

# Privacy in the Arts: A Case Study of A Theater Company

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This is going to be a sprint, so stick with me.

# Patron data is a growing Medium

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Here's my opening claim: Patron data is a growing medium in arts and entertainment.

While artists have used digital graphics and artifacts for decades, we're entering a new era where artists are using *patron* data in experiences. And while interaction has been used in art forever, now that participation is becoming more personalized than just, pushing an anonymous button for example. Information about patrons is increasingly becoming the medium itself.

This trend presents both exciting new possibilities as a medium, but it also opens up some questions that make me a bit apprehensive with regards to privacy. Let share a few examples of patron data as a medium.



J.B. Spector/Museum of Science and Industry, Chicago

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Here's an installation at the Chicago Museum of Science & Industry. You stand in front of this projection & butterflies land on you. Your body movements are the medium.

Photo: [J.B. Spector/Museum of Science and Industry, Chicago]



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Another at the Chicago Museum of Science & Industry. An exhibit where patrons put on a EEG brain scanner, so your brain waves are collected as a mode of interaction.

Biometric Mirror

Camera



Information Display

Session ab4de

Attribute	Value	Conf
Gender	MALE	-
Age	28	-
Ethnicity	CAUCASIAN	82%
Emotion	SURPRISED	91%
Kindness	LOW	7%
Happiness	HIGH	87%
Commonness	HIGH	99%
Responsibility	LOW	73%
Attractiveness	AVERAGE	92%
Sociability	HIGH	64%
Introversion	HIGH	88%
Aggressiveness	LOW	17%
Weirdness	HIGH	63%
Emotional Stability	LOW	95%

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more information via <http://go.unimelb.edu.au/vi56>

Biometric Mirror

Niels Wouter et al.

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There's gallery installations like the Biometric Mirror. Where you enter a gallery, walk in front of a screen, and get rated on your attractiveness, weirdness, and gender.

Values in...

Privacy Frameworks

Art

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I'm going to paint, with a very broad brushstroke some of the ways I've noticed that the values of the present-day art world appear to come in tension with the values of common privacy frameworks.

## Values in...

Privacy Frameworks	Art
<ul style="list-style-type: none"><li>• promote psychological comfort by design</li></ul>	<ul style="list-style-type: none"><li>• disrupt psychological comfort by design</li></ul>
<ul style="list-style-type: none"><li>• protects against sketchy data practices for ulterior motives</li></ul>	<ul style="list-style-type: none"><li>• critique ulterior motives using sketchy practices or forms</li></ul>
<ul style="list-style-type: none"><li>• informed consent</li></ul>	<ul style="list-style-type: none"><li>• surprise, delight, shock value, provocation</li></ul>
<ul style="list-style-type: none"><li>• respect for social norms</li></ul>	<ul style="list-style-type: none"><li>• disrupt social norms</li></ul>

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- Promote psych comfort vs disrupt it
- Protect against sketchy data practices & ulterior motives vs critique those sketchy practices by *bringing them to the forefront*. Art is purposefully hypocritical.
- A lot privacy frameworks value informed consent...art isn't really set up for that. It relies heavily on surprise, shock value, and provocation.
- Privacy frameworks like contextual integrity emphasize social norms and respect, while art is purposefully disruptive and at time disrespectful

## Institutional factors in...

Privacy Frameworks	Art
<ul style="list-style-type: none"><li>• calls for technical and legal expertise</li></ul>	<ul style="list-style-type: none"><li>• artists often self-trained technologists</li></ul>
<ul style="list-style-type: none"><li>• reliance on legal &amp; compliance frameworks</li></ul>	<ul style="list-style-type: none"><li>• critique of legal &amp; compliance structures</li></ul>
<ul style="list-style-type: none"><li>• digital privacy notices or other interfaces</li></ul>	<ul style="list-style-type: none"><li>• unusual interfaces (art gallery? performance art?)</li></ul>
<ul style="list-style-type: none"><li>• large institutions, substantial resources</li></ul>	<ul style="list-style-type: none"><li>• small institutions or individuals, little resources</li></ul>

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We also see this not only at the level of purpose and values, but also at the level of practice.

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- Many of our privacy frameworks make assumptions about the structures and knowledge of data controllers. Art institutions often don't fit those norms. Privacy methods assume you have technical expertise, art doesn't.
- Privacy as an institution often looks to regulation and compliance, while the art world often critiques those structures and honestly often gets away with a lot of questionably legal stuff
- While we're used to thinking in terms of privacy notices, nudges, and check-in's, art shares many of the challenges with IoT in that it has unusual interfaces in unusual settings
- Obvious differences in money, resources, and scale of human capital



# How to make privacy practices 'work' in art institutions?

## How to balance tensions in values?

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So none of this is to say that I want to regulate art, or think we should just ignore privacy in the context of art. It's that these values and practices appear to be in strong tension. It may be the case that these tensions are at a surface-level rather than being fundamental, but they're still tensions worth grappling with.

And obviously, ethics in art is by no means a new conversation. But I want to give two examples of how these tensions are already being played out.

# Example: Sophie Calle

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I want to jump back to the 70s and 80s with Sophie Calle. She's a very controversial conceptual artist whose work often included what a lot of us would consider to be flagrant privacy violations. She was really into blurring, ignoring, or refusing to acknowledge the lines between art and life.

## *The Hotel (1979)*

Calle took a job as hotel cleaning staff in order to examine & photograph guests' rooms without permission.

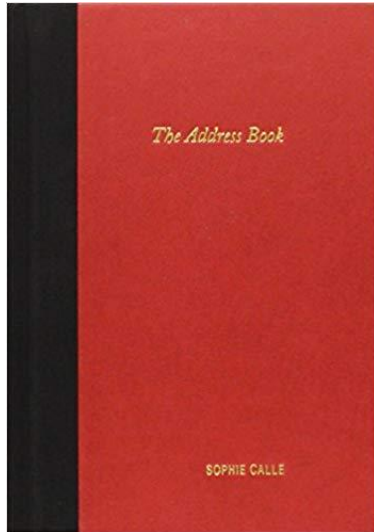


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Now these photos are in the Guggenheim! You can see them if you'd like.

@TODO future blur these photos...it's actually kind of gross to be redistributing them.

## *The Address Book (1983, fully published 2012)*



Calle found an address book on the street.

Contacted everyone in the book, asking them for stories about the owner.

Made copies of the book.

Published a write-up in a newspaper

(Owner later threatened to sue)

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The full work was recently published after Calle died in 2012.

# What would Sophie Calle have done with some coding skills?

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In short, Sophie Calle was the queen of breaking contextual integrity. And (I've never felt this about a woman in my life before but) when I learned about her work, I couldn't help but think, 'Thank God she never learned how to code.'

Because while conversations on ethics and art, aren't new, there are considerations that are particular to the digital realm. Especially that it's much much easier to scale the impact of digital work. Given that works are being deployed on the internet, it's also easier to scale public access that digital work. So what are artists doing who do know how to code?

# Example: Deng Yufeng

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Deng Yufeng is a Chinese artist, based in China.

## “346,000 Wuhan Citizens’ Secrets” (2018)



Photo by Deng Yufeng, in *New York Times*

Purchased data on 346,000 people living in Wuhan

Printed & displayed in gallery

Texted 10,000 invitations

One text reply: “You’re sick.”

In 2018, Yufeng illegally purchased personal data on over 3-hundred-thousand people in his home city. Printed the data on special paper and displayed it all in a gallery. He also texted around 10,000 of the people inviting them to come to the exhibit. A lot of people were not thrilled to be non-consensually involved in this art installation.

Why did he do this? In interviews, the artist said his intent was to critique everyday, pervasive data collection of citizens. And interestingly, this exhibit was closed by Chinese authorities shortly after opening.

# (A Preliminary) Case Study: An Immersive Theater Show

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But I want to focus this conversation on a specific case of an arts organization as it figures out how to navigate using patron data as a medium. This case study is *very much* still in progress, so please bear with me. I welcome both feedback and forgiveness on any conceptual hand-waving.



# Immersive Theater Culture

- Working metaphor is autonomy within a ‘container of safety’
- “I don’t care whether you’re comfortable; I care whether you’re safe” -Bricolage executives
- “Bricolage’s mission is to immerse artists and audiences in adventurous theatrical experiences that foster connections and alter perceptions.” -mission statement

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For those who aren’t familiar, immersive theater is a paradigm of theater where the fourth wall gets dissolved even more than usual. There isn’t necessarily seats and a stage; you can walk around the set interacting with actors, and you might not even be aware who the “actors” are, or what events are planned or spontaneous.

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So a quick primer on the culture of the industry of immersive theater.

- Containers of safety. This concept also common in other fields of experience design like festival cultures (think Burning Man) or LARP (Live-action roleplay). The contain metaphor and associated work usually focuses on physical and emotional safety. Experience designers like Bricolage have an enormous body of wisdom and practices regarding safety and access, but lack a lot of tools for thinking about protection of *information*, or how exactly information or data relates to safety. So “privacy” isn’t a conceptual framework that isn’t really relied on usually. Focus instead on containers and giving patrons autonomy to move around that container.
- The Bricolage executives have this great line they repeat often: “I don’t care whether you’re comfortable; I care whether you’re safe.” It’s a wonderful sentiment. The challenge with that, of course, is that the line between the two experiences isn’t always clear or predictable, as we’re seeing in the debate around trigger warnings.
- And as I alluded to before, secrecy, deception, and playful discovery, are all themes that Bricolage relies upon heavily in their work. Their mission even

- includes “adventure.” So adventure, surprise, and safety!

# Examples: Surprise & norms

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So here's a quick sidebar with two examples about surprise, norms, and harm.




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I want to take a second and contrast Immersive theater with something similar; the Haunted House.

Haunted Houses are also immersive experiences that rely on shock, surprise, and discomfort. However, when people walk into a haunted house, they still kinda know what they're getting in to. That is to say, there are pretty strong contextual norms about what could happen there. This is in contrast to immersive theater, where you have an enormous degree of variability, *and* a lot of average theater patrons that don't really know what they're signing up for, and might even buy a ticket at the door.

Biometric Mirror

Camera



Information Display

Session ab4de

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*Biometric Mirror*

Niels Wouter et al.

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Or again, let's bring back this earlier example, Biometric Mirror. Imaging a transgender person walking into an art gallery and being directly misgendered by an art exhibit. People expect to be emotionally challenged by art in the general sense, but rarely do we expect to be directly targeted in that challenge. No one expects that.



Writer & Conceiver: Michael Skirpan | Production: Bricolage Production Co & Probable Models | Sept 20

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But back to the show I'm working with.

This piece is called, "Project Amelia" and opens September 20. I will note that Bricolage relies heavily on secrecy and intrigue as a marketing strategy. Because this show isn't out yet, to respect their business and creative interests, I'm going to be a little vague at times. They were very kind to let me talk about this at all, so let's not ruin this for this small business.



+ many  
independent  
artists,  
developers,  
architects,  
actors,  
stagehands,  
volunteers

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Bricolage Production Company is a Pittsburgh-based theater company that specializes in experimental and immersive experiences.

Probable Models is a small consulting company that is part engineering, part ethics, with the tagline, "Making ethical futures more probable." These two organizations are partnering to produce a new large-scale immersive production in Pittsburgh. Probable Models is sort of taking the engineering side of things, while Bricolage is more on the production and creative side.

And, there's of course a lot of others involved as well. In total, the team was 50-some people at the last count.

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- Setting: speculative tech company
  - Creative purpose: help patrons explore implications of emerging technology
  - Real tech
    - Indoor localization system
    - Collection of patron data from Facebook, Twitter, etc
    - Installations built by independent artists that use patron data; RFID bracelet
    - mobile app



Values in...

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So you can already see how everything in my table might apply in the context of immersive theater, and especially in the context of this show.

## Research Perspective

- involved in project since September 2018
- lots informal observational data from months of meetings, interactions
- three (very) alpha experience tests
- beginning stages of formal interviews with production team

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Just a note about my involvement with the project. As I mentioned, this is still preliminary, but I want to share a few things we've learned and the many open questions as well.

# Alpha Test

## Alpha Test Goals (March 2019)

- Invited patrons to a mini event with setting of fictional tech company
- Wanted to embed real tech in fictional narrative
- Gather opinions on data collection

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Here's some of the goals of this first alpha test. We wanted to start understanding how patrons would react to data collection in a fictional environment.

Since this was a research environment, the whole event started with an opt-in written research consent form. Before patrons even stepped inside, I was collecting forms & answering questions, wearing my little CMU nametag.

“But because it's Bricolage, when you come in **you question everything**. So yeah, she has a CMU tag but those are easy to make.”

-Alpha test patron

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We discovered very quickly that some people thought that I was fake and this consent form was fake.

## Takeaway

Need to put in the work to  
delineate fact and fiction

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This was a big wakeup call for everyone! How can I encourage meaningful consent when people might not believe I'm speaking the truth. What do we do if some patrons didn't think the very explicit research form was real? What will they think about a privacy policy? Should it come from a theater company? The fictional company?

## Takeaway

Production team  
recognized need to sketch  
out norms

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Another important takeaway as a researcher was seeing that even though the production team is heavily invested in surprise, discomfort, and physical safety they were still interested in getting at least an outline of what patron data norms might be before they started.

# Privacy Engineering Challenges

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Given collection from email, Facebook, Reddit, Instagram, and more, there is a *lot* of very personal data available to the production team. I wish I was giving this talk 3-4 months from now, so I could give you information about what the privacy engineering decisions the team made. But here are some of the topics I've seen them grappling with.



- encryption at rest vs processing resources
- authentication style needs to accommodate a wide variety of users, across
  - tech savviness, smartphone nonusers
  - familiarity with context
- installations built by artists with variety of technical backgrounds
- in-show hacking

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But as a teaser, these are some of the challenges I've seen the engineering team grappling with.

1. The engineering team has decided they would like to prevent themselves from accessing data. So they decided to encrypt things at rest, and give each patron the key to unlock their own data. But with a dozen art installations using data, they also have high processing needs and limited processing resources.
2. So each patron has their own private key. How do we give them control of that key in a usable way, knowing that the patrons have a very diverse background
3. A dozen artists with different frameworks and technical backgrounds. Certainly though, none of those artists have security or privacy training.
4. Lastly, immersive theater patrons are notorious hackers. If you put them in a locked room, they will try to unlock that room. They don't know what the walls of the containers are, if behind that door is cool surprise or the breaker box for the whole show. If there is a cord, they will pull it to see what happens. So if they're putting patrons into this environment with a fictional tech company, it is certain that a portion of them will decide their task for the night is to destroy the company, and it is possible that a portion of those people might *actually* try to break networks.

# Privacy Affordances

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The creative and engineering teams are constantly working to figure out how to safely engage their patrons. So here's some of the privacy affordances they're planning to incorporate.

## Can experience show with or without sharing external data

- *But how does the experience change?*
- Creative team takes stance that sharing improves your experience.

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First, importantly, you *can* experience the show without sharing any of your external data.

That said, the stance from the production team echoes that of what we see in for-profit environments, that sharing data improves your experience. They're even considering building in nudges to donate data during the show itself.

# Understanding Project Amelia's Use of Data

Yes, we are **hoping you'll share data with us.**

Why?

We are very protective of your data and only ask that you share it to have an enhanced experience. The data you share is for your personal betterment only and will be in your control until it is deleted when you are done with **Aura.**

We store **two kinds of data** on you:

A. public profile data

CONTINUE

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They have decided to have a privacy notice and privacy policy. You can see this in the opening data collection page after you register your ticket. You can see that the production team chose to make the privacy notice in the voice of Project Amelia and the fictional company, Aura.

How successful this is is yet to be seen.

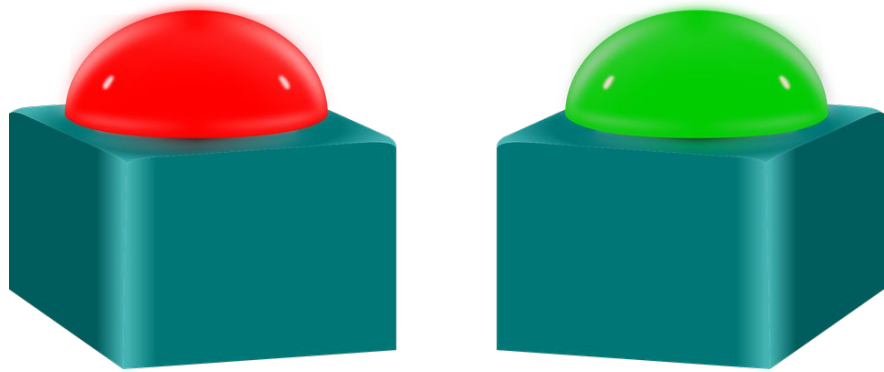
## RFID bracelets



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As I mentioned, the set is full of game-like installations. Patrons are given an RFID bracelet that holds their private key to authenticate in to these games. So even if patrons might not know exactly what's going to happen during the game if they play, the production team has decided that this opt-in mechanism is largely sufficient to provide a consent affordance.

# Data Deletion



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Data deletion. At the end of the show, patrons have the option to donate their in-show data to the research team and further show development. One thing the production team is toying with as a mechanism for this is a Big Red or Green Button press. The button press is not only a pragmatic privacy moment, but it's also a *dramatic* moment, the very end of the show. You just participated in this experience on pervasive data collection, and now you have a moment to decide whether to carry that data over outside the show's immediate context.

[Commentary: it's really not about the green & red buttons specifically, more about the idea that this privacy decision can be dramatic by design]

# Takeaway

Usually possible to  
incorporate privacy  
affordances as dramatic  
element

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I'm sure you all hear arguments like, "We can't incorporate that privacy tool, because it detracts from the product." Similarly, these arguments come up in immersive environments constantly, if I give you information, it'll take you out of the experience. But we see here that Bricolage has taken the approach of building affordances in to the environment itself. Again, how effective this is is yet to be seen, but it at least quiets some of those arguments.

Values in...

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So returning to this table to center us. We need people thinking about how to balance these tensions and adapt privacy methodologies to fit these contexts.



1. Art needs you (take the pay cut!)
2. Despite art's purpose to critique and disrupt norms, artists and engineers still have obligation to identify privacy norms.

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This talk is more a cry for help, or at least a cry for thoughtfulness. But here are two takeaways I'd love you to walk away with.

1. Art needs you, privacy engineers! Take the pay cut or pro-bono your skills at your local gallery. The out-of-the-box privacy tools that might work for small businesses often aren't going to work for artists building things from scratch. Write a Privacy Impact Assessment tool that artists will actually want to use. Make sure that gallery is thinking about their plan for when an exhibit gets subpoena-ed.
2. Despite art's purpose to critique and disrupt norms, I'm taking the prescriptive stance that artists & engineers still have the moral obligation to identify privacy norms. And to the extent that they *disrupt* those norms, it had definitely better be in the service of its artistic purpose rather than by accident.

## With Colleagues

- Lorrie Cranor (CMU)
- Michael Skirpan (CMU)
- Robert Cunningham (CERT)



- Alice Shashkina (CMU)
- Yixiao Fu (CMU)



- Cylab Presidential Fellowship
- K&L Gates Fellowship in Ethics & Computational Technology

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## More Privacy Art

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- Like, everything at Eyebeam: <https://www.eyebeam.org/>
- “Amazing mind reader reveals his ‘gift.’” Video by Duval Guillaume.  
<https://www.youtube.com/watch?v=F7pYHN9iC9I&feature=youtu.be>
- Send your examples to [moates@cmu.edu](mailto:moates@cmu.edu)