

Regards on 3D Participatory E-Planning Through 3 Project Proposals



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Participatory E-Planning & 3D

*“We are 21st-century citizens,
doing our very, very best to
interact with 19th
century-designed institutions
that are based on an information
technology of the 15th century.”*

Pia Mancini, co-founder of Democracy
Earth and Open Collective. 2014.

[Source](#)



Role of E-Participatory Platform in Urban Planning

Make **citizen-centered decisions** based on the public's local knowledge

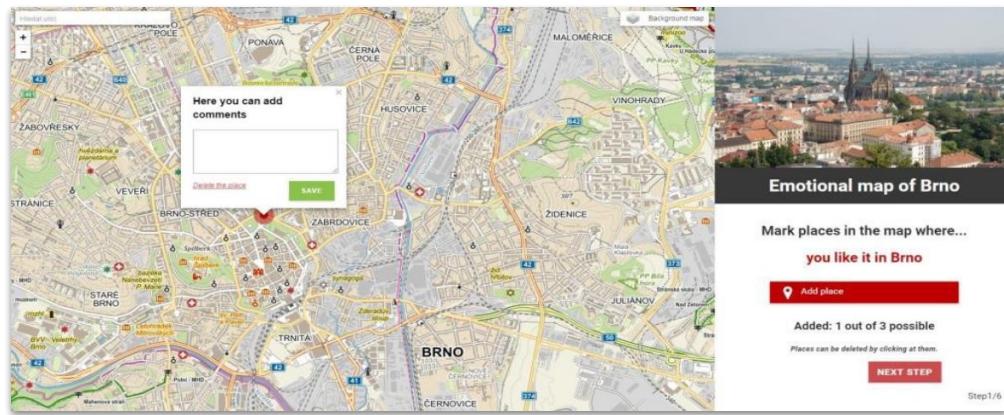
Help citizens to easily provide insights, opinions, feedbacks on urban projects



Chassin T., Ingensand J., and Joerin F. Towards the use of a 3D virtual globe to support public participatory decision making : short papers of the 21th AGILE Conference on Geographic Information Science. Lund University 12-15 June 2018, Lund, Sweden. 2018. [Source](#)



Unlimited Cities.
[Source](#)



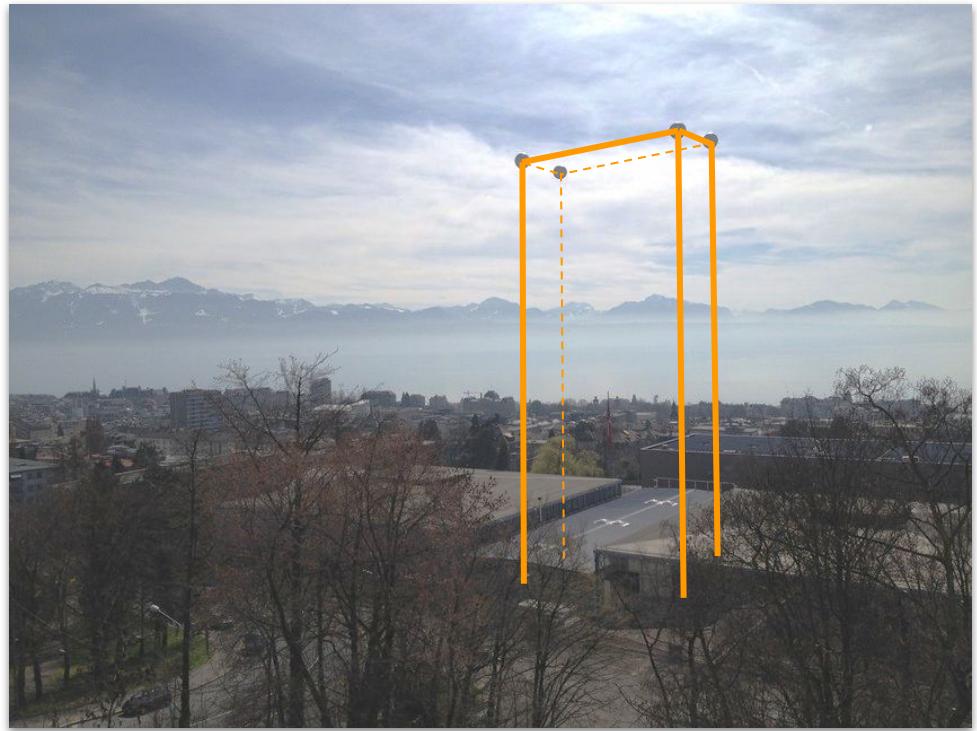
Pánek J., Pászto V. Crowdsourcing Mapping and Participatory Planning Support System: Case Study of Brno, Czechia. In: Peterson M. (eds) Advances in Cartography and GIScience. ICACI 2017. Lecture Notes in Geoinformation and Cartography. Springer, Cham. 2017. https://doi.org/10.1007/978-3-319-57336-6_5

Lausanne's Taoua Tower

Location: Lausanne, Switzerland

Starting date: 2011

Ending date: 2014, rejected by citizens



24heures.ch

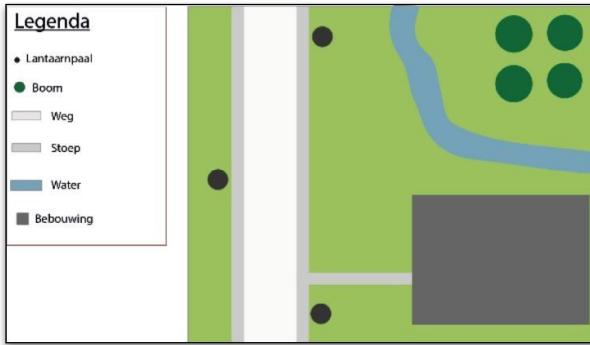
Benefit of Interactive 3D Platforms

Support the **appropriation** of a hypothetical future urban project

Straightforward
representation of volumes

Less bias in representation
of the environment

Merge the participants'
cognition spaces



Hermans-van Ree. *The Rotterdam 3D City Model, from Innovation to Implementation. 3D GeoInfo. Delft. 2018 - [Source](#)*

3D Participatory E-Planning Tools



Virtual reality



Chowdhury 2019 - [Source](#)

Virtual promenades

Experience 4D

Session Regarding the construction of new bicycle paths

Question types:

- Rating 100-Main à 0-Basique
- Answer with a numeric value
- Proposez de nouvelles cyclables pour 2019, 2020 et 2021

Question 5

B.1 The City of Montréal wants to build new bike paths for the years 2019, 2020 and 2021. Please choose how many paths will be built by entering their respective numbers. Note: the number of a bike lane will be displayed when selected on the screen. Note: The construction of bike lanes for the years 2019 and 2020 will be done in the same year. The same goes for the year 2021. Please indicate the number of bike lanes for each year. For example, only one 2019 bike lane with a connection to those shown in 2020 will be built.

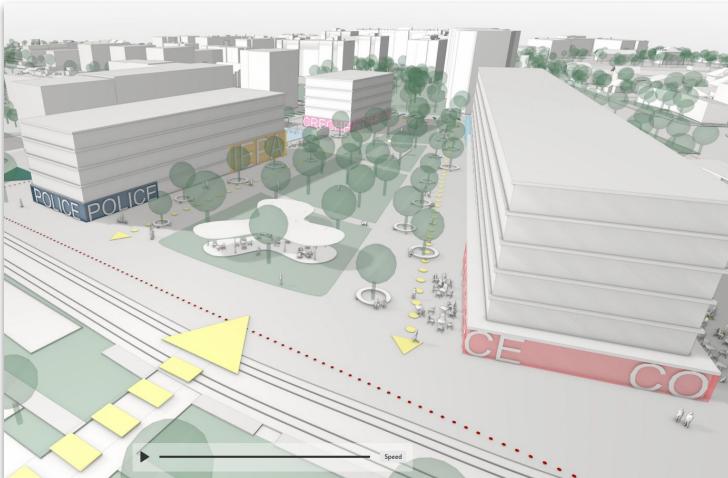
Proposez de nouvelles cyclables (entre 0 à 10)

B.2 What has helped you answering this question?

- I do not know
- I do not care
- I visualize the evolution of the bicycle paths constructed
- I visualize the evolution of my choice satisfaction
- All these answers
- Others (Please specify)

3D geo-survey

Lafrance 2019 - [Source](#)

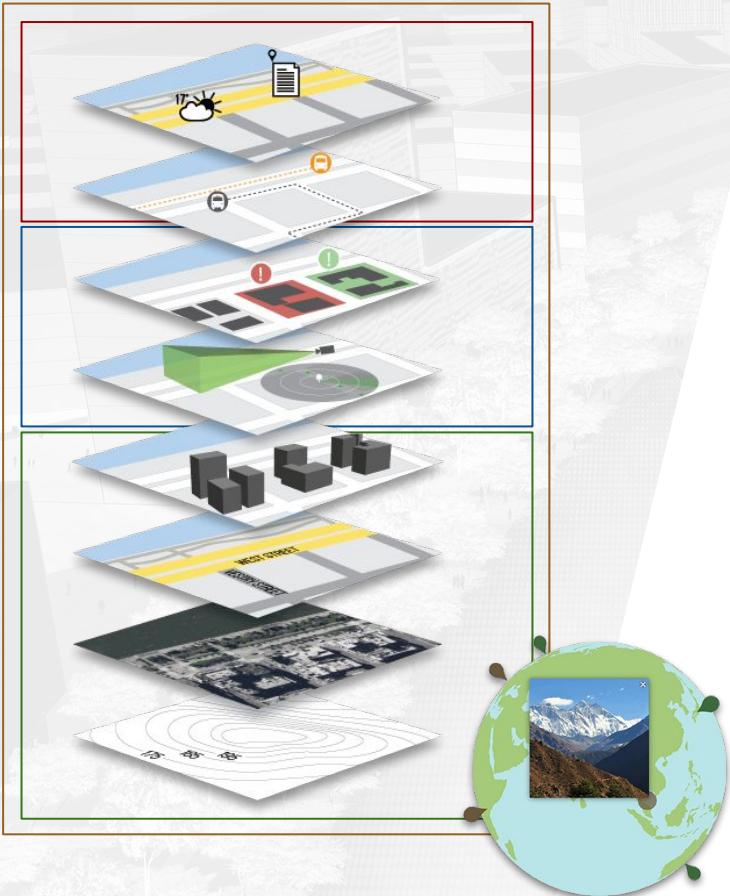


Geneva 2021 - [Source](#)

EPFL

Project Proposals in a Swiss Context

Solutions based on a Virtual Globe



Participation Functionality



- Entry cost
- Type
- Data collection
- Synchronous / asynchronous

Virtual Engagement



- Controls
- Interactions
- Scales
- User-friendliness

Data Usability



- Data availability
- Data fusion
- Relevant data selection
- Portrayals (abstract/realist)

Participatory Context



- Aspects under negotiation
- Topic(s)
- Targeted public
- Communication



Not the Good Timing

The project:

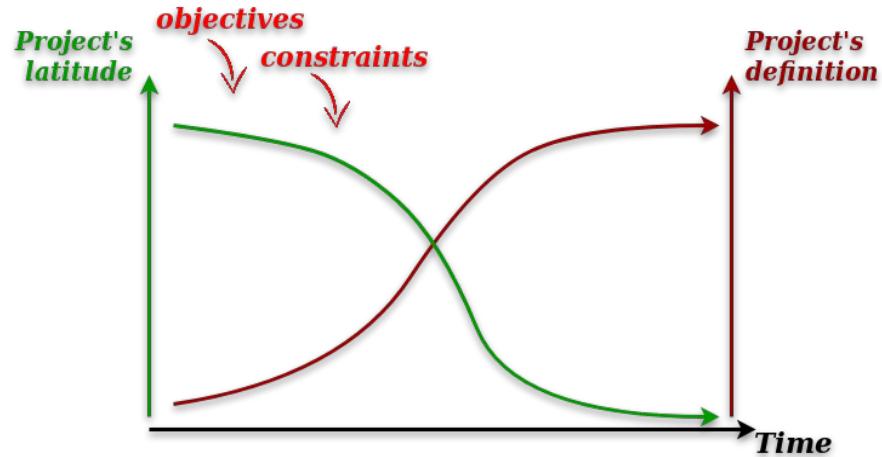
3 clusters of buildings

Tense relation with the public



Select the clusters' heights
based on a defined volume

Chassin T., Ingensand J., and Joerin F., Towards the use of a 3D virtual globe to support public participatory decision making : short papers of the 21th AGILE Conference on Geographic Information Science. Lund University 12-15 June 2018, Lund, Sweden. 2018. [Source](#)



***“Too risky to show 3D visuals yet,
opposition groups could use it against us”***

Midler C., L'auto qui n'existe pas, InterEditions. 1993

EPFL

Webinar 3D et géospatial - 04.11.2021 / 10

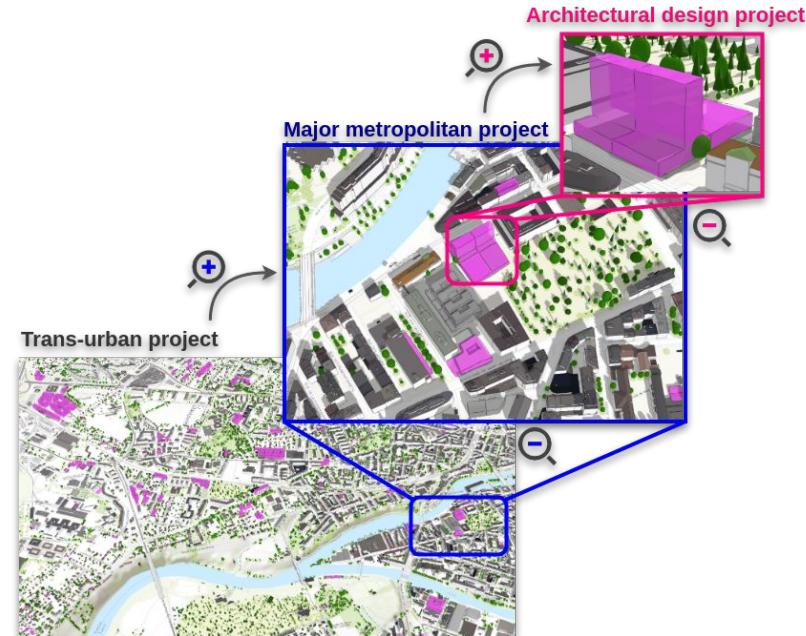


Not the Good Scale

The project:
City's Master plan revision
that includes the population



Emotional 3D map



“Can we use only the 2D map”

Chassin, T., Ingensand, J., Lotfian, M., Ertz, O., and Joerin, F.: Challenges in creating a 3D participatory platform for urban development, *Adv. Cartogr. GIScience Int. Cartogr. Assoc.*, 1, 3, <https://doi.org/10.5194/ica-adv-1-3-2019>, 2019.

Arab, N., Activité de projet et aménagement urbain : les sciences de gestion à l'épreuve de l'urbanisme. *Management & Avenir*, 12, 147, 2007.

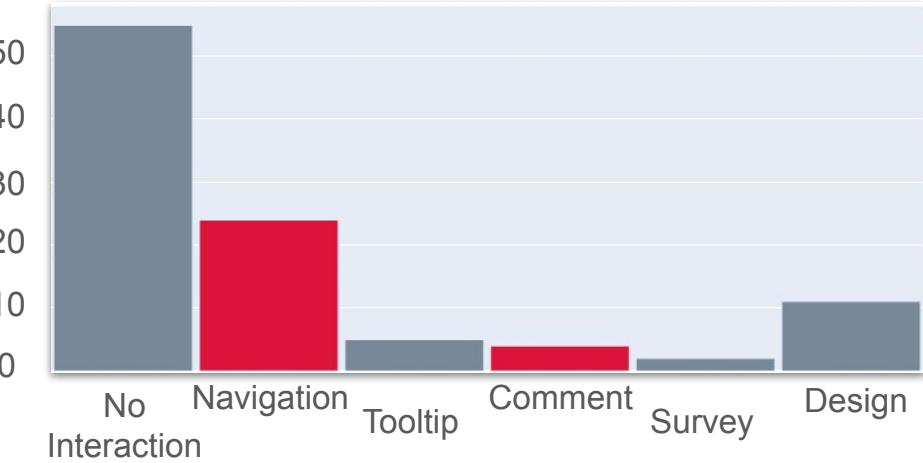


Too Complex

The project: Visualization of the city's future urban projects



Depiction of 3D models
combine with attached
information



“We were more thinking about an interactive illustration with nice drawings”

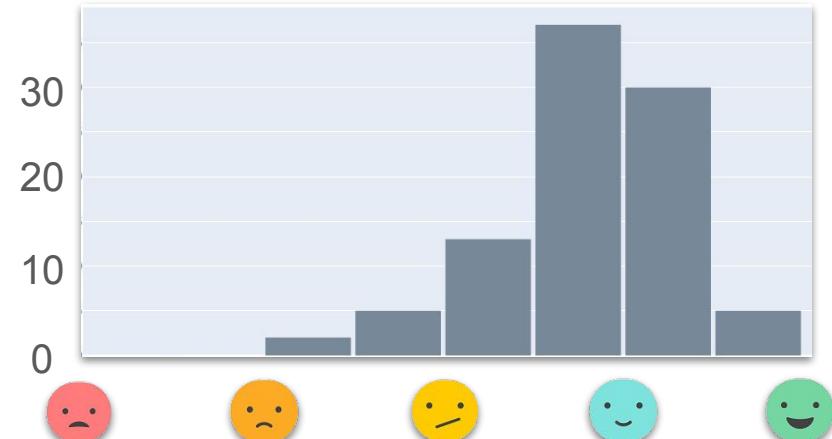
Barriers in the Adoption of 3D Participatory E-Planning Tools

Overall tone employed by the press
to speak about 3D visualizations

Use of deep learning
to classify the articles

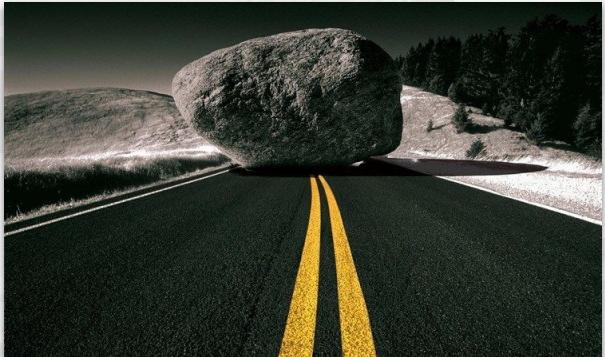
NLP Sentiment analysis on
the newspaper articles found

Pre-train model that
classifies sentences from
1 :(to 5 :)



Why the authorities do not adopt more 3D visualizations in their urban projects?

Barriers



[Source](#)

Technology Performance

Users Abilities

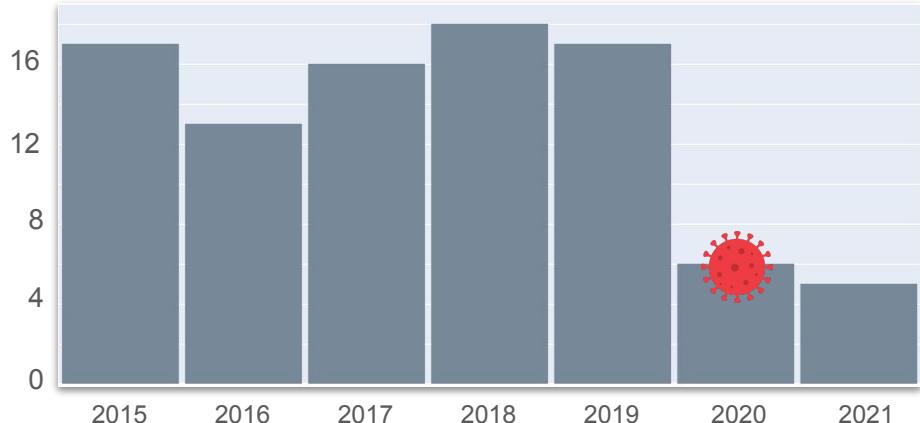
Authorities Skepticism

Skepticism from the Authorities and COVID-19

Three phases:
Complete stop of urban
participatory projects

Use of digital & 3D tools by
mimicking in-person
approaches

Poor results, drop of online
solutions



Chassin, T., Loftian, M., Ingensand, J., and Joerin, F.: A Categorization of Applied Participatory 3D Platforms in Urban Design, 5th International Conference 'Urban e-Planning', Lisbon, Portugal. 2021.
[Source](#)

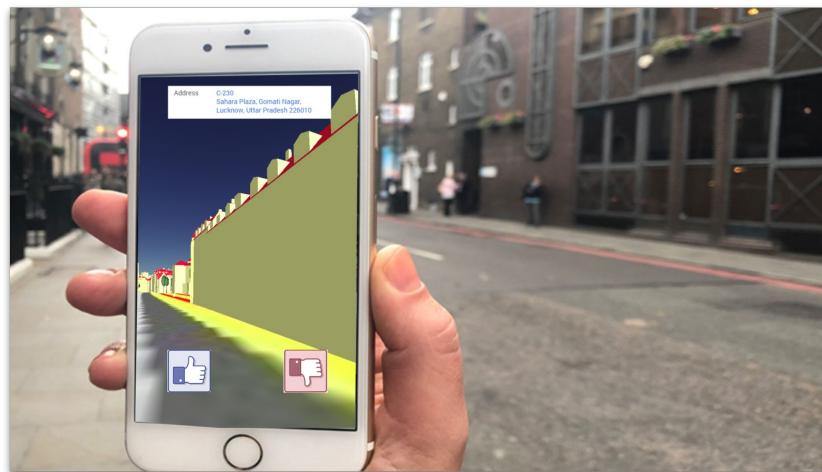
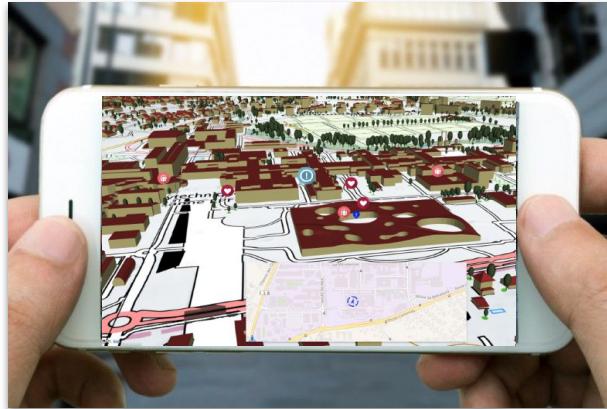
Towards a simplification of 3D Participatory E-Planning Tools

Virtual globe controlled by
smartphone sensors

Integration of 3D models from
a municipality's urban future
projects

Guerilla participation

Prototype
under-development



Thank you for your attention !



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Takeaways :

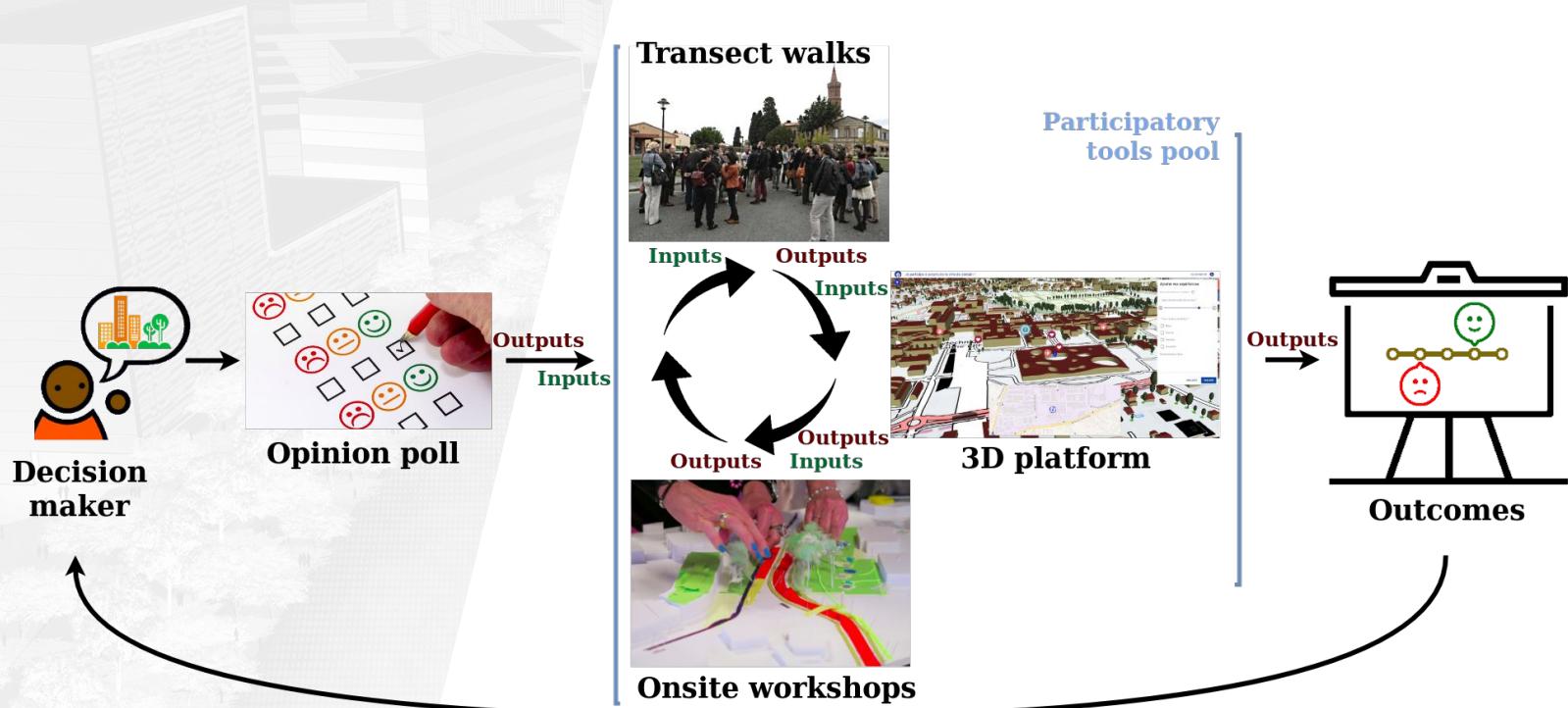
Modern 3D digital participation is full of promises but is complex to implement

Virtual globe provides a geo-efficient and flexible structure to design diversified participatory 3D tools

The COVID-19 pandemic seems to have further hindered the use of 3D in urban participatory projects

Ease of use, brief feedback and on the spot participation could leverage citizen participation

Toward tools multiplicity



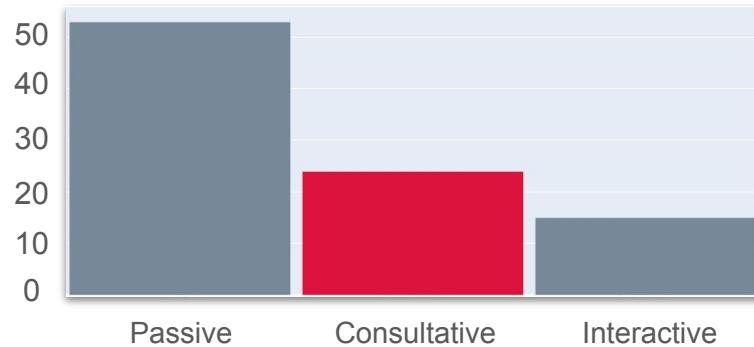
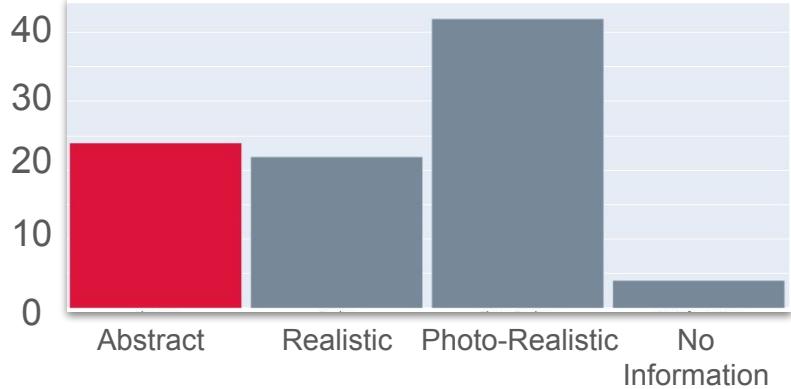
The project:

New road between an highway
and an industrial area

Vivid oppositions



Operator-based interactive
3D scene



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[Source](#)

Methods and Theory

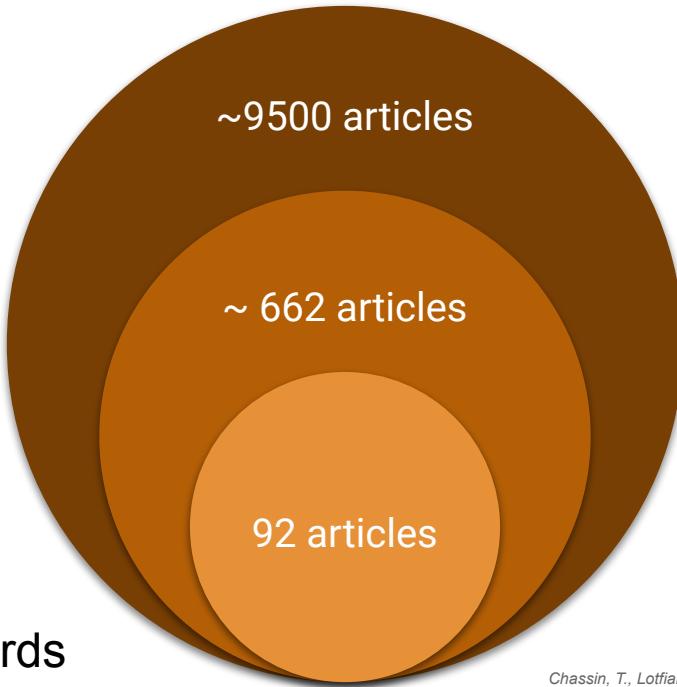
State-of-the-art, conceptualization,
classification, and methodology
development

Review of newspaper articles

Discussions with Swiss
municipalities on
participatory projects

Observation of interactive
sessions with the
population

From keywords
2 DB Factiva & Nexis
French language
2015 - 2021



Chassin, T., Lotfian, M., Ingensand, J., and Joerin, F.: A Categorization of Applied Participatory 3D Platforms in Urban Design, 5th International Conference 'Urban e-Planning', Lisbon, Portugal, 2021.

[Source](#)

Conceptualization of Participatory Approaches

Citizens **involvement** is now often **enforce** by several spatial planning **acts**

- ★ When?
- ★ What?
- ★ Who?
- ★ How?

