

# Tools for Creating Interactive Storytelling Experiences

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# Talk Overview

## 1. Bird's eye view

- a. What interactive experiences simulate well
- b. What interactive experiences simulate poorly

## 2. Related Work

## 3. Examples?

- a. Ensemble

## 4. How can we push this work further?

- a. How do we make visualizing for generative spaces more dynamic to give the author more options to explore and discover the limits of a design space?

# What games are really good at simulating

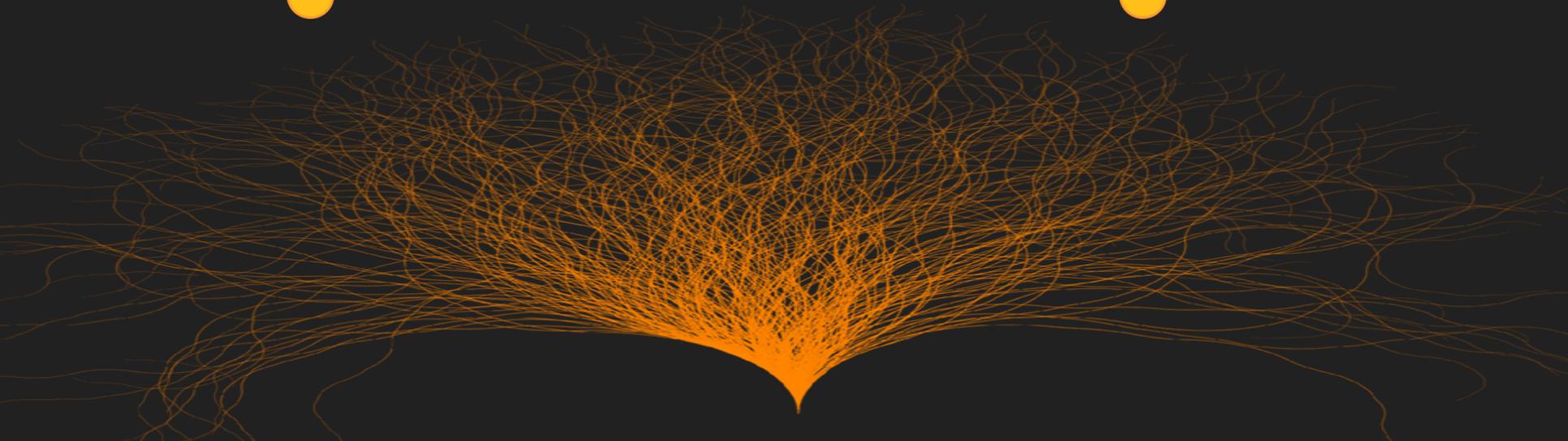
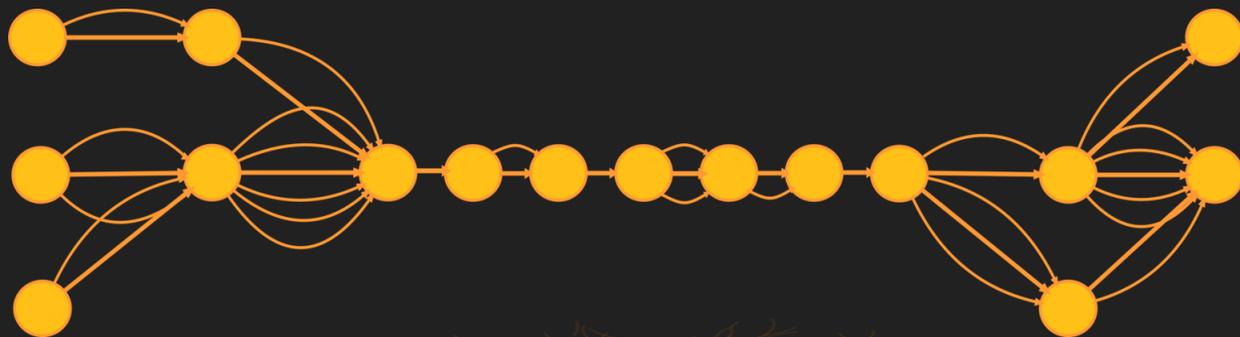


Great advances have been made in the graphic fidelity and physics simulation in games

Why? Because other disciplines have done the work to model physical space and motion. The main barrier is technology not how to model these events.



# A vision of the future



# What it takes to model social interaction...

- Modeling social interaction in videogames has a lot more barriers than modeling physics
- Systems capable of modeling sophisticated social interaction are large and complex
- We need to allow users to interface with these systems in ways that promote creativity and good authoring decisions
- We need a tool that can help alleviate these issues

# Related Work

- Tanagra (Mixed Initiative-Level Design)
- Facade (Modeling Social Systems between a few actors)
- Prom Week (Modeling Social Systems among many actors)
- Blood and Laurels (Mobile game using deeply social AI)
- Twine (Tool for creating interactive, nonlinear stories)
- D3 (Visualization Library)

# Existing examples...



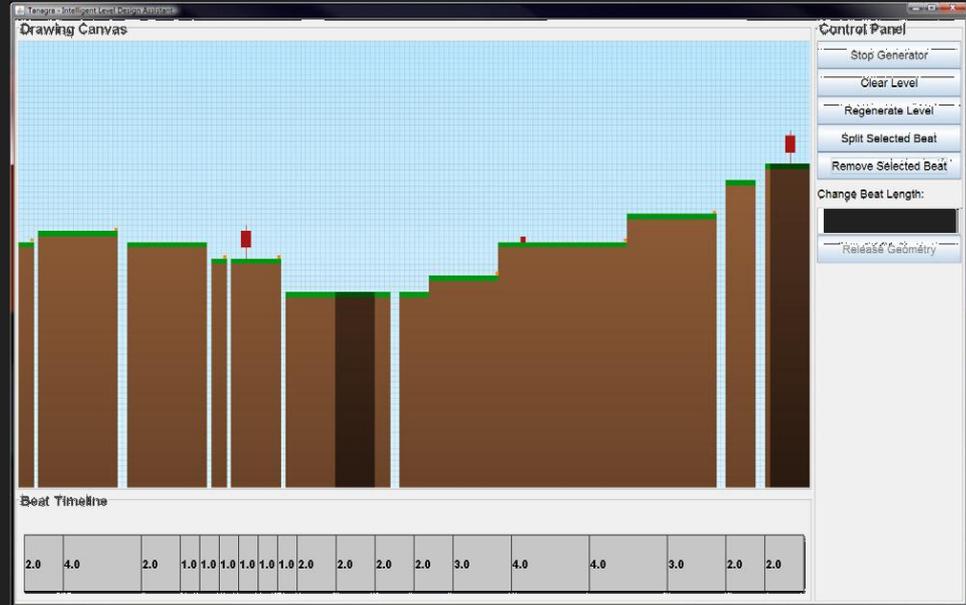
# What do all of these games have in common?

- Deeply social AI
- Complex underpinnings to create fully realized AI characters
- Handle the varied ways that players can interact with this highly complex system
- Varied ways to codify social interaction
- In essence, large systems that require a special tool to help users interface with them

# Tanagra: An Exemplary Interface

Tanagra is an exemplary interface because it is a strong environment for working in procedural space.

Tanagra is a tool that reacts to a user's input and allows them to customize a procedurally generated design space.



# Prom Week/Ensemble: A Case Study

Ensemble is like a social physics system. Prom Week stylizes social interaction the way that video games like Mario stylize physics.

Prom Week is built off a system called Ensemble that tracks various information about the social climate and runs a loop to continually update the social state.

## Tracks:

- Relationships
- Social Networks
- Statuses
- Traits
- A social fact database
- A cultural knowledge database



# Prom Week/Ensemble (cont.)

How does Ensemble react to player choice and changes?

Three steps:

- Desire formation
- Social game selection
- Performance realization

# Review of the needs and challenges of this space

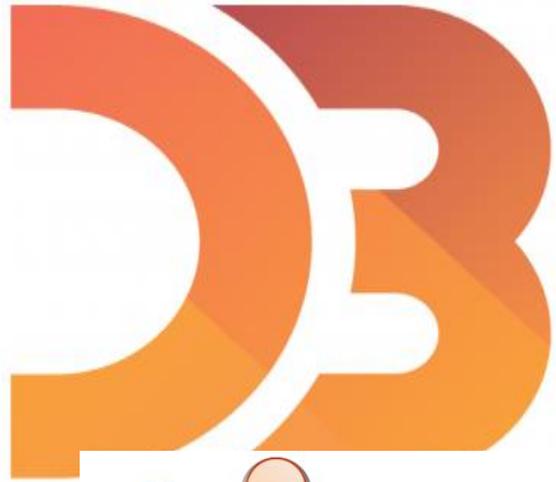
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# Stating those challenges into two succinct questions

## Research Questions:

- How do we visualize the social and narrative data for crafting social story worlds?
- How do we make visualizing for generative spaces more dynamic to give the author more options to explore and discover the limits of a design space?

# The visualization architecture is in place



- Libraries such as D3 and Cytoscape already exist
- The challenge and innovation space is not in data visualization, but in figuring out how to use these existing tools to provide pertinent feedback on something complex like a social state

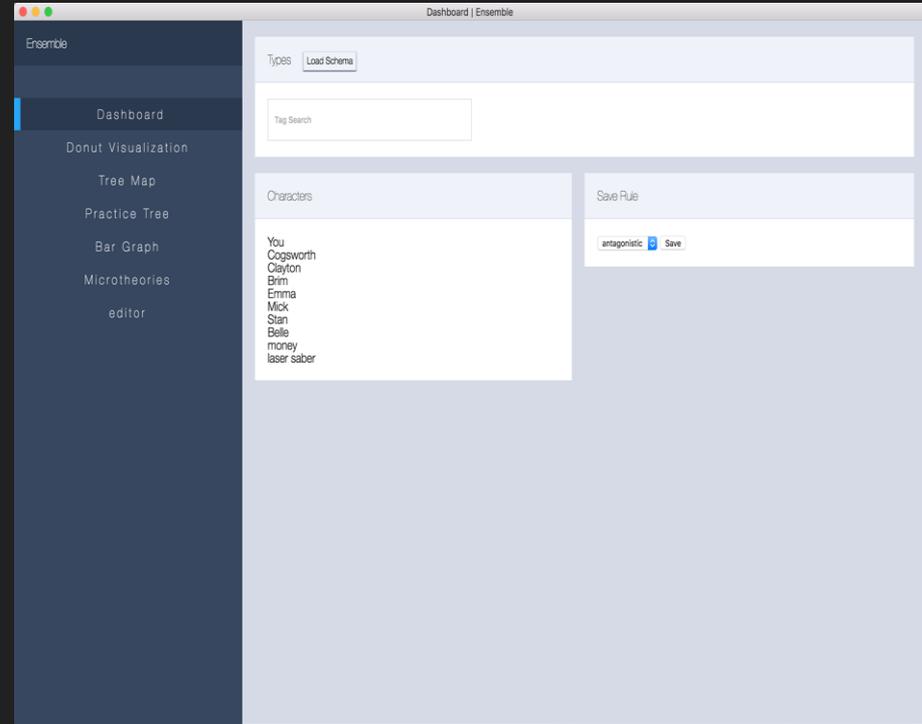


# The Ensemble Authoring Tool

- It is important to draw the distinction between Ensemble and the tool
  - Ensemble is for parameterization; the authoring tool is for interfacing with Ensemble
- Our research group set out to create a tool that allowed people to more effectively interface with Ensemble
- We also set out to include some examples of mixed-initiative design a la Tanagra (still in the works)

# Decoupling data from visualization

- One key design decision was to make visualizing data from Ensemble as modular as possible
- Our authoring tool can take in data in a variety of formats, format it to the appropriate visualization library, and create a pertinent graph for the user
- This allows for more dynamic visualizations that can account for the vast differences in modeling



# We can visualize social spaces of play by taking data from Ensemble

- The test case we used to visualize social play data was Ensemble and D3
- Thus far, the tool can take a variety of different data from Ensemble and display that data in a variety of graphs either through D3
  - This is independent of the format of the data

# Visualizing Rules from Ensemble

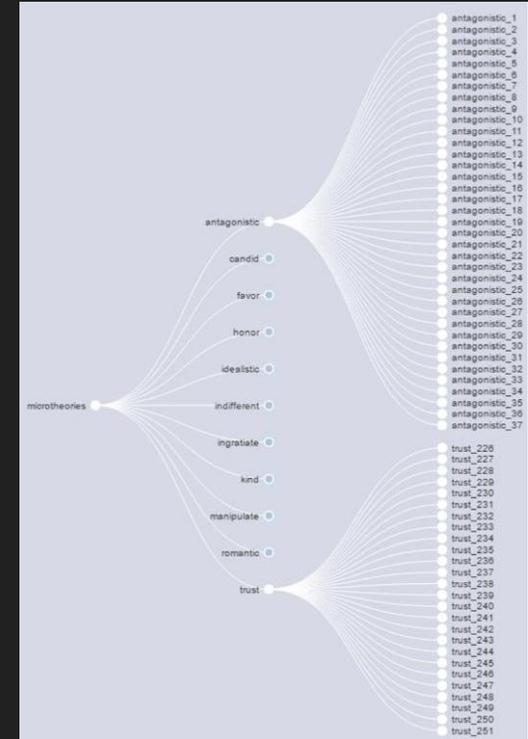
- One Rule



- A Few Rules



- Many Rules



# Future Work

- It is our hope that this tool is modular enough and abstracted enough that it can work in most other authoring design tools regardless of how that tool models social interaction
- The tool should provide more robust feedback and the authoring suggestions from the tool should be more sophisticated
  - The tools should know “good” from “bad” authoring decisions
  - Should be able to craft social story worlds on its own like Tanagra by automating some of the basic processes of creating a story world

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Q/A

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