Excerpt from the book

The Driverless City

Chicago, Illinois

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The Driverless City Scnenario Builder

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The Driverless City Scenario Builder is designed to facilitate exploration, imagination and reflection about human-centered cities. This device allows participants to build scenarios about the future of mobility, urbanism, and social life. Recent scholarship argues that designers can play an important role in the curation and organization of public discussion about scientific and technological issues.[1] In the field of design, it is common to use digital and physical artifacts – card decks, maps, games, models and prototypes – in order to bring multiple stakeholders together in codesign sessions.[2]

Beginning in February 2016, we experimented with existing design tools such as "The Thing from the Future" by Stuart Candy and Jeff Watson[3] with graduate students in Ron Henderson's landscape architecture studio. We found that existing tools allowed our team to quickly and collaboratively generate and explore a variety of scenarios around driverless cars and urban futures. As a result, we decided to begin prototyping our own tool in order to engage stakeholders in the discussion of key issues related to the development of human-centered cities.

Building on our primary and secondary research, we created cards that represented actors, practices,

The early prototype playing cards next to design mock-ups for the next version of the scenario builder

relationships and infrastructures. For example, building on our mind mapping exercise, we created socio-spatial categories related to mobility practices including tourism, commuting, parking, and delivering as well as street life. We included a wide variety of locations and environments such as warehouses, flea markets and playgrounds. We considered the role of human and non-human actors such as urban infrastructure and the natural environment. Urban infrastructure includes bike lanes, fuel stations and transmission towers and the natural environment includes sun, wind and trees. We considered the role of emotions, moods and spatial qualities as well as the importance of ethics and values. We also included card representing the claims and possible affordances of driverless car technology such as shared cars, vehicle-to-vehicle communication and vehicle-to-infrastructure communication.

One of our early prototyping sessions – held on the Amtrak train on the way to Ann Arbor to visit the Mcity test facility – allowed us to reframe and clarify our themes as well as adding and eliminating categories. Furthermore, we were able to continue to iterate the development of the tool through interviews with experts on urban planning, facilities management, transportation and industrial real estate. Our interviews allowed us to build relationships with key stakeholders by sharing information about recent developments related to driverless cars while, at the same time, learning about the opportunities and challenges related to creating human-centered cities. The interviews allowed us to expand and specify the terms on the cards.

During Summer 2016, in partnership with the

Workshopping the deck with 30 doctoral students, in partnership with the Chicago Humanities Festival, Summer 2016

Chicago Humanities Festival, we were able to hold a workshop with approximately 30 doctoral students in the humanities in order to test the effectiveness of the scenario builder. The two-hour workshop allowed participants to engage in discussions and narratives provoked by various combinations of cards. The workshop allowed us to get feedback from potential users about the ways in which the scenario builder could support discussion about unfamiliar topics in multidisciplinary teams. At the end of the session, we conducted a short survey about the experiences that participants had using the scenario builder. This session allowed us to further refine the design of the scenario builder.

Building on our primary and secondary research, we created cards that represented actors, practices, relationships and infrastructures.

Following the workshop, we conducted follow-up interviews with three participants in order to better understand their experiences using the scenario builder and identify ways in which it could be improved. According to Lisa, “You were asking us to do something completely counterintuitive: come up with a scenario with a very limited knowledge about something. It’s a great exercise for people who are so immersed in one segment of an area of research.” Overall, we were able to confirm the value of the scenario builder in enabling participants to engage in discussions around complex socio-technical issues as well as to speculate about

topics such as driverless cars and urban futures. While, in many ways, the technologies are still 'black boxed' in that their capabilities and politics are difficult to understand, participants were able to discuss their own values and needs and how these might be embedded in urban futures. For example, Lisa said "It was OK not to know, it was a kind of a game that we were allowed not to be the smartest person in the room, authority on the subject, [or] expert on the subject. We were actually allowed to think about this in way that we are more human and less academic." In addition, the results of the survey that we

Left: Function follows form. The paper card deck next to material samples in steel, copper, and brass.

conducted at the end of the session revealed that more than half of the participants found the instructions and rules quite difficult to understand. Therefore, the workshop allowed us to understand the importance of simplifying the instructions and ways of using the scenario builder.

In addition to simplifying the instructions, we experimented with various materials and representation formats to move away from game play and, instead, to allow for more focused concentration and reflection on the terms.

Working with industrial designer Martin Kastner from Crucial Detail, we made prototypes with stainless steel spheres, acrylic plastic tokens, and brass cards. We also experimented with various ways of spreading out the cards, spinning and flipping chips, and rotating balls in the hand (inspired by Chinese meditation balls). The final version of The Driverless City scenario builder is a set of inspirational keywords etched onto round tokens. In order to use the device, you randomly select five chips and spread them out in order to create a story in response to a question about the future of mobility, urbanism, and social life. The stories enable stakeholders to imagine and prototype the alternative possible urban futures that could co-evolve with advances in transportation such as driverless cars.

Notes

1 DiSalvo, Carl. (2009). Design and the Construction of Publics. ***Design Issues***, 25(1), 48-63.

2 Forlano, L., & Halpern, M. (2016). Reimagining Work: Entanglements and Frictions around Future of Work Narratives. ***Fibreculture***(26).

3 See http://situationlab.org. Accessed on September 14, 2016

Right: The cards have evolved into custom "tokens" developed in partnership with Martin Kastner.The tokens are double sided and beveled, which allows for easy shuffling and a streamlined profile. The current prototypes are composed of a wood ring with an engraved metal core.