Creativity in Story Generation
From the Ground Up:
Non-deterministic Simulation
driven by Narrative

Carlos León and Pablo Gervás
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the idea

RICH INTERACTIONS PRODUCE GOOD STORIES.
Villager

New Tristram started when some traveling merchants decided to set down here to sell to the adventurers. It grew quickly...
HUMANS CREATE THE CONTENT AND SELECT BEST CANDIDATES.
the objective

EXPLICIT COMPUTATIONAL CREATIVITY IN NARRATIVE GENERATION.
the challenge

HOW TO EXPLORE DIVERGENT STORIES
AND IDENTIFY GOOD ONES.
our solution (part one)

RICHNESS: NON-DETERMINISTIC GENERATION.
• for each state in the generation
• for each state in the generation
  – all possible next states are generated
• for each state in the generation
  – all possible next states are generated
  • next states are generated by all combinations of
• for each state in the generation
  – all possible next states are generated
  • next states are generated by all combinations of
    – all deus ex machina events
• for each state in the generation
  – all possible next states are generated
  • next states are generated by all combinations of
    – all deus ex machina events
      » all character perceptions
• for each state in the generation
  – all possible next states are generated
    • next states are generated by all combinations of
      – all deus ex machina events
        » all character perceptions
        • all character desires
• for each state in the generation
  – all possible next states are generated
    • next states are generated by all combinations of
      – all deus ex machina events
        » all character perceptions
      • all character desires
        • all character intentions
• for each state in the generation
  – all possible next states are generated
    • next states are generated by all combinations of
      – all deus ex machina events
        » all character perceptions
          • all character desires
            • all character intentions
              • all physical results from all that
that gets you a lot of states

IT IS EXHAUSTIVE AND SLOW BUT IT IS COMPLETE.
our solution (part two)

CONTROL: IDENTIFYING CANDIDATE STORIES.
• state probability
• state probability
• feature curves
• state probability
• feature curves
• generation constraints
- state probability
- feature curves
- generation constraints
- narrative objectives
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is the mystery solved?
characteristic involved process our model

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richness creation simulate world model

control evaluation metrics

is the mystery solved?

feature evolves as desired?
STellA DEMO.
Aragorn started to want to own the One Ring.
Boromir started to want to own the One Ring.
Pippin started to want to own the One Ring.
Merry started to want to own the One Ring.

Boromir started to dislike Aragorn.

Aragorn got to to take the One Ring.

The orcs started to want Pippin to die.
The orcs started to want Merry to die.
Pippin started to want to run away from the orcs.
Merry started to want to run away from the orcs.

Azog started to want Boromir to die.
Uglúk started to want Boromir to die.
Balcmeg started to want Boromir to die.
Aragorn started to want to protect Boromir.

Boromir started to like Aragorn.

Boromir got to to attack Balcmeg.
Aragorn got to to attack Uglúk.

Boromir got to to attack Boromir.
Balcmeg got to to attack Boromir.
Azog got to to attack Boromir.

Balcmeg died.

Uglúk got to to attack Boromir.
Aragorn got to to attack Uglúk.

Boromir died.

Aragorn got to to attack Uglúk.
Azog got to to attack Aragorn.

Aragorn got to to attack Uglúk.
Uglúk died.

Aragorn got to to attack Azog.
Azog died.
some conclusions

KNOWLEDGE REPRESENTATION SETS A LIMIT.
some conclusions

QUALITY METRICS ARE HARD TO FIND.
WE ARE ON IT.
WE MUST STUDY HOW PROBABILITY AFFECTS QUALITY AND NOVELTY.
the end