Adventure Mode: A Speculative Rideshare Design

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Most smart city projections presume efficiency, predictability, and control as core design principles for smart transportation. Adventure Mode is a speculative design proposal developed as part of a research project with a major automotive company that proposes uses and interactions for Autonomous Vehicles (AVs) and rideshare advancements that defy these normative presumptions. Adventure Mode reframes the focus of moving vehicles from destination-based experiences to journey-based ones. Adventure Mode pushes the probabilities for unexpected encounters and anonymous play in increasingly predictable and predicted urban environments. It embraces the submission to algorithmic decision and chance as a ludic modality in human-computer interactions and urban artificial intelligence.

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1 ADVENTURE MODE: A SPECULATION

You step outside on Tuesday at 5:30 pm. It is a summer afternoon in downtown San Diego. It is balmy, and you smell salt. You were going to join your office workers for a happy hour, but you long for something different and less predictable in the transition between work and home. You open your rideshare app, and when prompted to enter your destination, you click the button that says, "Adventure Mode: Take me somewhere new." You answer a few questions about your preferences for the experience: duration, mood, sensations, sociality, strenuousness, anonymity, and risk. You select a three out of ten on the sociality scale when prompted: you want to hang out with 1 or 2 people, but probably not for very long. You have no idea what the encounter will be like. It could be pleasant or jarring, flat or fantastic. This is what excites you. Last time you found yourself on an all-night hike with a crew to the top of Mount Helix (having selected a ten for many preferences that evening). This afternoon calls for something lighter. The car picks you up, and there are two people inside. Are they also in Adventure Mode? It does not matter. You are already feeling exhilarated by ditching the obligatory happy hour, ready for the unexpected. One of the riders introduces themself via the app as Ha Ha. "Hey Ha Ha," you say directly to them: "are you also in Adventure Mode"? Ha Ha grins. The driverless van dips into traffic, and for a moment, you get concerned that this Adventure is going to be sitting in rush hour traffic, but then you get a sync-indicator from another van a few lanes away. The two vehicles exit under the overpass and stop at a tiny inlet park beside a parking lot. You find yourself under a tree full of parrots beside a moss-covered fountain, eyes shut, doing a few songs of whisper karaoke with a group of four strangers. You are not much of a singer, but it does not matter since slight discomfort with the unexpected is exactly what you craved. The hour before dinner with your inlaws offers an unforgettable moment of respite from everything predictable about a normal day in algorithmic life.

Dialogues about trust and efficiency often dominate speculations about automation and driverless cars in smart cities. Through the premise of playable cities, researchers, practitioners, and theorists

have challenged rationalistic smart city narratives, conceptualizing their transformation through intermediation, interfaces, and pervasive play, challenging the presumed realities of technologically transformed and algorithmically driven urban environments, and focusing on smart city applications that allow for social, entertaining, and affective interactions (Nijholt, 2017). Less considered are the ways that emerging transportation design might transform play and how play might transform transportation design (**Figure 1**).

Autonomous Vehicles (AVs) can be viewed as "multidisciplinary technology," one that not only provides enhanced digital connectivity but also has the potential to adjust the logics of navigation and transport in the city and the connection between its human users. This offers a special opportunity to leverage AVs as playspaces. The promises of AV technology typically include reduced travel time, environmental impact, and traffic congestion, all which rely on efficient and intelligent pathfinding through connected-vehicles communications (Bagloee et al., 2016; Abduljabbar et al., 2019). But as the history of any technological development shows, all outcomes of such capacity will not be practical or rational. Leveraging route optimization algorithms and the ability to communicate easily between vehicles also open opportunities for play, an extension of AV technologies that is often overlooked by manufacturers. As a design method for investigating possible futures, speculative design can deploy play as a means to challenge normative presumptions about transportation use in design processes and to explore secondary effects and unintended outcomes of AV development (Dunne and Raby, 2013). Focusing on the potential for play in AV design not only enables focus beyond traditional metrics, but also is one way to accelerate reductions in emissions and vehicle miles traveled by encouraging shared vehicle use and reducing our current motivations for individual vehicle ownership.

2 RE-WORKING THE DREAM OF SEAMLESS TRANSIT

In 2019, a leading automotive original equipment manufacturer (OEM) commissioned a team of researchers at the UC San Diego Design Lab Automation team to research in-transit amenities for future rideshare experiences. The OEM's design briefly proposed a rideshare scenario where a middle-aged woman signs up for a rideshare taxi. Their prompt text reads "Sally taps on the offers page and is immediately drawn to an advertisement about discounts on Dyson products for new riders. She taps on the advertisement and is brought to an Amazon page, which states that there is a 20 percent exclusive discount on all Dyson items for new autonomous-driving taxi riders. Sally happily purchases a Dyson vacuum cleaner from Amazon, filling out the necessary details." Between the user-interface presumption that the rider would use an in-car screen and the gendered presumption of a purchase of a vacuum cleaner by a woman rider, the Automation Team knew we had a lot to do to revise this commercialized and oversimplified vision of the future. During weekly workshops, undergraduate students developed DIAL maps (Day-in-a-Life)

and Journey Maps based on observational data and their own travel experiences. These maps also asked participants to depict an improved transit future based on their imagined ideas, which typically focused on reduced transitions, seamless routes, and trafficless encounters (**Figure 2**).

The OEM's vision was consistent with the majority of perspectives of workshop participants, students, transport designers, smart city planners, and consultants. In these contexts, even the most enlightened participants almost always imagine the future of transportation as one of efficiency and hyper commercialization. Transit is regularly idealized as part of an optimized future, where direct routes and trafficless journeys avoid all interruptions, transitions, and altercations with the help of autonomous algorithms. This dream of seamless transit has long been embedded in transit imaginaries. GM's 1939 exhibit for the World's Fair, designed by Bel Geddes, depicted smooth trafficless highways. Most urban planners and engineers still aspire to recreate this fantasy, using smart cities to solve problems by eliminating conflict and disadvantageous clustering through prediction and anticipation of human mobility patterns. Although transportation experts are now including activity-based travel demand models in their analyses (Hagerstrand, 1970; McNally and Rindt, 2008; Pinjari and Bhat, 2011), these models are still based on synthetic populations that presume that the intention of all travel redesign is to exclusively improve efficiency. But efficiency itself often turns out to be inefficient in the long run. Pursuits of efficiency ultimately encounter the challenges of Braess's Paradox which describes the fact that expanding capacity induces demand (Frank, 1981). Efficiency, in fact, always loses to desire. Anthony Downs describes this as the principle of triple convergence (Downs, 2005), in which any initial reductions in congestion using supply-side tactics will rapidly be offset by drivers who formerly used alternative routes coming back to the roadway. Efficiency not only cannot account for the entire transit development paradigm of the future, but also is a limited framework for understanding behavior in the present. To counteract these normative tendencies and logics, a team of four speculative designers worked alongside the human-centered researchers, developing possibility grids based on near, long-term, and far future outlooks through discussion and brainstorming sessions. Their mandate was to develop provocations and systems to challenge the presumed design assumptions about mobility futures. Over five weekly sessions, the speculative design team developed "What If... ?" proposals and counterfactuals that challenged the presumptions of efficiency and seamless transit. The aim was to complexify the idea of in-transit amenities for the OEM through opportunities for experiential play, but also to understand play as a design principle to unlock presumptions about linear projections of the future.

3 LEISURE

While most smart city rhetorics promise to eliminate wasted energy, time, and space to provide safety and health, there are also a number of inquiries around the new forms of play emerging amidst the efficiency fantasies. Smart cities, as Townsend

describes, are "places where information technology is combined with infrastructure, architecture, everyday objects, and even our bodies to address social, economic, and environmental problems" (Townsend, 2013). Smart cities also offer new excesses and ludic dimensions, since the integration of information technology produces new opportunities and constraints. Car and mobility cultures have always produced surpluses that respond to phenomena beyond need: hacking, augmenting, freeriding, and repurposing, from aestheticization of cars as cultural expressions to their expanded uses in pleasure, sex, and sport.

Transport histories also demonstrate the ways in which the ludic and leisurely has long combined with utility and efficiency in accelerating transportation development. Henry Ford's Model T was marketed not as a means of getting to work (that was the job for the streetcar), but as a device for weekend exploration and wilderness adventures. Ford shifted the workweek from six days to five, organizing the weekend to enhance the assembly line worker's desire to purchase their own Ford (Doray and Macey, 1988). At the same time, amusement parks became popular destinations, producing new physical experiences of motion and exhilaration, accelerating bodies through physical spaces as worker bodily movement was reduced and constrained in repetition. The "ride" encapsulates this dual meaning, suggesting both the simple act of traveling from one point to another on or in a vehicle, but also the act of transport as enjoyment rather than perfunctory action, the out-of-controlness and submission to movement. In this way, transport serves this dual function of a path to an end and the pleasure of passage itself. The recent popularity of scooters and micro mobility reinforces this lineage, recentering the journey rather than destination. The purpose of the speculative design team was to build upon this legacy and contemporary shifts. Most speculative work on autonomous futures tends to focus on the interior of the car as a source of entertainment (video gaming, movie watching), rather than approaching the journey as entertainment itself. Rather than reduce future imaginaries to the digital realm, the speculative design team imagined how algorithmic rideshare might transform urban play. Smart cities presume that urban subjects are locatable and located, promising that everything can be computationally discovered, controlled, shared, and predicted.

Smart city infrastructures and the global positioning system (GPS) enables both transit vehicles and users to be tracked geospatially, producing aggregate data about mobility and traffic patterns that can inform infrastructural decisions. These networks have enabled the creation of locative media, which uses technologies such as GPS, WiFi, Radio-frequency identification (RFID), and location-aware mobile devices to create geospatial experiences that digitally play in real world locations. Real-time or mixed reality is overlaid with augmented or virtual reality, allowing users to visit real life locations in order to experience digital interfaces. These designs rely on the interconnection between situated physical spaces and a digital twin or digital overlay. Increasing public concerns over surveillance, data privacy, and security push toward a potential need for the ludic, where the unpredictable, undisclosed route becomes a form of pleasure, and both public transport and private transport offer opportunities for reinscribing urban landscapes with unknown journeys.

Amusement might then be understood as transportation without a destination, mobility without locatability.

4 ADVENTURE MODE

Adventure Mode is a speculative proposal for a rideshare experience that augments and counteracts the focus on efficient mobility experiences in the smart city. The premise is a simple provocation—an option inside a rideshare app called Adventure Mode that allows riders to let the algorithm ultimately choose the destination and route, allowing the rider to select certain parameters to curate or modify their experience\enleadertwodots. Selection parameters might be elements like the popularity of prior visits based on place or time-specific constraints, sociability, routes that are specifically under construction or reconstruction, temperature or weather conditions, and draw upon other adventures programmed or suggested by participants. The Adventure Mode algorithm might also incorporate pre-existing needs of the car like car-washing or checkups into rider experiences, merging auto-maintenance with human experience. The Adventure Mode algorithm could draw upon previous rider selections and experience reviews, host adventures designed by other riders, or encourage direct real-time synching with a broader network of user profiles and identities.

Harnessing the opportunities of mobility-as-service, Adventure Mode re-imagines mobility as play. It addresses three critical aspects of play as a means for harnessing the unknown in an ever more interpretable, navigable, and computational mobile world. It posits 1) chance: the intentional construction of happenstance via technology, 2) de-control: ambiguity and the freedom not to choose, and 3) role-play: the option of anonymity and ambiguity in embodied interactions in an ever identifiable and attributable world (Caillois and Barash, 2001). Adventure Mode uses geolocation to dislocate its users. The premise is to enhance uncertainty and presence at once, to bring together strangers, to add the experience of unknown locability and destination (or lack thereof) travel, and to create a condition wherein one can intentionally submit to the algorithm, severing the knowability or intentionality of participants to various information streams. In a world where we can always map and be mapped and located, the premise of an unknown destination or direction, the act of giving up control, becomes a means of recovering the lost art of exploration. Instead Adventure Mode offers the sensibility of happenstance, a submission to the adventure and re-engaging of presence, one of the core aspects of play.

4.1 Self-Driving Dérives
Adventure Mode is inspired by The Situationist concept of the dérive (drift), a practice of exploring the city through unplanned adventures with unknown outcomes, with the intent of encountering the city's unexpected confluences and conditions. As Situationist leader Guy Debord said of dérive participants, they "let themselves be drawn by the attractions of the terrain and the encounters they find there" (Debord, 1994). Dérives were mostly notoriously done on foot, but they were also done via taxi cab, coercing a driver to participate or even lead a quasi-

enchanted series of twists and turns taken in response to emerging circumstances rather than in pursuit of a final locale. This concept was extended in Thomas Pynchon's V. (Pynchon, 1963), in which characters "yo-yo," riding the subway beneath the city along its entire loop as a means to inscribe the movement of urban infrastructure flows within their body, consciously tracing the typically unconscious paths of systems within themselves.

4.2 Ambiguity as Adventure

Adventure Mode embraces play as a celebration of ambiguity. In Performance Studies: An Introduction, Richard Schechner argues that "playing is double-edged, ambiguous, moving in several directions simultaneously" (Schechner, 2017). It is never resolute; following an indeterminate path is both the experience and the phenomenon itself. Brian Sutton-Smith (Sutton-Smith, 1997) follows Williams Empson's classic Seven Types of Ambiguity (Empson, 1953), showing how they apply to play, including ambiguity of intent ("are all the passengers in "Adventure Mode" or are they just on their way home from work?"), transition ("now are we in "Adventure Mode"...?"), contradiction (a rider in "Adventure Mode" introducing themselves under a pseudonym), and meaning ("is this "Adventure Mode" or "play ridenmeet"?"). Just as amusement park rides pushed an industrial immobilized working body in new directions, our contemporary world invites play experiences that build upon the pleasure of cognitive submission, activating the freedoms not to choose as a key form of enjoyment in contexts where everything is customizable and personal and on-demand. Play is pretend, but in the smart city, it is also about losing control over every single instance, of separating mastery of one's own knowledge from what the city might know about you.

4.3 Spontaneous Communities

In an era where identities are hyper-contested and commodified, where every social profile is an exposure of preferences and interpersonal networks, Adventure Mode offers an option of more varied forms of interpersonal connectivity. It lets you be a stranger interacting with other strangers in unexpected ways; it invites avatars, anonymity, pretending, or hyper-identities. It generates a point of mediation that offers safety and protection through appified experience but also generates a degree of risk and uncertainty, an aspect of the city or megacity no longer present in a seamless and an efficient smart city world. In this way, Adventure Mode might produce what Victor Turner called "spontaneous communitas" (Turner, 1974), a phenomenon in which status is abolished and recomposed through an unexpected or unpredictable shared circumstance. Turner described the phenomenon as producing the ability for people to encounter each other directly, "nakedly" and intimately in a face-to-face encounter through a shared or common space and time. In Adventure Mode, this encounter may be intentionally disguised or directly honest, as raw and cloaked identities in Adventure Mode play are intentionally indistinguishable. Nonetheless, a sense of conviviality produces a temporary cultural commons, which generates a spirit or sensibility of shared movement in that particular moment. Turner describes this as a form of "long-form improvisation"
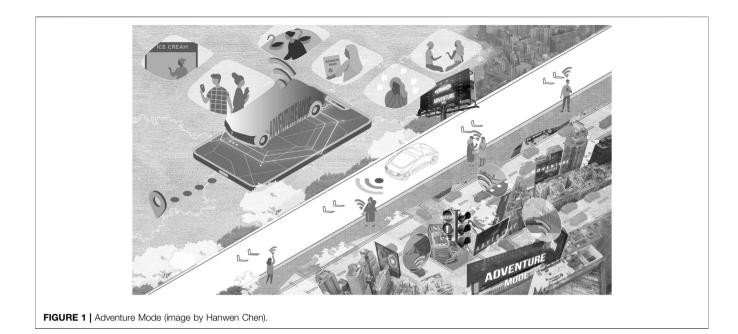
where the pilgrimage or journey requires the realization of a number of spontaneous actions in response to ever-changing circumstances. Adventure Mode creates a shared social encounter that navigates the rules of play, forwarding the ludic dimensions of identity and community.
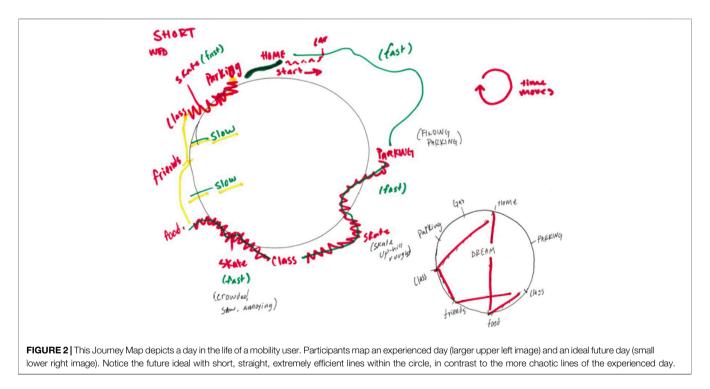
Adventure Mode accelerates the ways that mobile phones and "smart" connectivity has overcome the logic of stranger danger that characterized liberal messaging about others and otherness throughout the late 20th century. Rideshare, especially pool systems that partner you on routes to share with other riders, has already disrupted long-held maxims about never getting into cars with strangers. Rideshare is already poised to embrace chance and coincidence, albeit constrained by the logics of destination. Adventure Mode enhances the algorithmic intersection between places, strangers, and route, repositioning the future of transportation towards a new publicness and phenomena of the commons that enables unpredicted formations of connected strangers.

4.4 Risk

Adventure Mode might allow users to select the level of uncertainty and risk that they desire. Should a user select a higher level, deep and/or dark play might occur. Deep play is all-absorbing, pushing experience to ecstatic heights; i.e., biking in a dense urban city that requires weaving in and out of the cars with precise concentration produces enhanced dimensions of embodiment. It is akin to Callois's ideas of vertigo or ilinx (Greek for whirlpool), where the consequences are altered perception or loss-of-control, generating an out-of-body experience that reinforces physical sensation and vulnerability (Caillois and Barash, 2001). Dark play occurs when some of the players do not know that they are playing; it is also known as pervasive play, where the rules of play or the "magic circle" spill out into everyday life, mixing the spaces of pretend and reality. People pretending to be crazy in a park, where the passing commuters do not know that they are pretending, is dark play, creating a "lusory attitude" or awareness of the playspace that is not shared by the non-player or observers (Fischer and Hornecker, 2017). Adventure Mode can activate these forms of deep and dark play against the safety and surveillance orientations of the smart city, using disruption and inversion to subvert identity transparency and efficiency, allowing users to lose themselves in a world where one is always locatable, intelligible, and found. Adventure Mode might be understood as an "infinite game" in transportation; the goal is not to realize any particular objective or rules, but rather to harness the mobility network as a source of collective exaltation (Carse, 2011).

Adventure Mode is not an idealization; it is a speculation with obvious downsides. Adventure Mode does not intend to establish an autonomous form of play; rather it is contingent upon the algorithms of rideshare platforms and AV systems, subject to the same compromises of data, privacy, and capital that rideshare apps today require in exchange for use. Using driverless vehicles for play and entertainment has the potential to increase the number of vehicles in already congested and carbon-consumptive urban areas. The shift away from personal vehicle ownership towards mobility-as-service ecosystems will engage social, geographic, ecological, and psychic

FIGURE 1 | Adventure Mode (image by Hanwen Chen).

FIGURE 2 | This Journey Map depicts a day in the life of a mobility user. Participants map an experienced day (larger upper left image) and an ideal future day (small lower right image). Notice the future ideal with short, straight, extremely efficient lines within the circle, in contrast to the more chaotic lines of the experienced day.

transformations for vehicle ownership and its logics of isolation and control. It relies on participants who have leisure time and funding to cover entertainment costs and who are free from dependents. While Adventure Mode could certainly accommodate various levels of ability, safety, and trust, it would need to encourage this for the more vulnerable, less recognized, and ensure its algorithm and technologies supported trust and security during play. Adventure Mode is likely largely an urban game, making encounters over close proximity and short time frames.

5 TRANSIT PLAY IN THE SMART CITY

As a speculative design proposal, Adventure Mode operates more as a provocation than a proposition. It agitates the typical dialogues about trust that often dominate automation and driverless car debates, and the emphasis on efficiency across smart cities. It extends the existing narratives around the potential for play and smart cities into the transportation space, linking the rides of autonomous cars and their algorithms with amusement experiences. Since Adventure

Mode puts more trust in the vehicle system rather than less, it imagines a world in which the autonomous network generates a retreat from the banalities of the efficiencies it provides. Adventure Mode opens up a playspace of transportation and technological movement experiences.

Proposals for algorithmic decisions almost never account for experiential value: the default for Google maps is to route journeys based on efficiency in timing (or distance), which often puts cars on highways for short periods of time, even if the difference between highway and streets is but a matter of minutes. Adventure Mode accounts for other priorities, like psychological experiences of time in terms of view, perspective, and complexity of surroundings; the need for interaction and chance encounters with strangers and unexpected places; and the desire for embodied movement in various forms. In sum, it offers a new way to consider play in smart cities as a means of moving through and with complexity. Adventure Mode might contribute to the pragmatic and functional considerations that shape User Interaction and Experience as a thought experiment, but its true goal is to embed play in smart city contexts. The premise is to not only simply reproduce what has been historically achieved in transport design, but to entangle the ludic and algorithmic and mechanic aspects of the journey in unexpected configurations that challenge normative human interaction and social behavior, embracing play beyond the perfunctory in transport design.

REFERENCES

Abduljabbar, R., Dia, H., Liyanage, S., and Bagloee, S. A. (2019). Applications of Artificial Intelligence in Transport: An Overview. *Sustainability* 11, 189. doi:10.3390/su11010189

Bagloee, S. A., Tavana, M., Asadi, M., and Oliver, T. (2016). Autonomous Vehicles: Challenges, Opportunities, and Future Implications for Transportation Policies. *J. Mod. Transport.* 24, 284–303. doi:10.1007/s40534-016-0117-3

Caillois, R., and Barash, M., (2001). *Man, Play, and Games* (Trans.) (Chicago: University of Illinois press).

Carse, J. (2011). *Finite and Infinite Games* (New York: Simon & Schuster).

Debord, G. (1994). *The Society of the Spectacle* (New York: Zone Books).

Doray, B., and Macey, D. (1988). *From Taylorism to Fordism: A Rational Madness* (London: Free Association Books).

Downs, A. (2005). *Still Stuck in Traffic: Coping with Peak-Hour Traffic Congestion* (Washington, DC: Brookings Institution Press).

Dunne, A., and Raby, F. (2013). *Speculative Everything: Design, Fiction, and Social Dreaming* (Cambridge, MA: MIT press).

Empson, W. (1953). *Seven Types of Ambiguity*. London: William Empson. (Chatto and Windus).

Fischer, P. T., and Hornecker, E. (2017). Creating Shared Encounters through Fixed and Movable Interfaces. In *Playable Cities* (New York: Springer). 163–185. doi:10.1007/978-981-10-1962-3_8

Frank, M. (1981). The Braess Paradox. *Math. Programming* 20, 283–302. doi:10.1007/bf01589354

Hagerstrand, T. (1970). *What about People in Regional Science*. New York: Springer.

McNally, M. G., and Rindt, C. (2008). *The Activity-Based Approach.*. Berlin: Researchgate.

Nijholt, A. (2017). Towards Playful and Playable Cities. In *Playable Cities* (New York: Springer). 1–20. doi:10.1007/978-981-10-1962-3_1

Pinjari, A. R., and Bhat, C. R. (2011). Activity-based Travel Demand Analysis. In *A Handbook of Transport Economics* (Massachusetts: Edward Elgar Publishing).

Pynchon, T. (1963). *V.: A Novel*. Philadelphia: Lippincott Philadelphia.

Schechner, R. (2017). *Performance Studies: An introduction* (Oxfordshire, England: Routledge).

Sutton-Smith, B. (1997). *The Ambiguity of Play* (Cambridge: Harvard University Press).

Townsend, A. M. (2013). *Smart Cities: Big data,Civic Hackers, and the Quest for a New Utopia* (WW Norton & Company).

Turner, V. (1974). *Dramas, fields and Metaphors*, Ithaca and London (Cornell University Press).

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