place's border

Places often do not have clear, well-defined borders. Examples: “in front of the school”, “in the back yard”, or “at the lake near a restaurant”.

The borders of a place are often fuzzy, which does not seem to impact the concept or pleasure of the place, but rather becomes an essential part of how places are perceived, memorized and experienced by human beings.

Winter, S. (2009): Does Place have a Place in Geographic Information Science?

Goodchild, M. (2011): Formalizing Place in Geographic Information Systems

Winter, S. (2013): The Impact of Classification Approaches on the Detection of Hierarchies in Place Descriptions



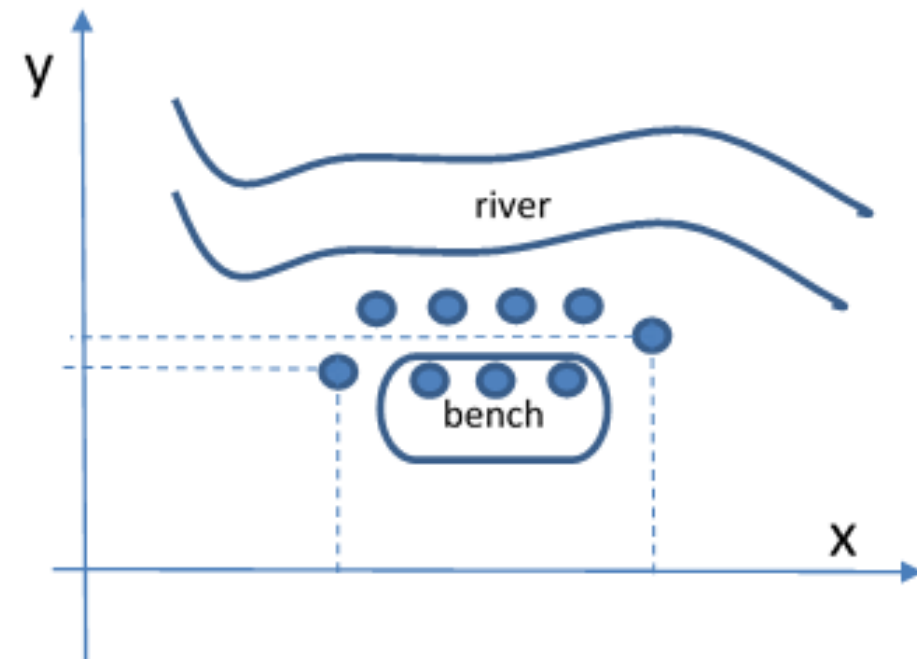
MAPPING FUZZY OBJECTS: LOCATION

Fuzziness of the location

A GIS requires a very precise location given in a latitude and longitude or coordinates.

Entering the data into the system requires from the experimenter to choose the exact location of an evocative place to be represented on a map.

Vague concept of location



MAPPING FUZZY OBJECTS: EMOTIONS

The meaning of the emotion expressed with a word selected for emotion

Inter-lingual: meanings in different languages

Possible different meanings or intensity the same or similar word may have for different participants.

Additional research is needed in this area, and especially in the area of urban emotions in which we may link the physical characteristics of places and the emotions to these places and their characteristics they may evoke.

MAPPING EMOTIONS

Emotional cartographies (Griffin 2014, Stangor 2013)

- **Using maps to understand emotions** | Emotion maps, EmoMap, mapped areas to be avoided (Doran & Lees 2005, Nold 2008, Hogertz et al 2010, Klettner & Gartner 2012)
- **Mapping emotions and experience** | Moods throughout the day, world emotion global trend (Mislove et al. 2010, Palmer & Rundkvist 2011, Benayoun 2012, Misue and Taguchi 2014)
- **Can maps provoke emotions?** | persuasive maps, aesthetic quality (Mühlenhaus 2012, Christophe & Hoarau 2012)
- **Measuring emotions** (Eckman 1975, Nummenmaa et al. 2014)

GAME-BASED ONLINE ENVIRONMENTS

B₃ – DESIGN YOUR MARKETPLACE! GAME

- Incorporating play and games
- Design the environment: the ability to change it's features
- Experiment
- Helpers and avatars
- Building a community
- Get instant feedback

The screenshot shows the user interface for the 'B3 - Design Your Marketplace! Game'. At the top left, there is a logo for 'Bürgereteiligung Illstedt' with the tagline 'Gestalten Sie Ihren Marktplatz!'. Below this is a navigation menu with buttons for 'Hauptmenü', 'Speichern', 'Hochladen', 'Spieoptionen', 'FAQ', and 'Abmelden'. A cartoon monkey avatar is positioned at the bottom left. The central area displays a 3D perspective view of a marketplace design, showing a paved plaza, a brick building, and various objects like a tree, a swing set, a fountain, a bench, and a lamp. To the right of the 3D view, there is a user profile for 'Hans Meier' with login and design statistics. Below the 3D view, there are controls for 'Kommentare', 'Seitenansicht' (with a 'Draufsicht' button), and a 'Zoom' control. At the bottom right, there is a 'Bewertung' (rating) section with five stars and 'Anzahl Bewertungen: 0'. A small box at the top right says 'Hier könnte Ihr Foto sein'.

Main menu
Save design
Upload design
Game options
FAQ

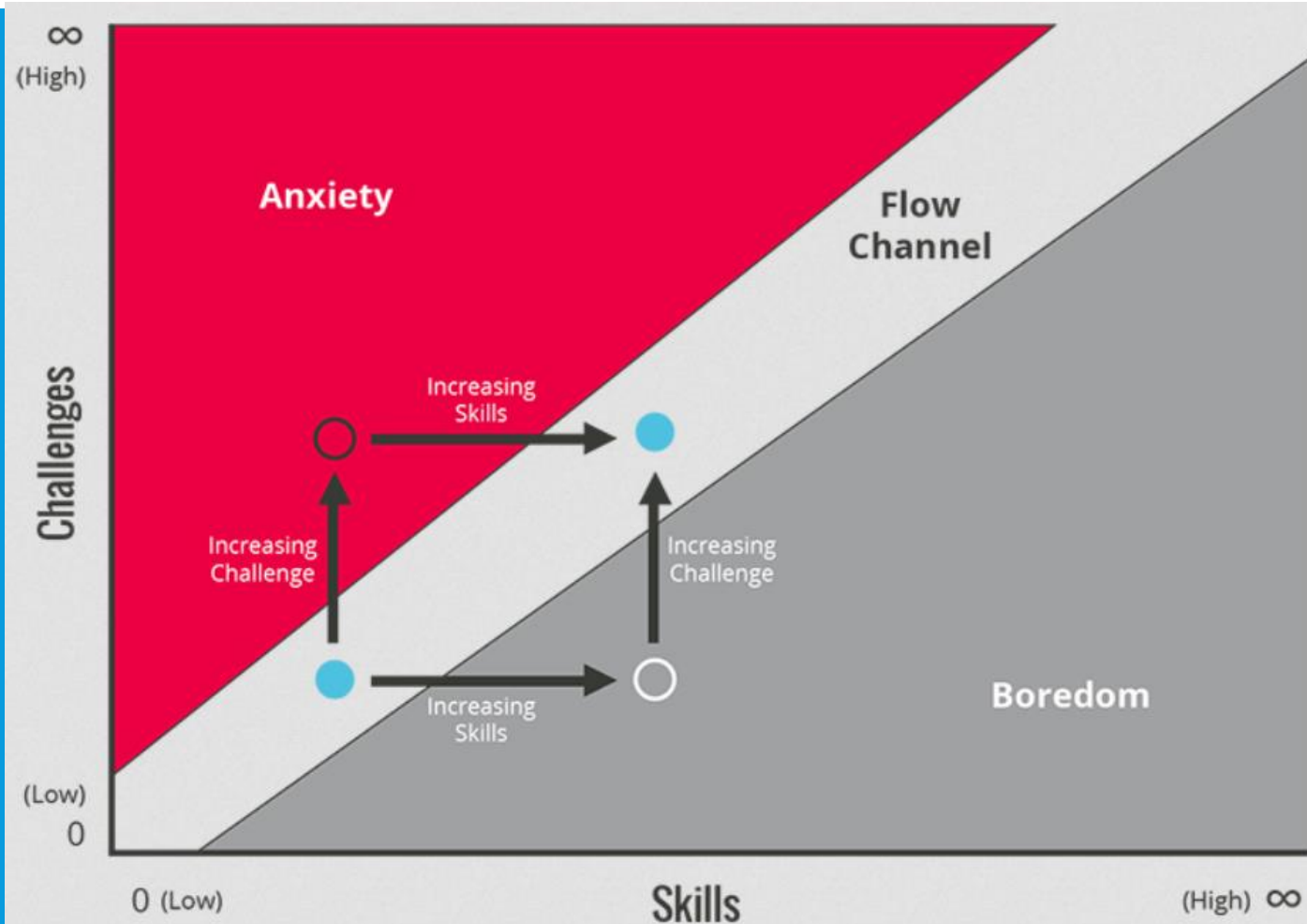
Comments
3D - View
2D - View

Evaluation
Number of
votes

FLOW: THE OPTIMAL EXPERIENCE

A better understanding of the state of flow (defined by Csikszentmihalyi, 1990)

Flow: The Psychology of Optimal Experience, Csikszentmihályi outlines his theory that people are happiest when they are in a state of *flow* - a state of concentration or complete absorption with the activity at hand and the situation. It is a state in which people are so involved in an activity that nothing else seems to matter.



DATA COLLECTION AND SIMULATION




E-FOOTPRINTS GAME | DECISION-MAKING


- Game-based simulation environment
- Studying human decision-making under different conditions
- Data collection in the back-end


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▲ ▼

TO COOL THE ROOM, PICK TWO OF THESE OPTIONS

 TURN ON A.C.

 OPEN WINDOW

 CLOSE BLINDS

 TURN ON FAN

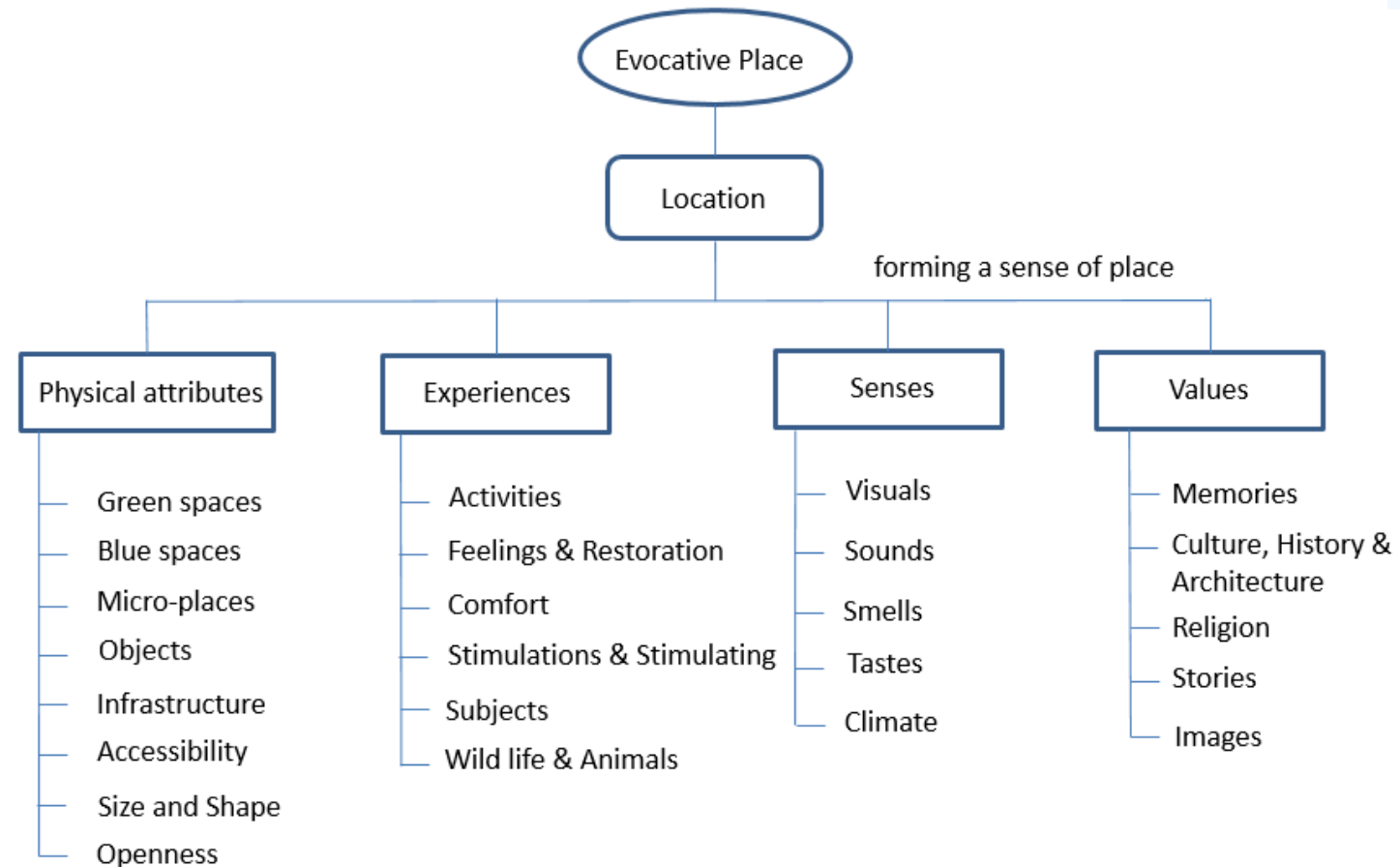
SET



CONCLUSIONS

While thinking about well-being places:

- Besides the physical attributes of these places, one needs to consider
- the intangible aspects of places; but the **experience human beings are making at these places**, how they **affect their senses** and **support their values**.



CONCLUSIONS

Online environments may encourage play, games, social connection and enable the flexibility, choices, change and design.



PLACES IN GISCIENCE | FURTHER RESEARCH

Understanding places in respect to their invisible/intangible characteristics

- which are these characteristics (emotions, smells,...)?
- how can they be described, visualized, measured

Representation of intangible “data” in a GIS

- visualization methods
- formalization methods
- categorization and their meaning

Spatial uncertainty

- descriptions of places and their different spatial features; is it a bench, the whole park or a walking path

Descriptive uncertainty

- emotions and their meaning: subjectivity



<http://platial21.platialsience.net/>

PUBLICATIONS

- Poplin, A., Duffer, E. and G. Gartner. 2022. Well-Being Evocative Places: Validating the Conceptual Model of an Evocative Place (CMEP) based on the Inter-Rater Reliability Test, *The International Cartographic Journal*, first published online on September 24, 2022.
- Poplin, A., de Andrade, B. A., and S. Mahmud. 2021. Exploring Tangible and Intangible Characteristics of Evocative Places: Case Study of the City of Vitória in Brazil, *Springer special issue on Modern Approaches to the Visualization of Landscapes*, edited by Olaf Kühne, Corinna Jenal and Dennis Edler, p. 517 – 546, Springer.
- Poplin, A. 2020. Exploring Evocative Places and their Characteristics, *The Cartographic Journal*, Volume 57, Issue 2, p. 130 – 146, published online on March 2, 2020.
- Poplin, A. 2018. Cartographies of Fuzziness: Mapping Places and Emotions, *The Cartographic Journal*, Volume 54, Issue 4, p. 291-300.
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- Russell, J. A. (1980). A Circumplex Model of Affect. *Journal of Personality and social Psychology*, 39 (6), p. 1161-1178.



Community Engagement
Living Lab



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email: apoplin@iastate.edu

GeoGames Lab: <https://geogameslab.net/>

Community Engagement Living Lab:
www.communityengagementll.net

[URL:http://www.design.iastate.edu/FACULTY/apoplin.php](http://www.design.iastate.edu/FACULTY/apoplin.php)

Facebook/geogameslab