Playing with “game”

Raph Koster
This is the world.
Well, no, it’s a dot.
It’s the dot that we put on the concept “world” to identify it - a “signifier” or “sign.”
World is in fact a very fuzzy concept.
When we look at it, we see that “world” is in fact a complex set of signs itself...
...each of which has its own fuzzy concept behind it.
Over here is one called “waffle”
There's a lot of concepts there, some more fuzzy than others.
Some of them seem to be tightly connected to one another

- Breakfast
- Belgian
- Uncertain
- yUMmMy
- Gridded
- Waffle
- Deadly gluten
We can see that we have actual waffles, we have the concept of wafflesness, we have the word waffle. A signifier, a meaning, and a sense.
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Worse of course, if I talk to you about waffles, I am kind of hoping that when I toss the word “waffle” at you, you happen to have the same relationships assigned.
We each have our mental models of what “the meaning of waffle” is.
That’s a lot of layers in between people, but even worse, in between making sense of what I said.
Like, making you waffles in the morning may have the meaning of “making waffles in the morning because it is an act of great love.”
It might also mean tossing a few Eggos in the toaster is all the affection I can muster.
This is making me hungry, so let’s stop talking about waffles.
Here’s one that we’re interested in!
What a freakin' mess.
Why bother?

There is a school of thought that says we can sidestep this whole thing and say instead that labels are completely arbitrary.

A game is something we play.

Games have family resemblance.

Something is a game when the creator says so.
There’s some evidence, though, that this works against our own biology.

Take a look at “color.”
There is one sense of color that has a very firm, mathematical basis.
And yet, we have also known for many years that humans see “seams” in this rainbow.
And in fact, human cultures all tend to put the seams in pretty much the same places.

Progression of colors added to languages, according to Berlin & Kay (1969)
Not only do we have an inbuilt bias towards ontologies, but there seem to be some predispositions towards certain ones.
This may have to do with the way in which our cognition works. We see complex systems in the world.

Like say, a cat. Cats are complex.
We generalize out generic cats from it.
In fact, this generalized notion of cat is what people tend to draw, the icon of cat, because it is very hard to actually see the world as it is...

In fact, we are highly situational: Fundamental Attribution Error, privilege reducing empathy, etc.
So, with games, the easiest thing might be to simply say “games are things we play.”

Except that I want to get better at making them. And some things we play are better than others.
We can run a sort of domain analysis on these things, and start to see games as particular sorts of networks of signs.
Ones where there exists possibility space.

5,478 different positions
255,168 possible games
They function as machines where the signifiers can be pushed into different shapes or permutations...
And the sense is actually the complete range of motion of the constituent parts.

5,478 different positions collapse to 765 with rotation and symmetry.

255,168 possible games collapse to just 26,830 games.

PSPACE-complete.
And the sense is actually the complete range of motion of the constituent parts.
As it happens, the play we find most fun tends to be with networks that fall into specific ranges of mathematical complexity.

“An NP-complete problem resembles a typical puzzle: is there some way to plug in values that solves the problem? Correspondingly, a PSPACE-complete problem resembles a game: is there some move I can make, such that for all moves my opponent might make, there will then be some move I can make to win? The question alternates existential and universal quantifiers. Not surprisingly, many puzzles turn out to be NP-complete, and many games turn out to be PSPACE-complete.”

--Wikipedia on PSPACE-complete
If we have a system of signs with particular relationships that cannot experience in full...
Because the “play” within the system is larger than our current ability to understand

I suck at this game
...we arrive at some heuristics for coping with how it works, for when we want to interact with it.
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Oh, I get it!

Of course, if we fail to perceive the relationships, we’ll fail to build our icons of sense, and have a lousy experience.
Now, some of these networks of signs occur spontaneously in the “world” (whatever THAT is)…
But here I am more concerned with those that are designed artifacts.
There are things here that are not “formally” games.

A ball is a toy. Catch is a game with a ball and the physics ruleset.

This includes many of life’s systems.
There are many ways to intentionally arrange signs into networks of relationships in order to convey a sense.
For clarity’s sake, I want to point out that we should treat simplicity and elegance as different things.

The hero slew the dragon and saved the kingdom.

A simple story, or game, is one where we have a simple sense; the play is limited.
An elegant story is one where we have few signs. It might have a sense BIGGER than a complicated system with many signs.

For sale: baby shoes. Never worn.

The same is true for games.
Another way to think of it is that we decompose a system into a set of understandings, what we might call a choice architecture.
This story, we break into a rather linear sense. Stepmothers are evil, yo. Revenge is bad. This is a simple story.

The hero slew the dragon and saved the kingdom.
You could have a story where can’t really make out any relationships at all. This leaves what is in theory an infinite space... but in practice it means that for most people, the sense created, the icon, will simply be blank.
We start talking about the space in between, and that’s where we find **interpretability**.
In stories, this happens because of signs that have more than one meaning. Art is ambiguity, and the choice architecture is about the play between the senses of those meanings, e.g., metaphor, symbolism, etc.

The sound of a woman chopping onions and crying
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- A child’s doll, torn in half
- The pills, in case of hearing voices
- An empty rocking chair
- Oh God, the waffle...
- His car, not in the driveway
In games, we see this happening when the choice architecture is created via a sense of consequential choice.
Play is space, in other words. It is “placeness.”
Now, I don’t mean to discount the simple in favor of the elegant.

There is a great power in the simple. It inculcates. We use the simple for training, entrainment, acculturation.
By conceptually denying “play” in a concept, they effectively tell you how to behave.
This is a tool that can be used for good or for ill... the space between the classic sense of fable, and the classic meaning of propaganda, is minimal
This is a tool that can be used for good or for ill... the space between the classic sense of fable, and the classic meaning of propaganda, is minimal.
So we now have the sense a space, a vague boundary around systems with play... an axis of much play to little play, and an axis of agency in the system...
If we’re willing to use ontologies for a sec, we can quit being all theoretical and start to ask craft questions; namely, if our intent is to work within a given area here, what are the techniques, the tricks, the tips?
Agency is defined by the number of verbs, of inputs.
Agency is defined by the number of verbs, of inputs.

- Some claim games have no agency
  - But if we make this claim, we claim we have none anywhere
  - The difference between physics and Tetris is scope, not nature
Play is defined by the range of possible answers.
Play is defined by the range of possible answers.

- The difference between Tetris and the weather is...
- Analogous to the difference between Hamlet and a kids’ story
- Fluid vs crystallized intelligence
The first is, know what you are making.

Low agency
High play

Low agency
Low play

High agency
High play

High agency
Low play
The first is, know what you are making.
These are marketing categories too.

- **Art game**: Photopia, Dear Esther
- **Story game**: Wii Orchestra
- **Kids’ game**: CYOA
- **Arcade game**: GTA, Wii Sports, Candy Crush
- **Sandbox**: Sandbox MMO, GTA
- **Immersive game**: Dishonored, Minecraft
- **Call of Duty**: Call of Duty
- **Super Mario Bros.**: Super Mario Bros.
A high agency environment with little interpretability is an impositional game, an immersive one, a coercive one.

- Photopia
- Journey
- Dear Esther
- Dishonored
- Minecraft
- "An experience."
- GTA
- Call of Duty
- Wii Sports
- Super Mario Bros.
- Candy Crush
- Wii Orchestra
- CYOA
- Sandbox MMO
What works for what.

Empathy

Intuition

Acculturation

Entrainment
Tools for low agency and low play

- Empathy
- Intuition
- Acculturation
- Entrainment
Rhetorical repetition

- Actual anaphora
- Repeated story elements
  - Self-similar plot structures
- Mechanically forced repetition
  - Stuff like game replay for achievements
  - A map you run over again and again
  - The use of repetitive action in *Howling Dogs* or *Cart Life*
Terminology and frames

- Apophesis and paralipsis
- Bringing up the opposing viewpoints just in order to dismiss them.
- The use of labelling in order to cause groups or ideas to be narrowed down and stereotyped
The empathy exploit

- The imposition of a worldview by making a sympathetic protagonist whose actions always follow a given agenda’s code
  - We see this a lot in action movies, where the hero does all sorts of horrendous things and we cheer for him
  - 1st person action games do the same

- The key tactic here is to make the teacher/character seem similar to the player. We are deeply vulnerable to people we see as similar to ourselves.
  - See also ethopoeia.
• Gone Home
Othering

- Casting a group as “not of my tribe,” usually through labels that in some way deny their humanity
  - This is how fantasy MMOs invoke colonialism, usually unawares

- Very widely used within games!
  - Female characters
  - Non-human enemies
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High causality

- When causality is made explicit, that inculcates the notion that the cause this time may be the SOLE reason why a given thing could happen
  - Linear narratives
  - False choices in narratives

- You can do this in higher agency games still; just have the dynamics of the system point towards a given outcome.
  - This was the political critique of SimCity’s liberal bias
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Tools for high agency and low play

- Empathy
- Intuition
- Acculturation
- Entrainment
Stagecraft

- As opposed to simulation.

- Control all aspects of the player’s experience
  - Plan out every surprise

- Create faked moments, cutscenes, preplanned trigger reactions
String of pearls

- False choice narratives where you push the player through a plotline
  - Moments of gameplay come in chapters, but always funnel towards structural chokepoints or simple branches

- Widely used in the AAA shooter genres
Iteration and repetition for entrainment

- Common in military sims, all reflex-based gaming...
- Also a bedrock technique in tutorials
  - “Make them do it three times” scaffolding
Reflex-based play

- Physical entrainment is achieved through rote action
- Mental entrainment can be done the same way, particularly if rapid reaction times are pushed on the player
- Bullet hell shooters!
Limited verbs, e.g. selective agency

• The act of verb selection and inclusion in your game is an implicit rhetorical argument.

• Very in vogue right now
  • GTA torture scene
  • Dys4ia
  • No Russians
• Princesses to rescue

• This the collapse of content “with play” down into something that does not have play at all, that is merely a token.
  • Reinforces stereotypes
  • Narrows the possible perception of the subject via erasure, because game tokens typically have little variability

Tokens as signs, e.g. tropes
Tools for low agency and high play

Empathy

Intuition

Acculturation

Entrainment
Loose symbolic relationships

- Leads to high contingency
  - Meaning, it creates situations where you cannot “read” a situation cleanly as one thing or another

- Classic use of metaphor
  - John Gardner has a lovely bit in *The Art of Fiction* on how to use layered symbology to cause “echoes”
  - Walking on glass in *Die Hard*
Layered symbols: signs with many senses

- Signs that reference multiple things
  - The cake in Portal
  - The princess in Braid

- Underutilized in games, I think
  - In books and films, we see it often
Instability of signs: e.g., ambiguity of reference

- Where your reference points won’t stay still; they change in meaning, or may even turn into an alternate version of themselves.
- The journey in Journey
- Pretty much everything in the storyline in Braid
- Today I Die
Anacoenosis

- Asking the audience for their opinion.
- A lot of books do this outright, especially on the literary side: break the wall.
- You also see books written in 2nd person (“You…”)

- Entering multiple viewpoint characters can do the same, if they are round characters…
Acausality, antinome

- Avoiding direct causal links is a great way to present a more ambiguous world.
  - Multiple possible causes
  - Impossible causes
  - Events that are not explained, but which are left open

- Alternatively, counterintuitive causality can serve to disrupt a worldview
  - Antinome is where two arguments are offered and both are valid, forcing cognitive dissonance
The rules of Mornington Crescent

- The game consists of each panellist in turn announcing a landmark or street, most often a tube station on the London Underground system.
- The apparent aim is to be the first to announce "Mornington Crescent", a station on the Northern Line.
- Interspersed with the turns is humorous discussion amongst the panellists and host regarding the rules and legality of each move, as well as the strategy the panellists are using.
- Despite appearances, however, there are no rules to the game, and both the naming of stations and the specification of "rules" are based on stream-of-consciousness association and improvisation.
- Thus the game is intentionally incomprehensible.

-- Wikipedia
Tools for high agency and high play

- Empathy
- Intuition
- Acculturation
- Entrainment
NP problems

• In a mathematical sense, humans tackle these via intuitive heuristics
  • This means they always think that they can find a better answer...

• There are handy lists of these types of problems online – just find some, and start designing games with these as mechanics!
Multiplayer

- Players, particularly of different types and backgrounds, are a great source of “space” both on the agency and on the play side
  - If combined with varying roles, even more so

- Psychology itself, as an “imported ruleset,” offers a lot of play.
  - Watch out of course for bad actors...
Orthogonality

- Embed multiple game systems within one game space
  - They don’t even have to touch one another very much
  - Great example: Will Wright’s hypothetical game in the first Game Design Challenge
  - Common in MMOs
Simulations can lead to emergence
  • And emergence means a system has play, obviously

Doesn’t mean just sim-world, but also using underlying sim-style elements, such as abstracted properties, behind elements of your game
  • Open permutation space
Simulation, esp with dynamic systems
Signs as tokens

- Use non-quantifiable things as the tokens in the game
  - Dixit uses stories
  - The entire genre of RPGs makes use of collaborative storytelling this way
Now, I want to emphasize that this is merely my current heuristic!

If you recall, this referent “game” was a complex system... it has a lot of play in it.
In fact, playing with game is my favorite game...

It’s a lot more fun if we all play together.
In fact, playing with game is my favorite game...

It’s a lot more fun if we all play together. And in the morning, we can go have waffles.
Some references

- The intro is basically semiotics. That said, it also partakes a little bit of reader-response theory; see “Playing with ‘game’” on my blog at http://www.raphkoster.com/2013/04/16/playing-with-game/ for a larger elaboration of the idea that ludic systems exist wild in the world
- John Gardner, The Art of Fiction, and many other books on writing can help you on the side of adding depth via symbolic “play”
- Fluid and crystallized intelligence: http://en.wikipedia.org/wiki/Fluid_and_crystallized_intelligence
- For more on sneaky stuff used for it, see Influence: The Psychology of Persuasion by Cialdini
- For more on choice architectures, I wrote up http://www.raphkoster.com/2013/04/24/on-choice-architectures/
- Highly recommend Matt Worch’s talk on print vs oral culture as a good lens into the gap between high and low agency approaches. http://www.worch.com/2013/04/24/talking-to-the-player-how-cultural-currents-shape-and-level-design/
- A recipe for waffles can be found at http://allrecipes.com/recipe/waffles-i/