Orchestrating Game Generation

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Game development requires a multitude of creative skillsets (in both humans and AI).

How should the different creative domains influence each other so that the final outcome achieves a harmonized and fruitful communication across domains?

Similar to musical orchestration: by a composer, a maestro, or through jamming?
Creativity in Games
(originating from humans or computers)
Nameless One - "Now... This is between Ravel and I. Look, Ravel --"

Ravel - "...skull, skull, skull..." Ravel clicks her tongue after each word and the area widens. "Your expression is difficult to read, but I feel your FEAR from here. Corruption was *not* your choice."

Morte - "Even, I didn't have anything BETTER to do except go to one of the Lady's mazes and meet one of the evilest creatures ever to set foot in Sigil, so I said 'sure! Why not?'"

1. "Morte, be quiet. Ravel, I..."
M. Mateas, and A. Stern. "Façade: An Experiment in Building a Fully-Realized Interactive Drama", Game Developers Conference (GDC'03), 2003.
Look. You're really into dead bugs. That's cool and everything, but I'm much more of a diamond kind of girl.
Swap Hero Options:
1 - Skeleton King
2 - Bristleback
3 - Faceless Void
4 - Shadow Shaman

Type -swap # to make a choice or -swap cancel to cancel swap requests.

Medusa
Level 1 Gorgon
- Damage: 44 - 50
- Strength: 14
- Agility: 26
- Intelligence: 19
- Armor: 2

Rules
Husbandry improvement complete.
Pickaxe improvement complete.
Hand Axe improvement complete.
Hunting Dogs improvement complete.
Flood of the Nile improvement complete.
Heads of the Pharaoh improvement complete.
Grand Phoenix Egg improvement complete.
A new Pharaoh has arisen to lead your people.
Disable Atlantean Favor improvement complete.
You cannot build another Mercenary.
Mercenary created.
You cannot build a House there.
You cannot build another House.
MARRY ME?
Relations between Facets
(the Chicken and Egg problem)
Facet Orchestration

- One facet as cause, another facet as effect.
  - jump action $\rightarrow$ animation $\rightarrow$ sound effect.
Facet Orchestration

- One facet as cause, another facet as effect.
- Usually, all facets interweave less clearly.
  - level design → narrative → game design
What comes first?
AI as a facet orchestrator

Why orchestrate different PCG domains?

- Perform prototypical or full game generation
- Novel games that don't exist yet in design space
- Find bridges/patterns/stitches/semantics between facets
- Plug-n-play modular components

How to orchestrate facets?

- Machine-machine, human → machine, machine → human?
- **Conductor** (top-down) or **free-form jam** (bottom-up)?

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Game facets: Audio, Visuals, Narrative, Gameplay, Rules.
Cases of Orchestration
(first embryos for full game generation)
A Rogue Dream

Data Adventures

Sonancia

Mechanic Miner

Parting Words
Creative Computers

- AI can help:
  - Speed up game development.
  - Allow for unexpected gameplay.
  - Design games that haven’t been possible so far.
Creative Computers

- How?
  - Use big data (semantic, open, simulated, gameplay)
  - Learn from designers.
  - Learn from itself.
Thank you!