

# Prom Week

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**expressive**intelligence**studio**

UC Santa Cruz

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GDC 2012 – AI Summit



# PROM WEEK



**INDEPENDENT  
GAMES FESTIVAL  
FINALIST**

<http://www.promweekgame.com>

Mako: What I want to say is: You're awesome, and if you were lost in the same sector, I would definitely give you directions.

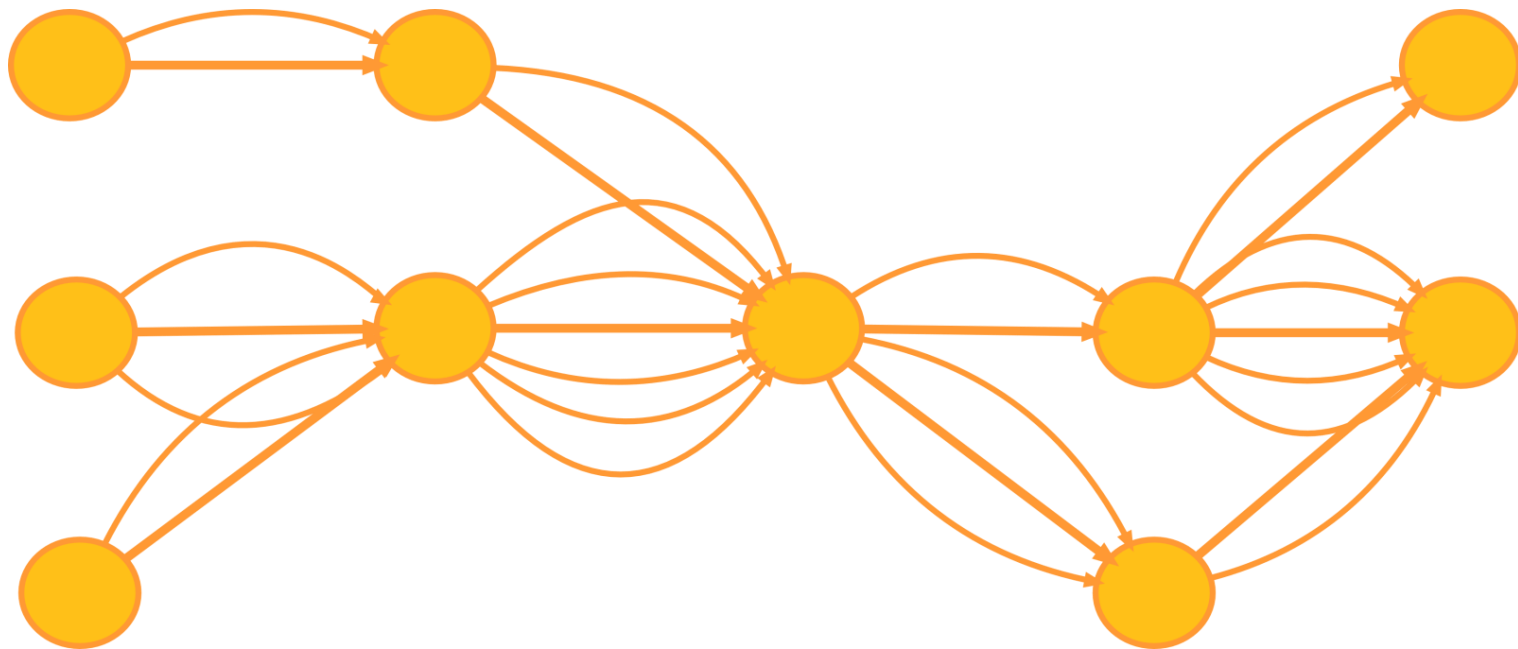


Good to know.

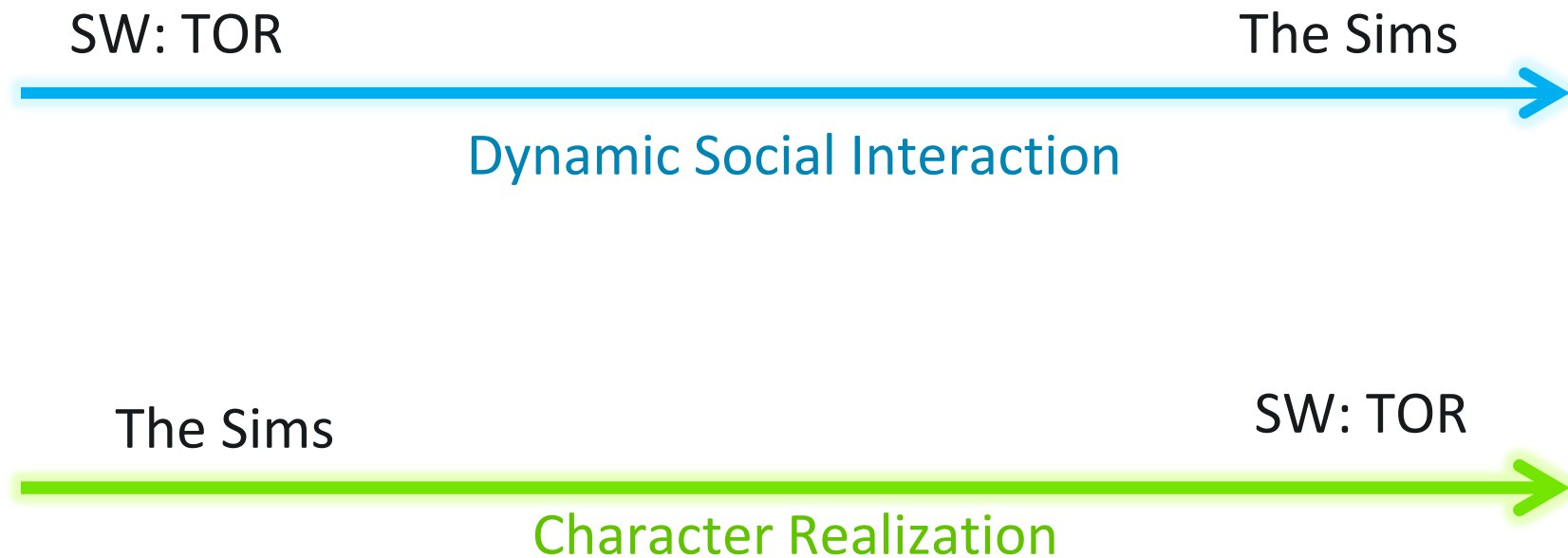
I am pretty awesome.

I'd do the same for you.

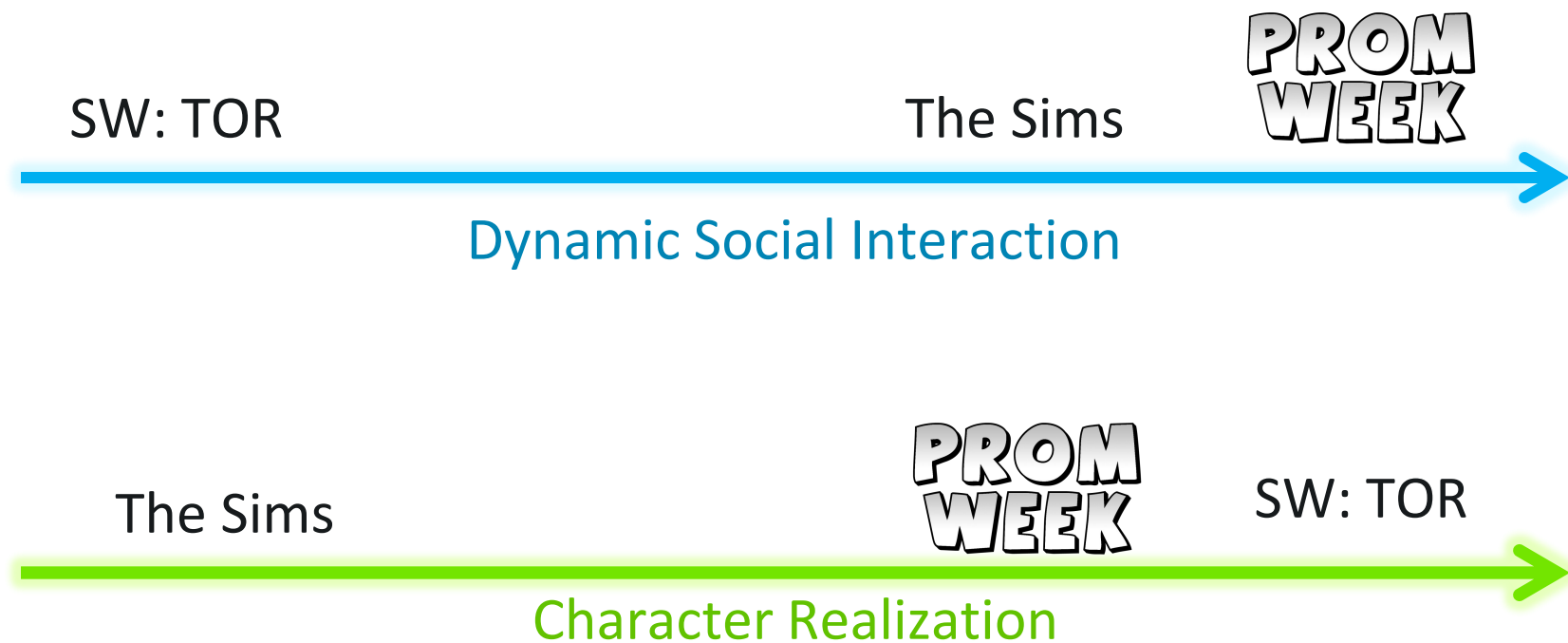
# Explicitly Defined Interaction Points



# Rich Realization & Deep Social Interaction



# Rich Realization & Deep Social Interaction



# “Social Physics”



Angry Birds

<http://www.rovio.com/index.php?page=angry-birds>





# First-Class Interaction Patterns



Façade

<http://www.interactivestory.net/>



# Demo



# Social Exchange

## Social Exchange

Intent

Preconditions

Initiator Influence Rule Set

Responder Influence Rule Set

Effects

Instantiations

Ask on a Date

Show Off

Idolize

Share Interest

Open Up

Text Message Break Up

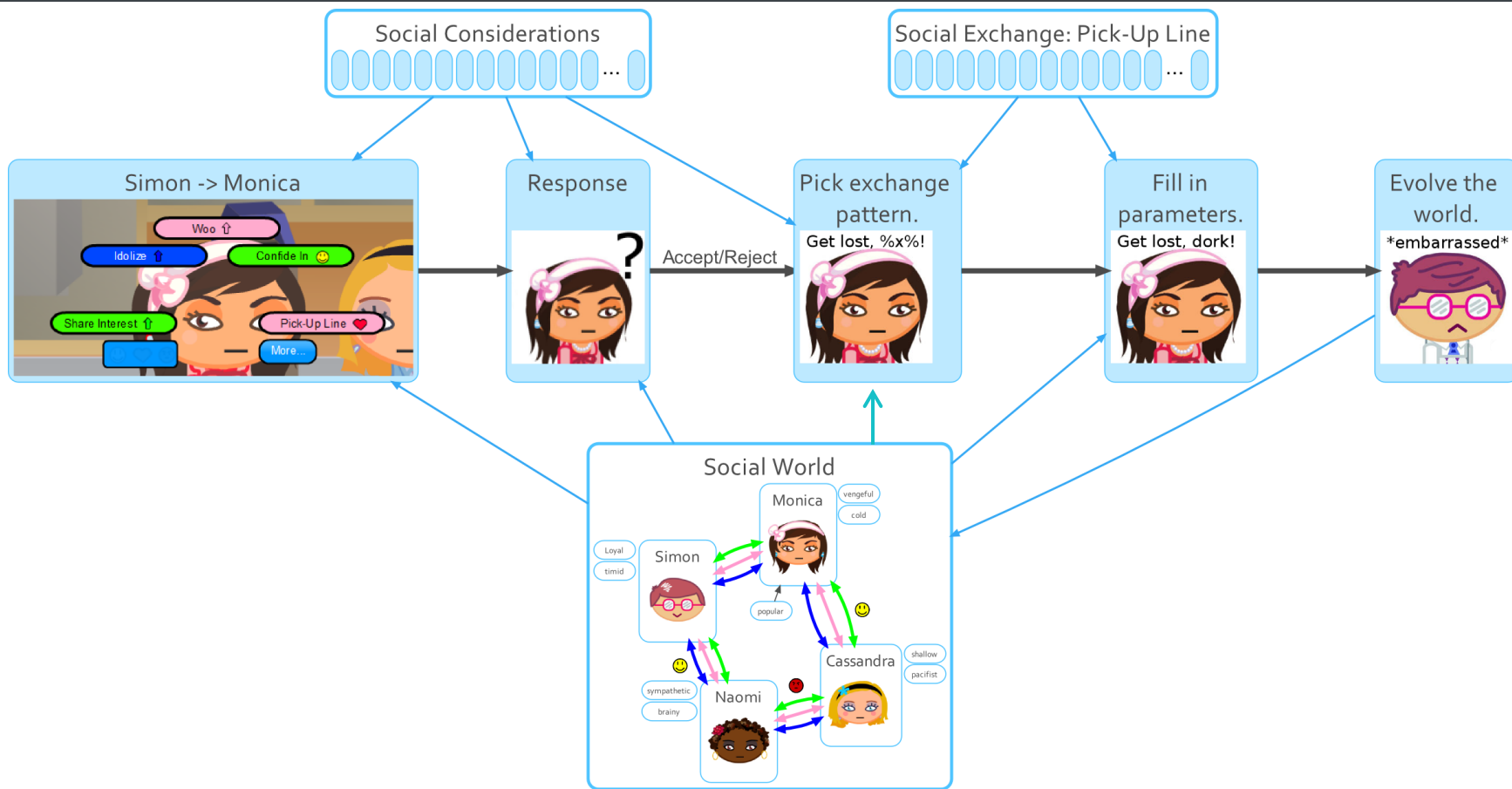
Make Plans

Insult Friend Of

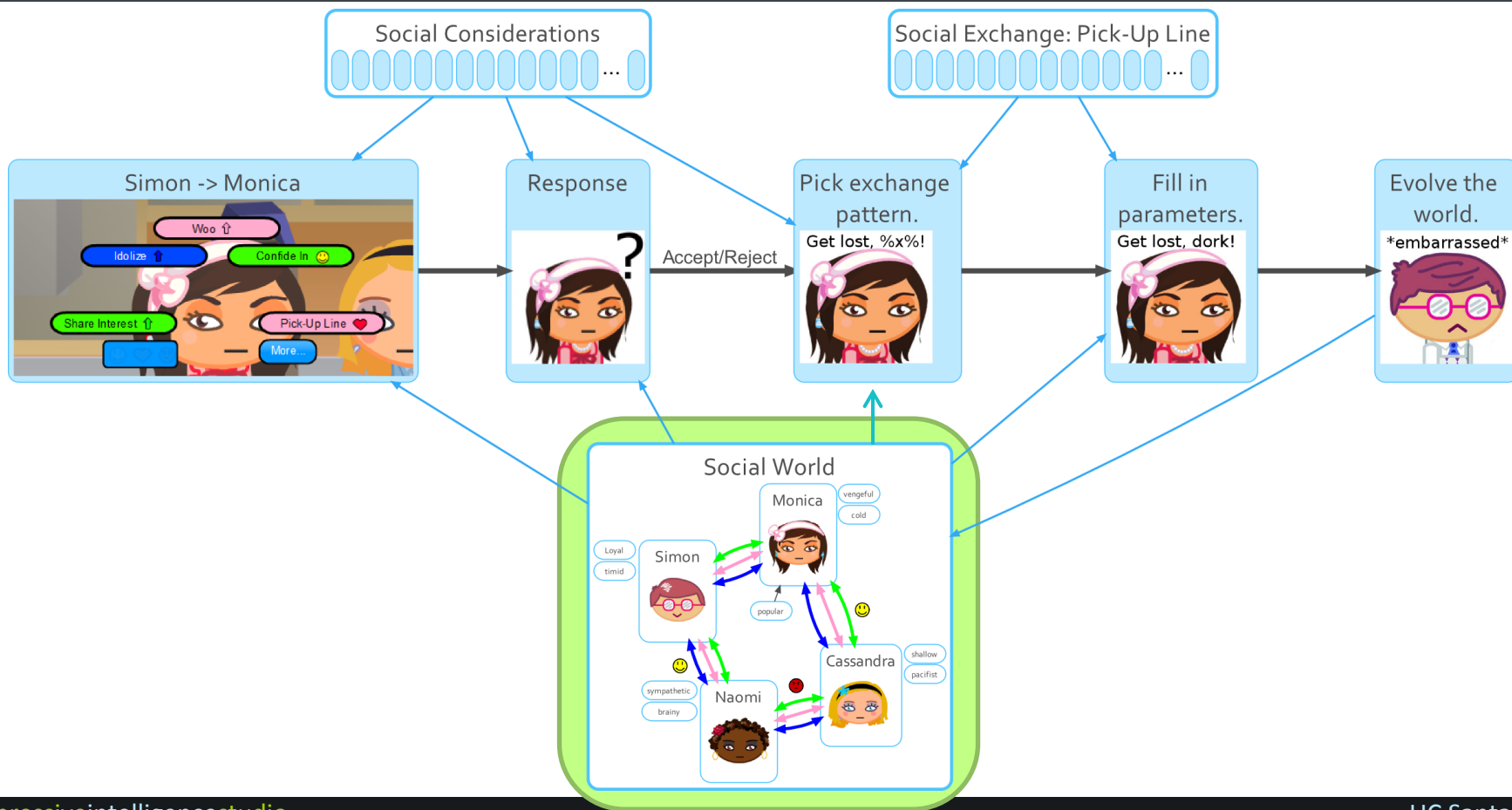
Bully

and more...

# Prom Week's Process Flow



# The Social World



# Relationships, Statuses, Character Desc.

## Character Description

- Traits (compassionate, arrogant)
- Character-specific locutions (“noob”, “word”)

## Relationships

- Friends
- Dating
- Enemies

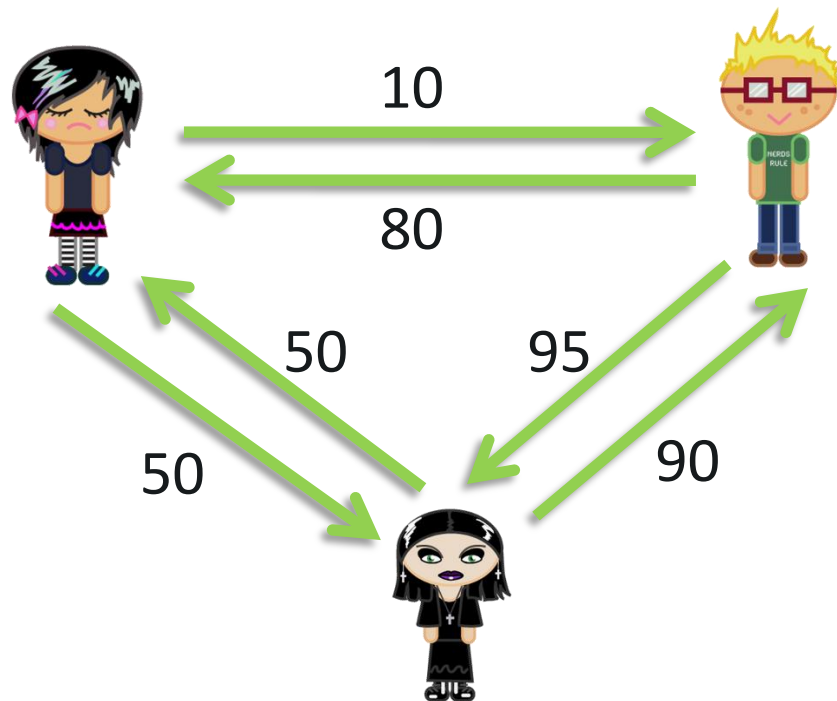


## Temporary Statuses

- Heartbroken
- Cheerful
- Popular
- ...



# Subjective Opinions



**Buddy**

**Romance**

**Cool**

# Social History

2: Doug was all fawning over Kate and it was like embarrassing

Character	Changes	Fallout
Doug	 Changes:  Fallout: 	Kate  Changes:  Fallout: 

3: Nicholas used looks to shoot down Kate's text message break up.

Character	Changes	Fallout
Kate	 Changes:  Fallout: 	Nichola  Changes:  Fallout: 

4: Nicholas bragged Monica about being like a prodigy or whatever

Character	Changes	Fallout
Nichola	 Changes:  Fallout: 	Monica  Changes:  Fallout: 

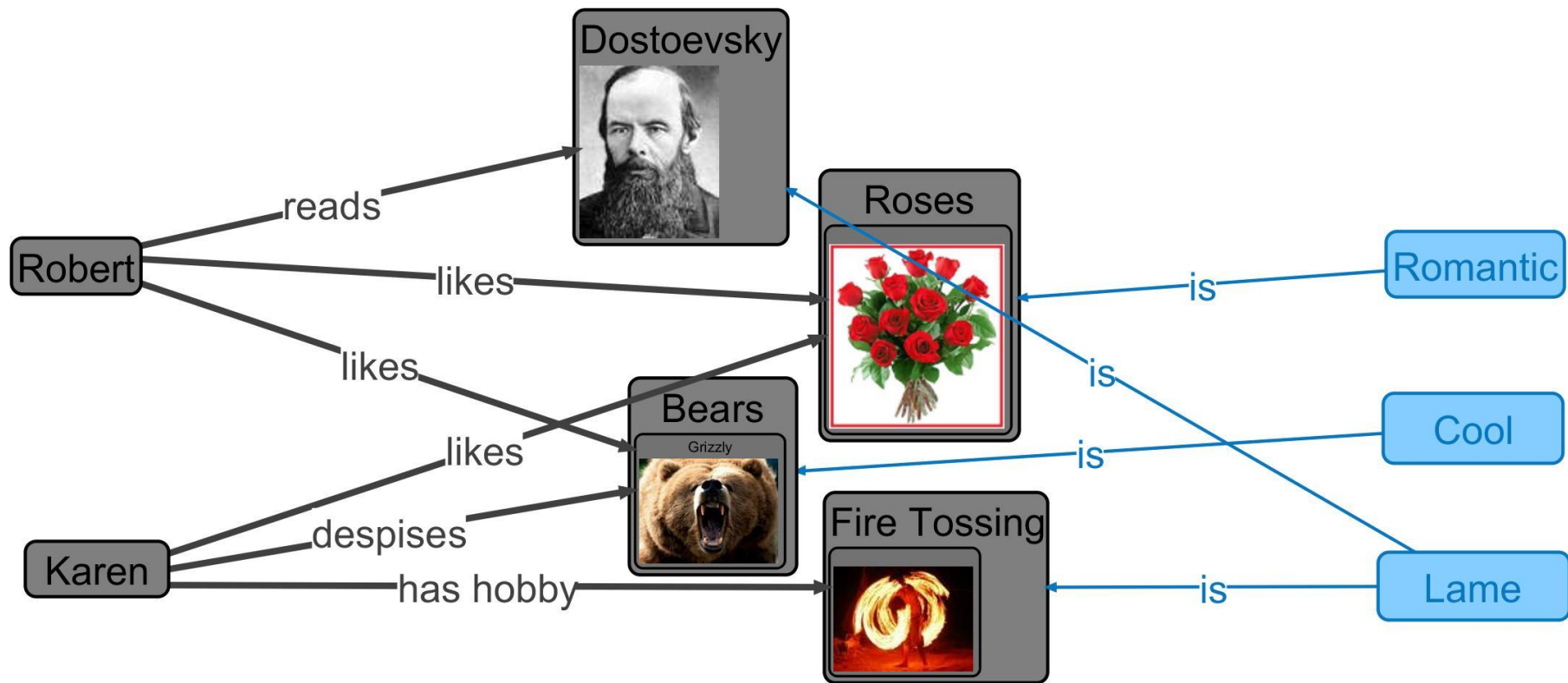
Romantic

Mean

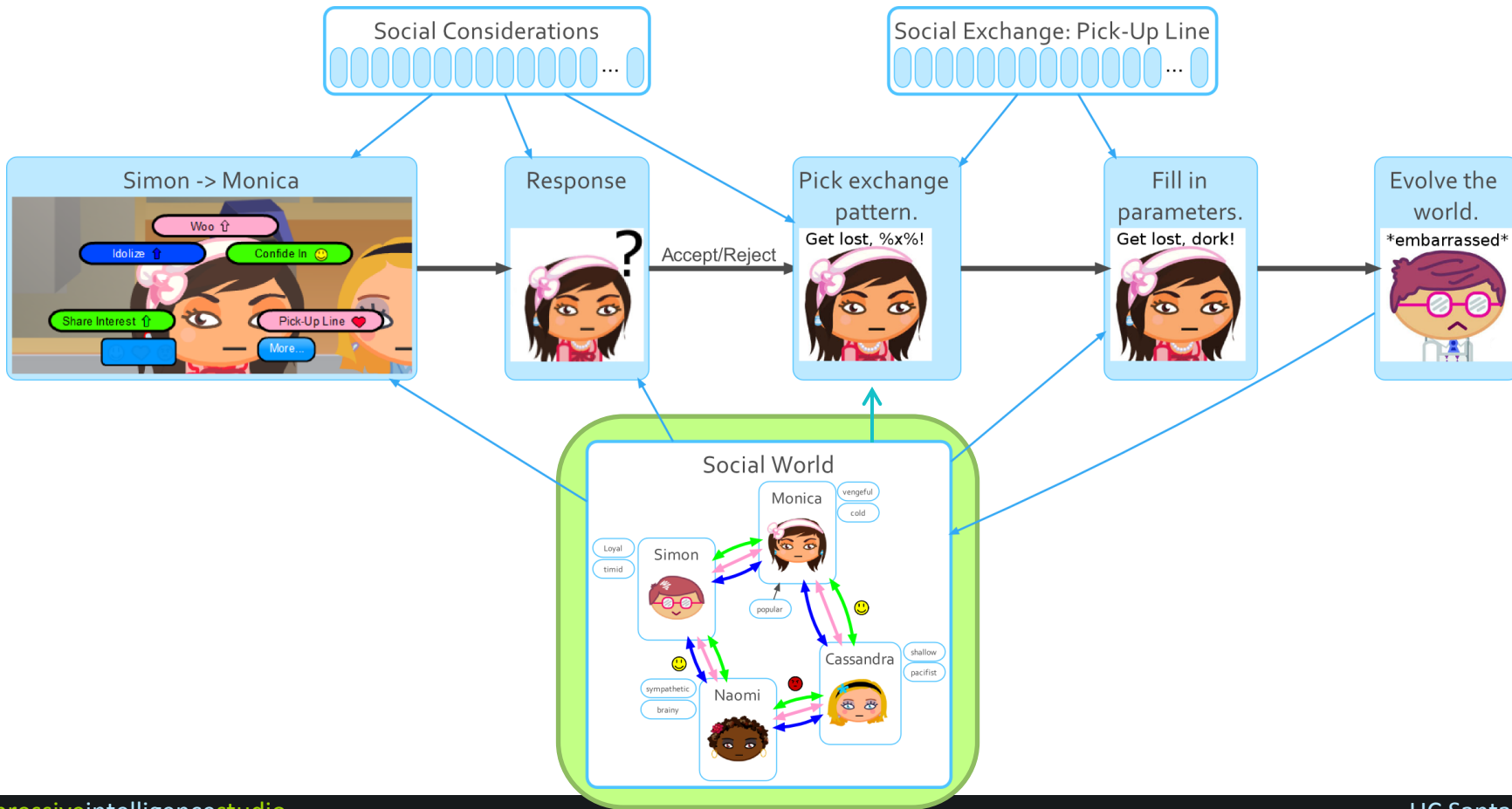
Cool



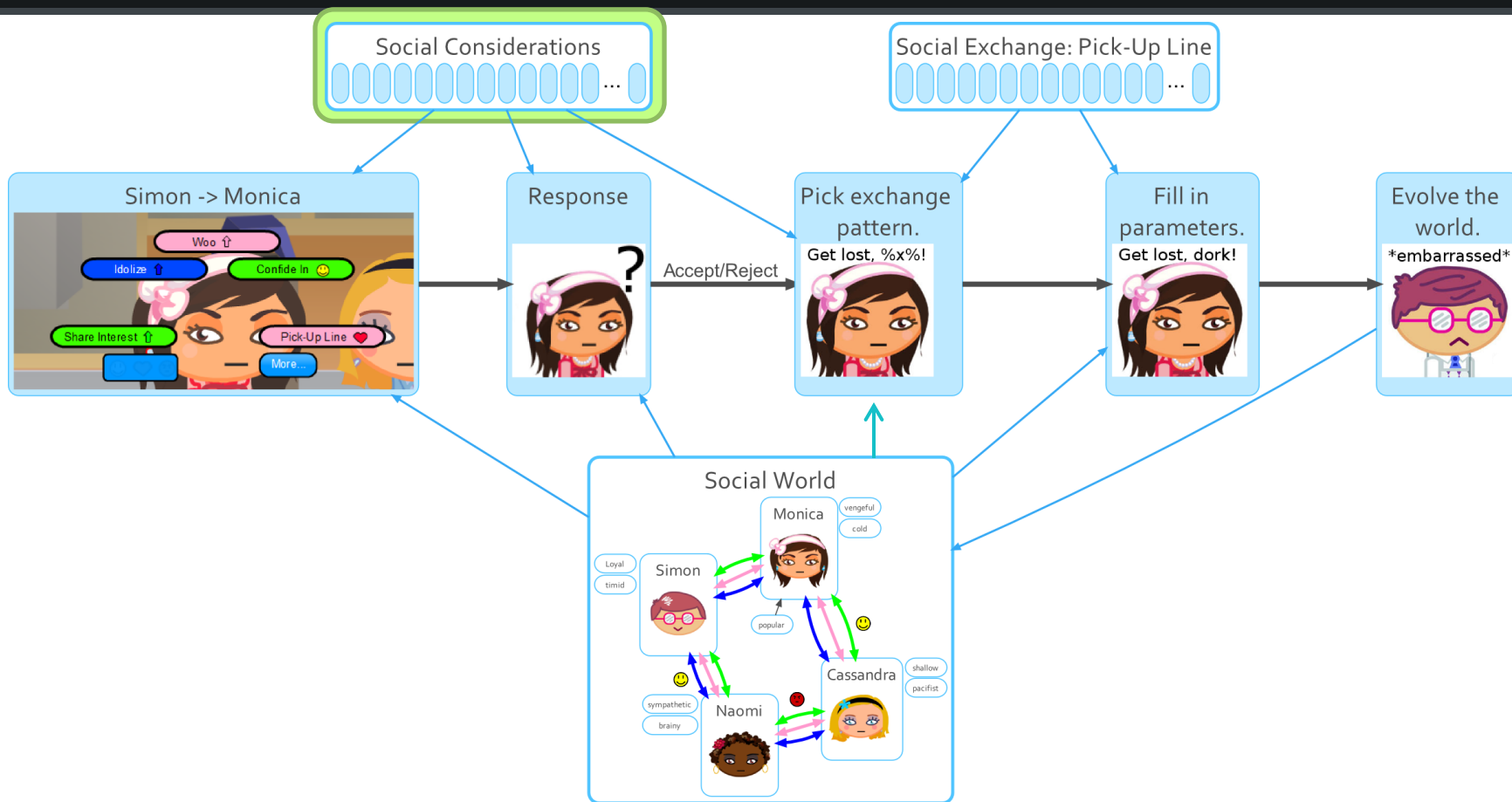
# Cultural Knowledge



# The Social World



# Social Considerations



# Example Social Considerations

Rule	Weight	Intent
friends(x, y)	4	nice(x, y)
friends(x, y) and hasCrushOn(x, z) and romantic(y, z, recently)	2	mean(x, y)
highRomance(x,y) and mean(z,x,first) and mean(y,z,second)	3	date(x,y)

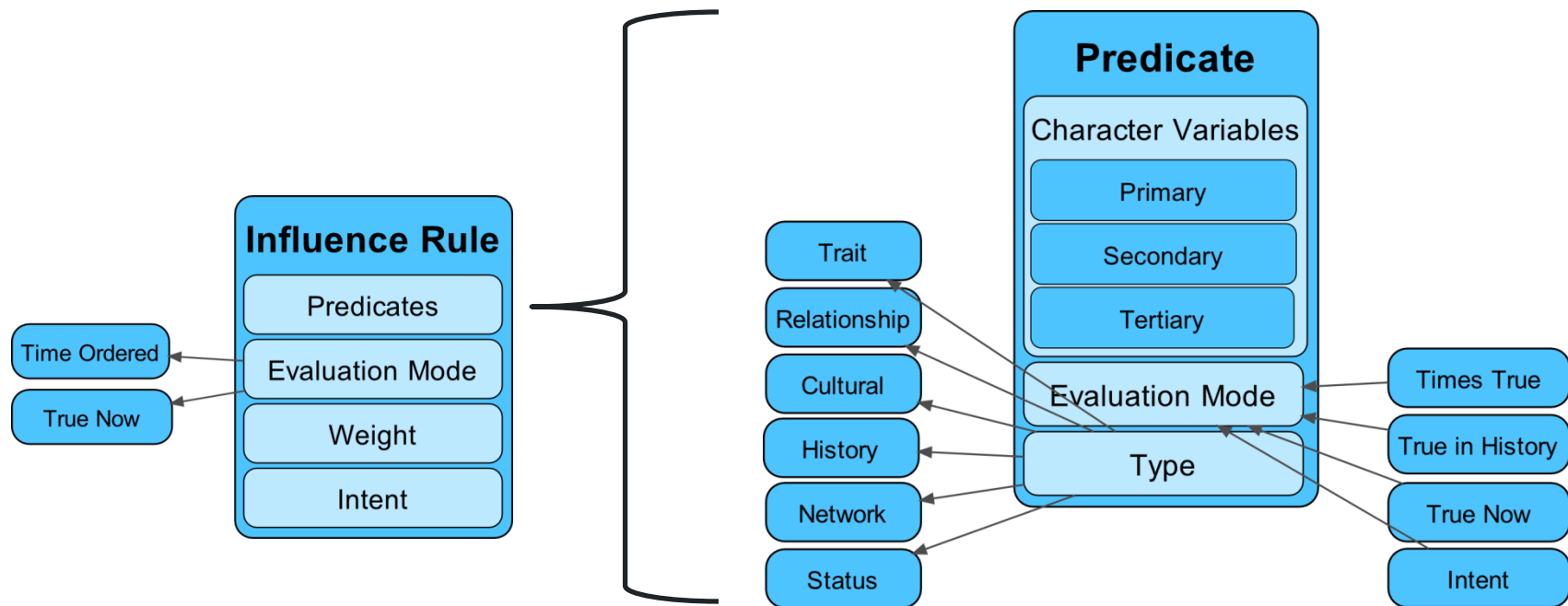
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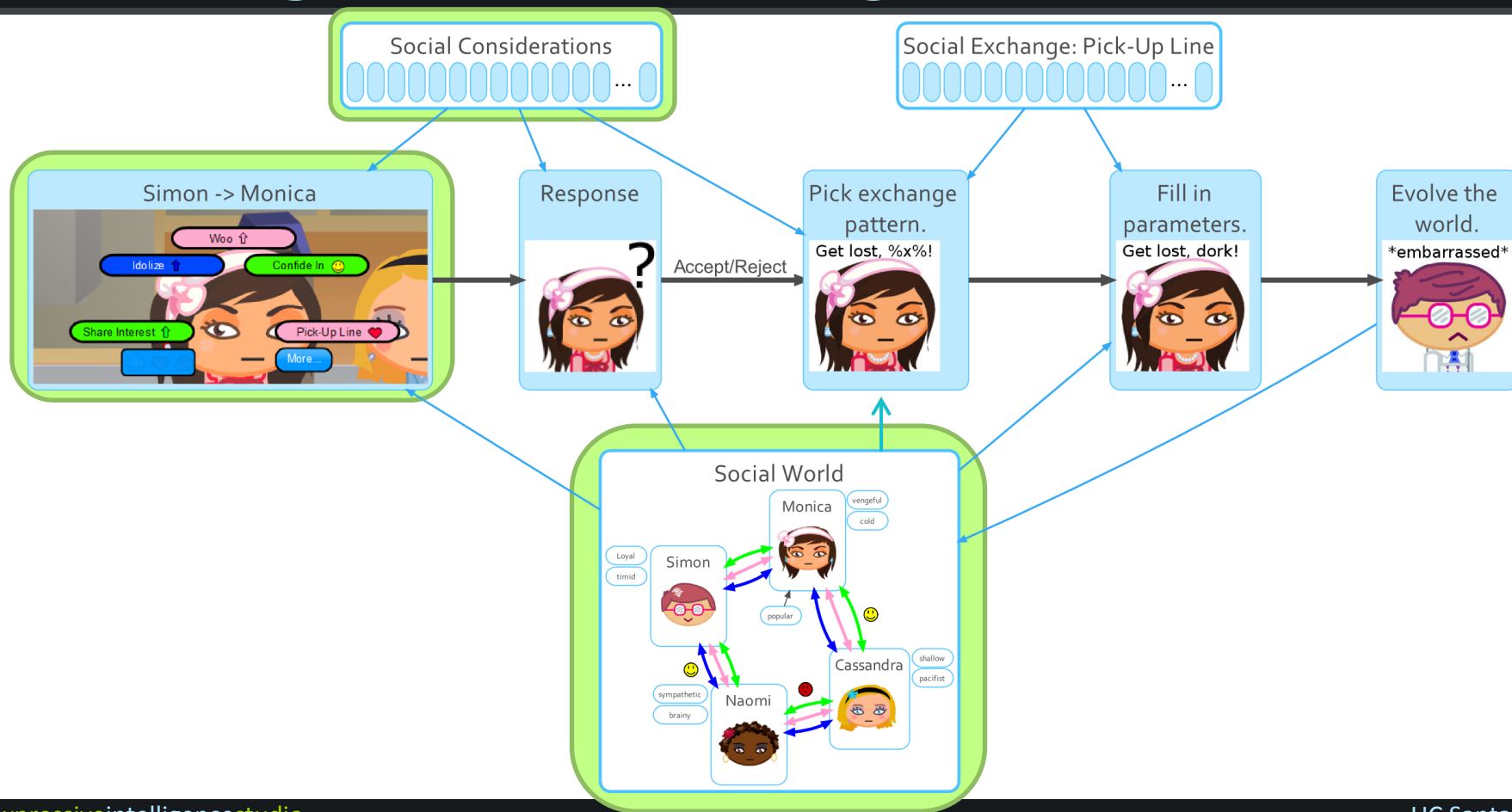
And 5,000 more!

# Social Considerations

- *Social considerations* are rules that influence behavior

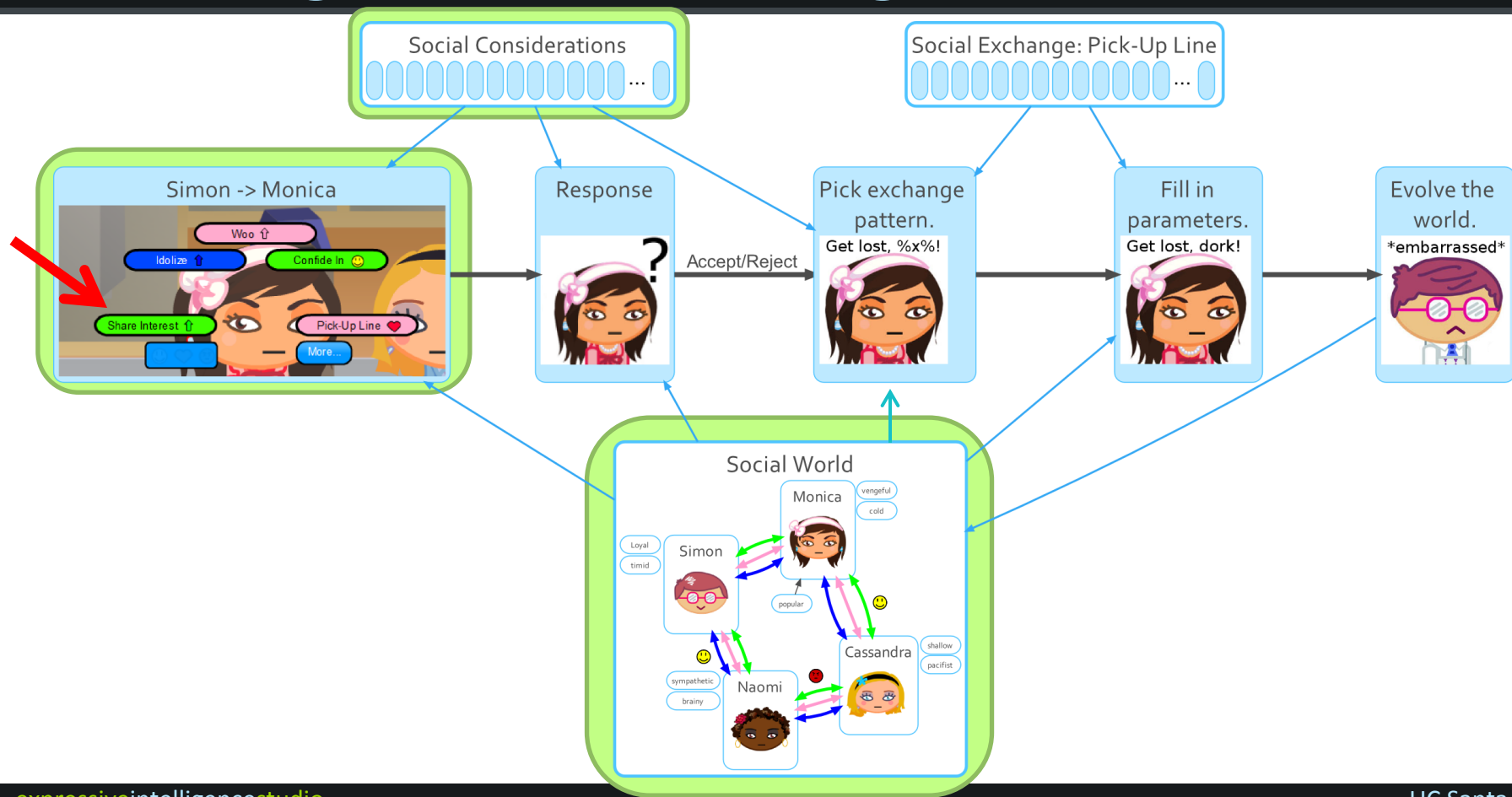


# Choosing a Social Exchange

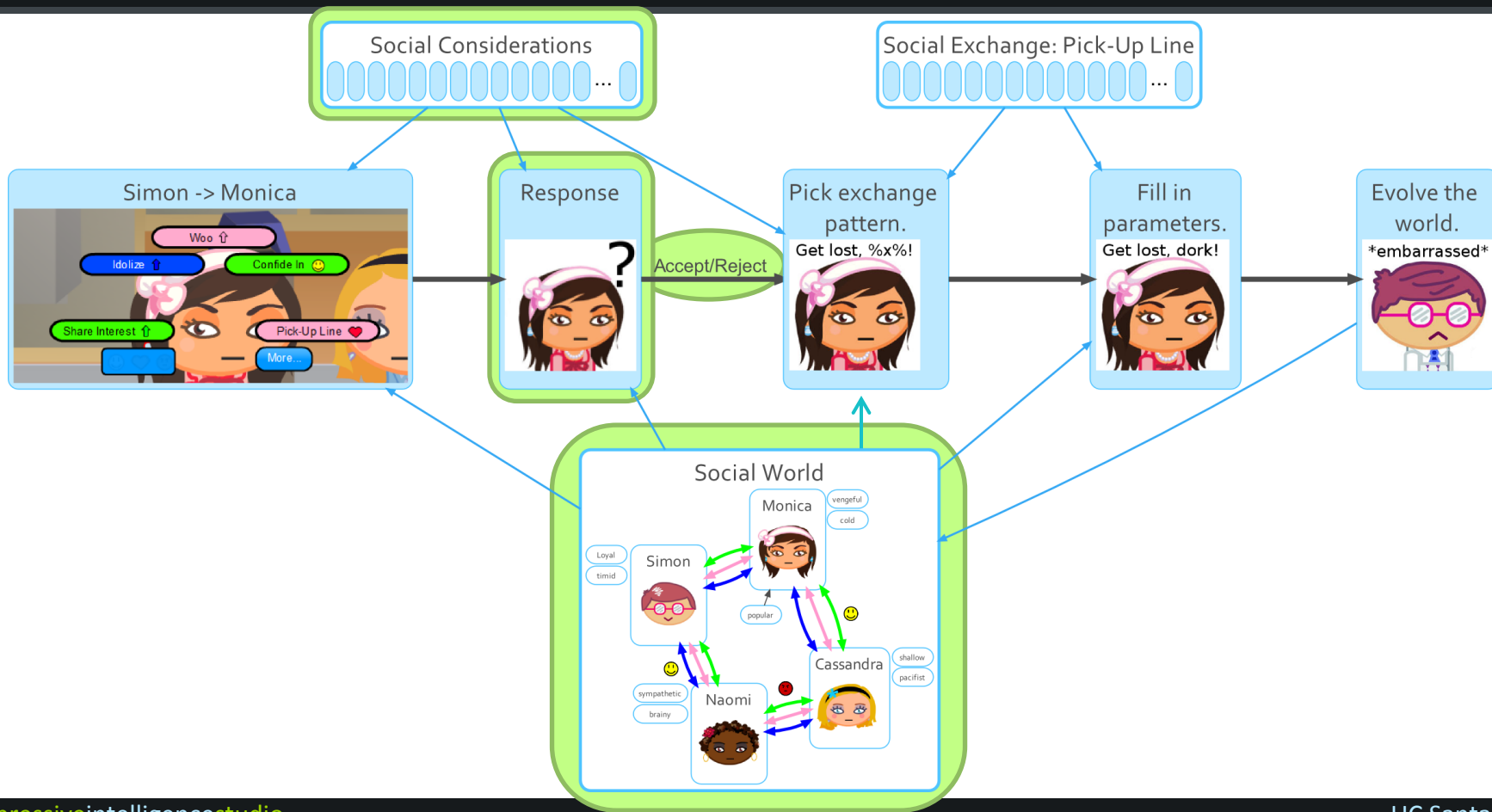




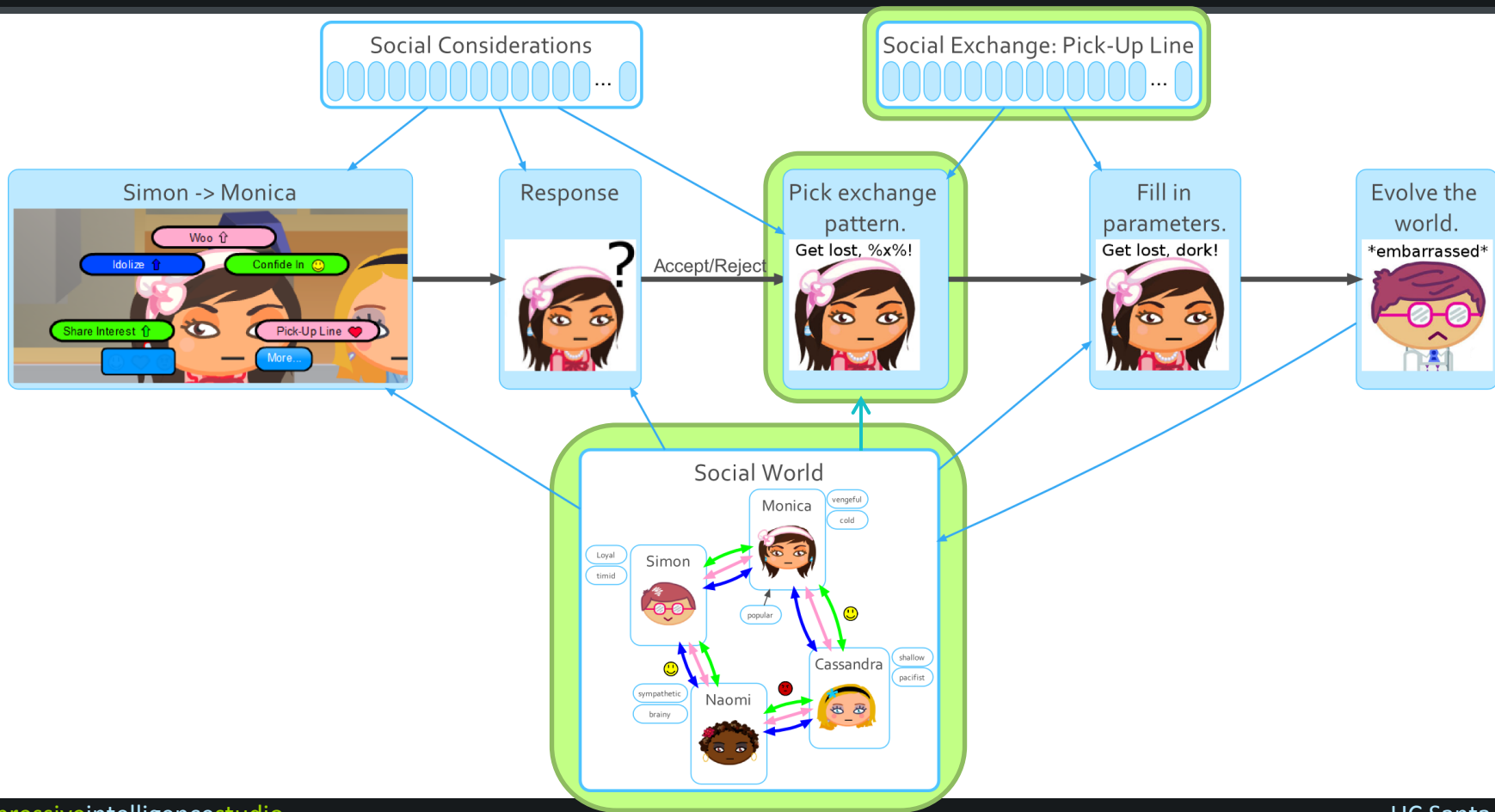
# Choosing a Social Exchange



# Responding to a Social Exchange



# Responding to a Social Exchange



# How and Why Characters Respond

- *Accept* or *Reject* based determined by considerations
- Most salient response chosen
- Each changes the social world in different ways

*Y* has done something to embarrass *Z* recently  
*X* is enemies with *Z*.

Accept •

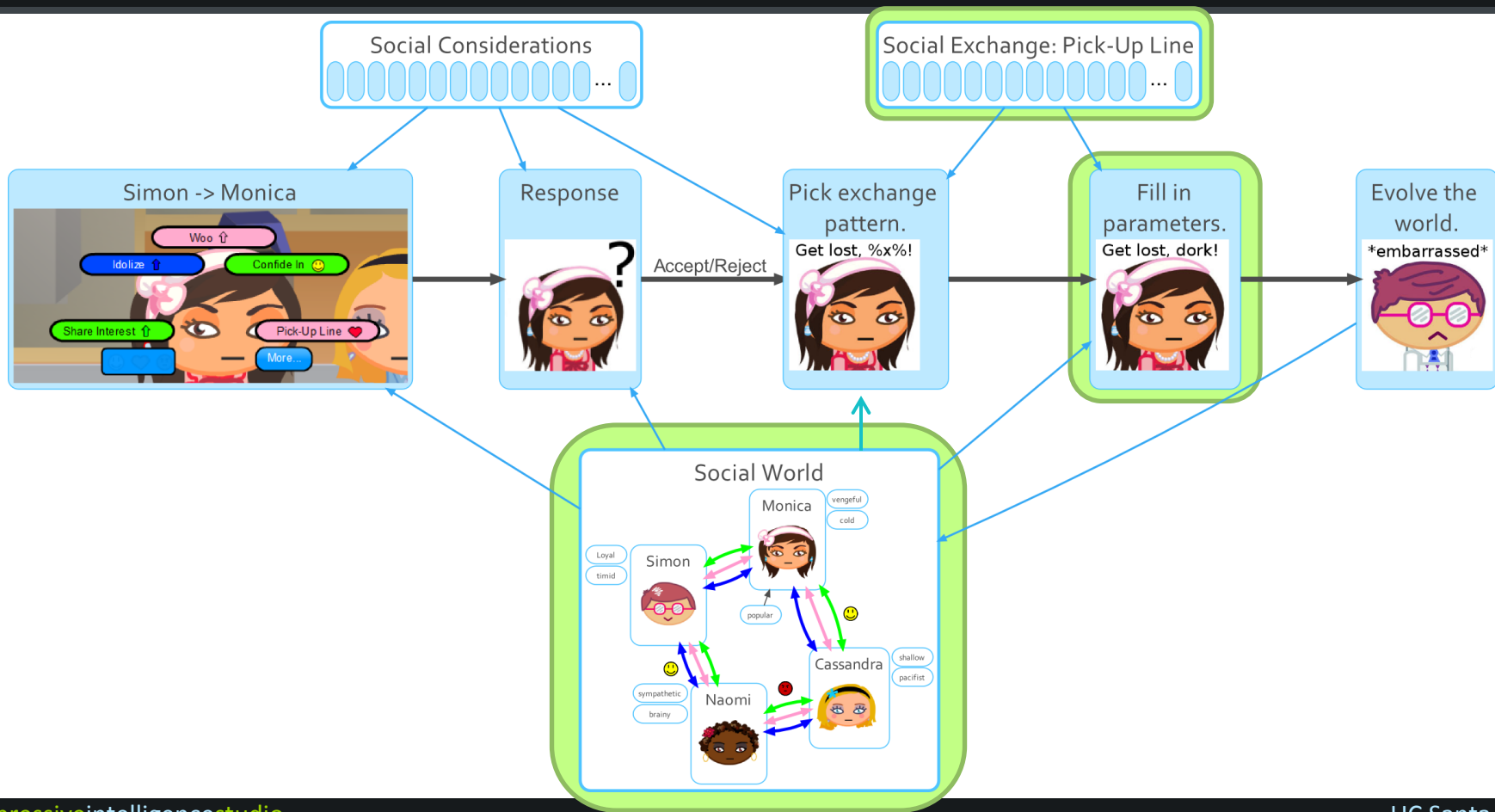
recently

•

## Reminisce

```
Accept: => buddyNetwork(responder, initiator) + 20
Reject: => buddyNetwork(responder, initiator) - 10
Accept: buddyNetwork(responder, initiator) greaterthan 32^buddyN
Accept: [SFDBLabel(cool,initiator,responder,0) window(0)] => buck
Reject: buddyNetwork(responder, initiator) lessthan 34 => buddyN
Reject: trait(responder, cat: jerk) => buddyNetwork(responder, initi
Accept: [SFDBLabel(cat: positive,initiator,responder,0) window(0)]
Accept: [SFDBLabel(cool,responder,,0) window(0)] => buddyNetw
Accept: [SFDBLabel(cat: positive,initiator,other,0) window(0)] => bu
Reject: [SFDBLabel(cat: positive,initiator,other,0) window(0)] => bu
:Accept: [SFDBLabel(cat: negative,other,responder,0) window(0)]
:Accept: relationship(initiator, responder, dating)^[SFDBLabel(rom
:Reject: buddyNetwork(initiator, responder) greaterthan 33^buddy
:Accept: [SFDBLabel(cool,initiator,other,0) window(0)] => buddyN
:Accept: [SFDBLabel(cat: positive,initiator,responder,0) window(8)
:Accept: [~SFDBLabel(cool,initiator,responder,0) window(0)] => bu
:Reject: romanceNetwork(initiator, responder) greaterthan 64^ror
:Accept: ~relationship(initiator, other, friends)^~relationship(respc
:Reject: relationship(responder, other, friends)^~relationship(initi
:Accept: relationship(responder, other, enemies)^[SFDBLabel(enn
:Reject: relationship(initiator, responder, dating)^status(initiator, n
:Accept: relationship(initiator, responder, dating)^status(initiator, n
:Reject: relationship(initiator, responder, dating)^status(initiator,
```

# Natural Language Generation



# Instantiation

**X:** Hey %y%. Man, I can't stand %z%...

**Y:** Tell me about it. Hey, remember that time when  
%SFDB\_(embarrassed,y,z)%?

**X:** Oh god, I totally do! %pronoun(z ,he/she)% totally had that  
coming for being such a %pejorative%!

# Instantiation

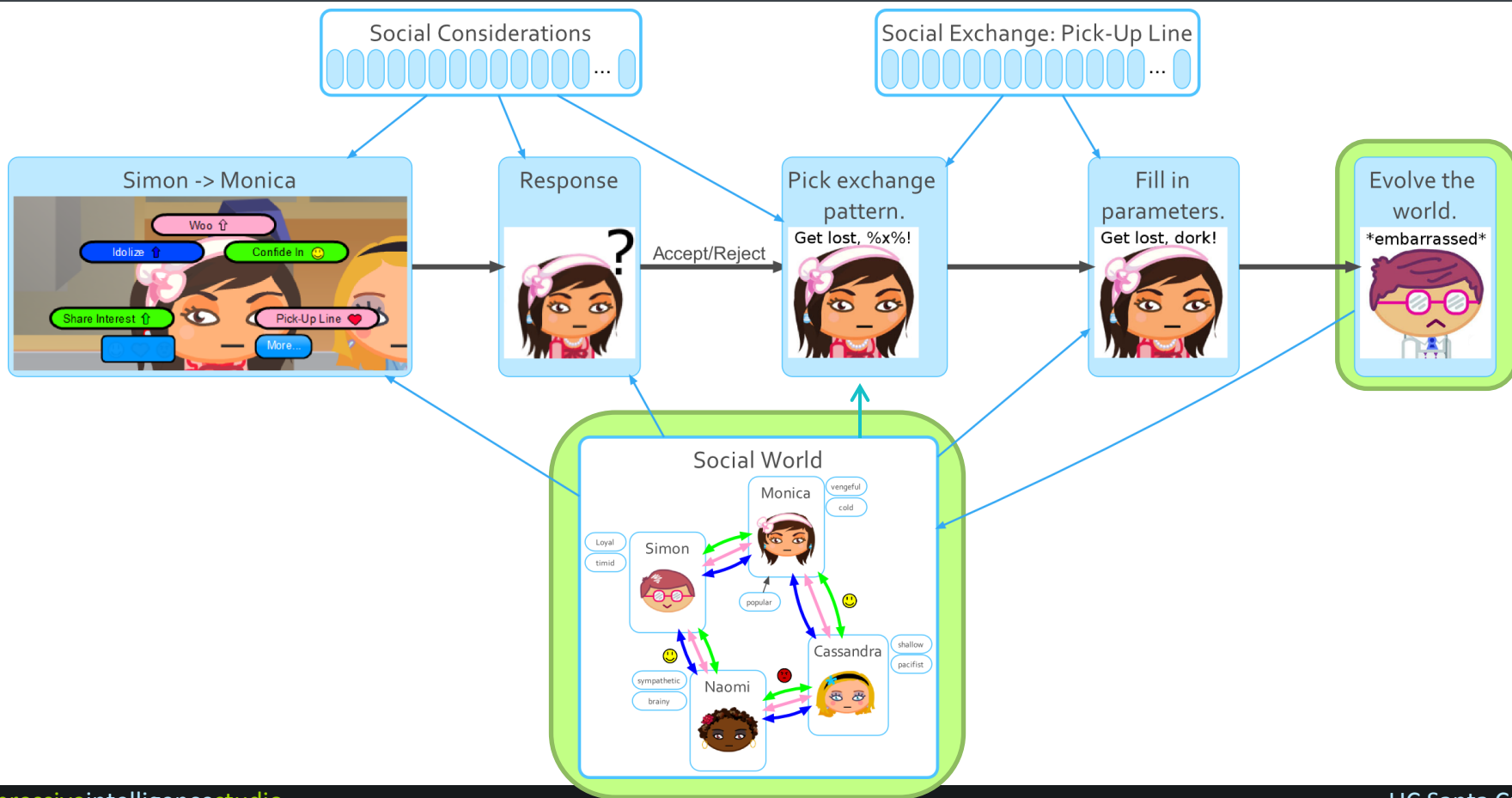
**Simon:** Hey **Monica**. Man, I can't stand **Oswald**...

**Monica:** Tell me about it. Hey, remember that time when  
**I broke up with Oswald in the middle of his tennis match  
just to make him lose?**

**Simon:** Oh god, I totally do! **He** totally had that coming for being  
such a **n00b**!



# Evolving the Social World



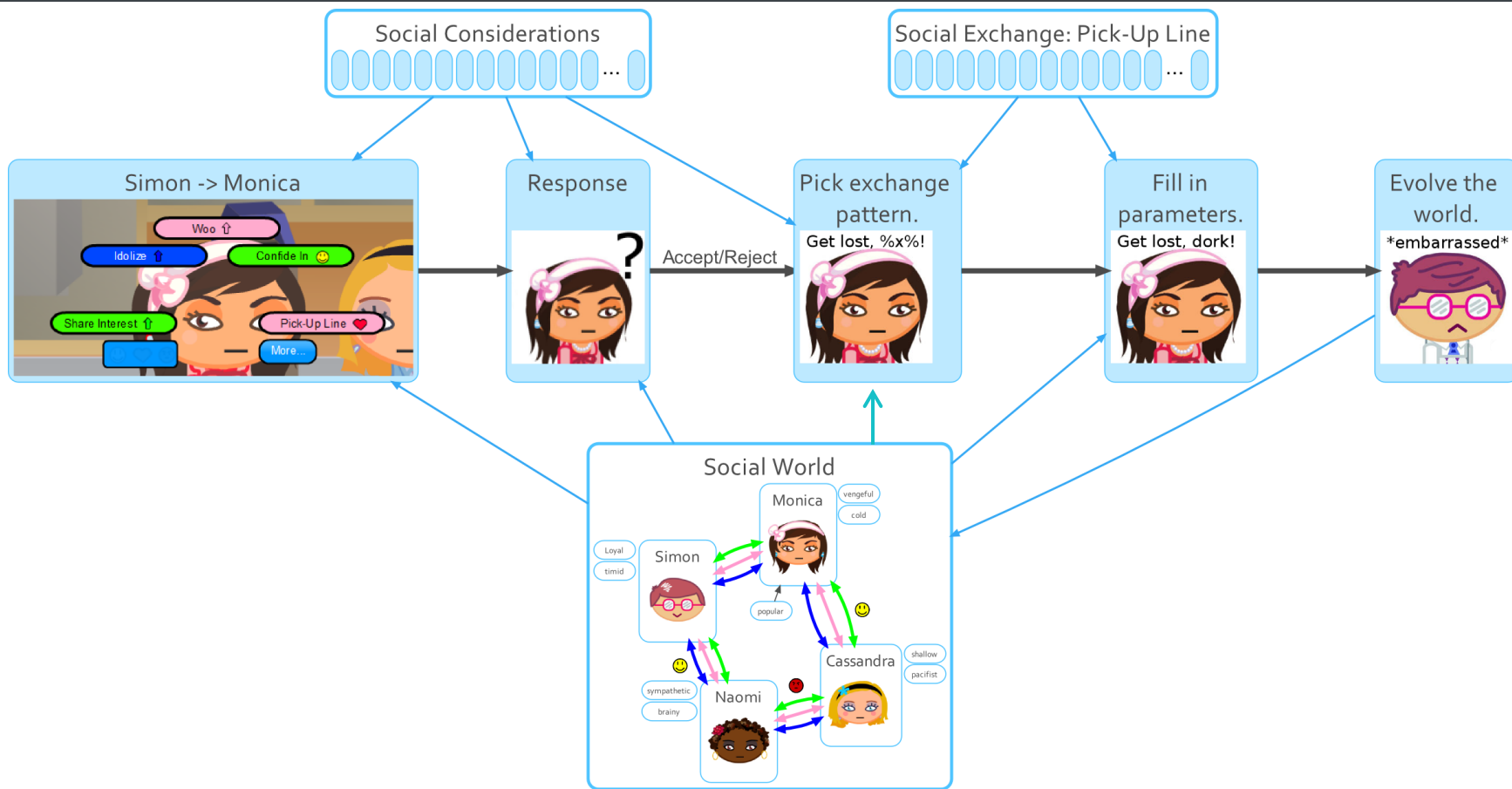
# Indirect Effects

- Cascading consequences of social exchanges
- Captures state changes across social exchanges

- E.g.
  - Cheating(x,y):
    - Dating(x,y) then Dating(x,z)
  - AngryAt(x,y):
    - Dating(x,z) and Mean(y,z)



# Takeaway: “Social Physics” through Retargeting Social Interactions



# Thanks!

expressiveintelligencestudio

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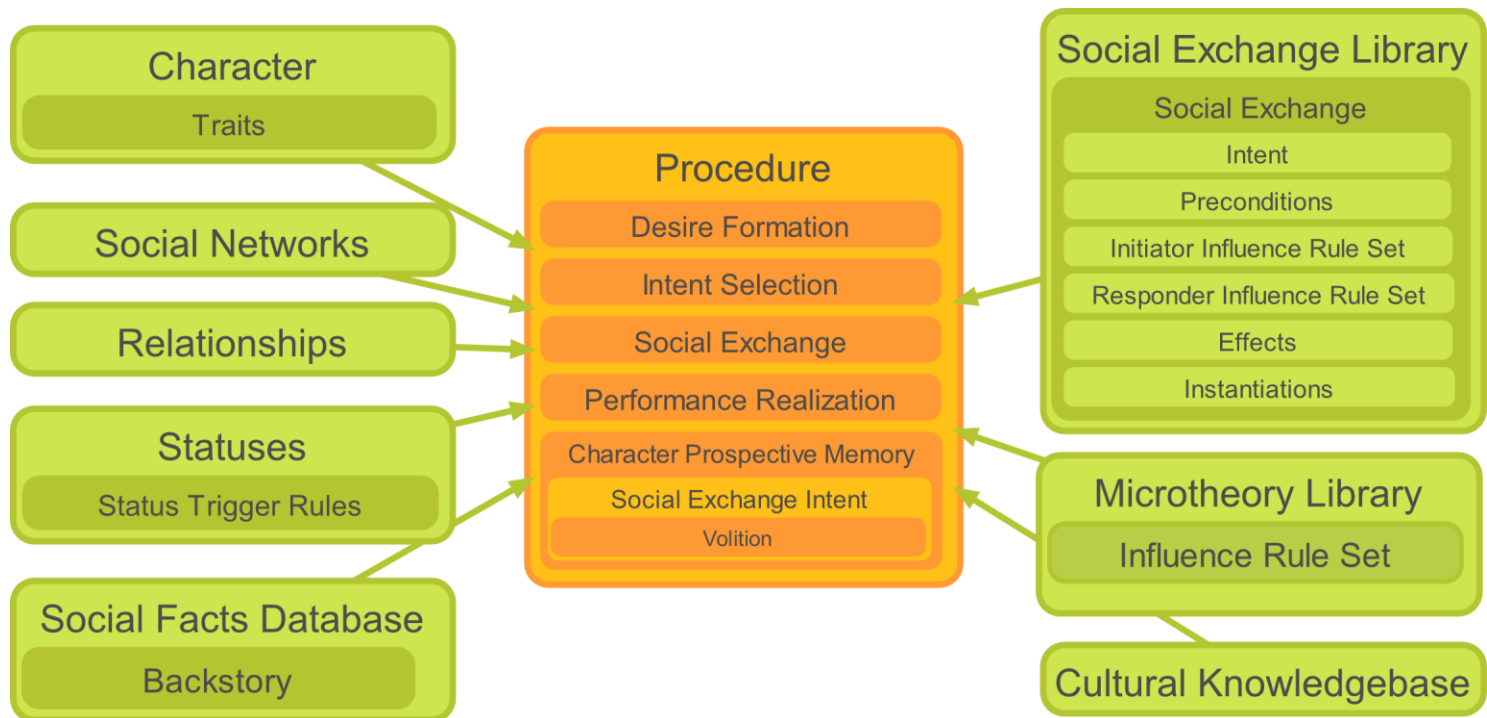
and Ben Samuel, Aaron Reed, Michael Mateas, Noah Wardrip-Fruin, Ryan Andonian, Kathleen Kralowec, Corey DiMiceli, Zane Mariano, Jacob Pernell, Christian Ress, Duncan Bowsman, Travis Brown, Melissa Bernetsky, Devon Wyland, Ellen Otsuka, Garin Kessler, Alexander Baker, Daniel Cetina, Alexander Schneider, Lauren Scott, Evan Mertz, Brandon Tearse, Alexei Othenin-Girard

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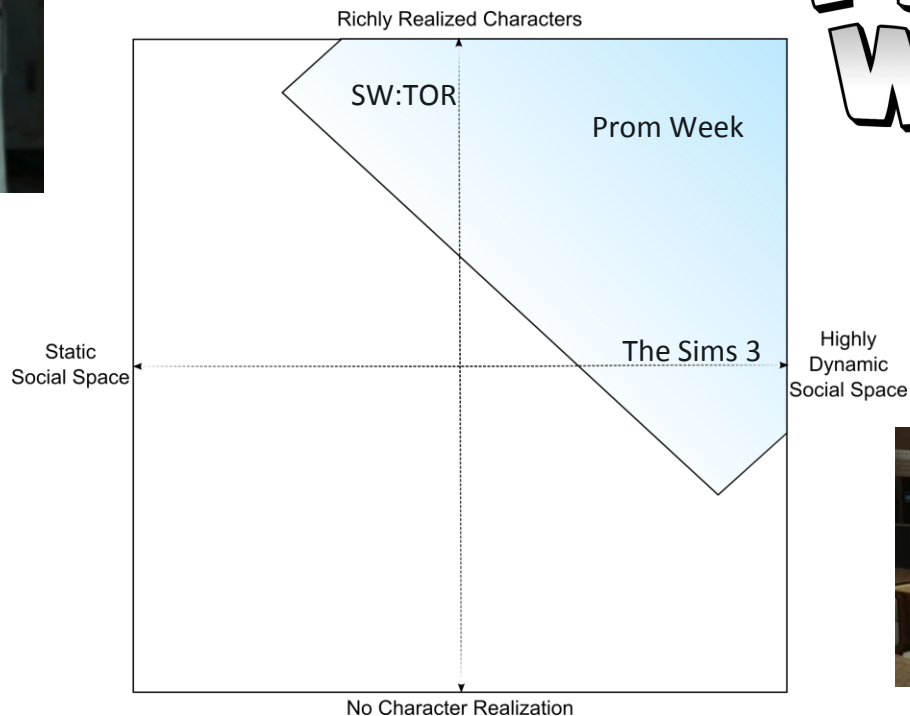
# Prom Week's Architecture



# Challenges

- Technical authoring
  - NLG + rules
  - unexpected consequences: “you’ll never get my flower!”
- What to show to the player
  - Performance vs spreadsheet
- Social space tuning
- Consistent story quality

# Rich Realization & Deep Social Interaction



## PROM WEEK

