

GAME UX SUMMIT '17

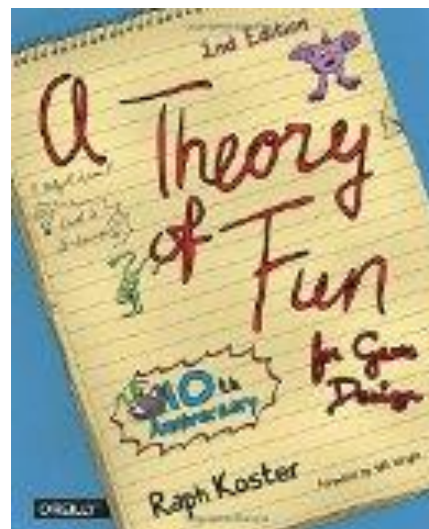
(Dis)Assembling Experience

Raph Koster

Game Designer, Altered Tuning

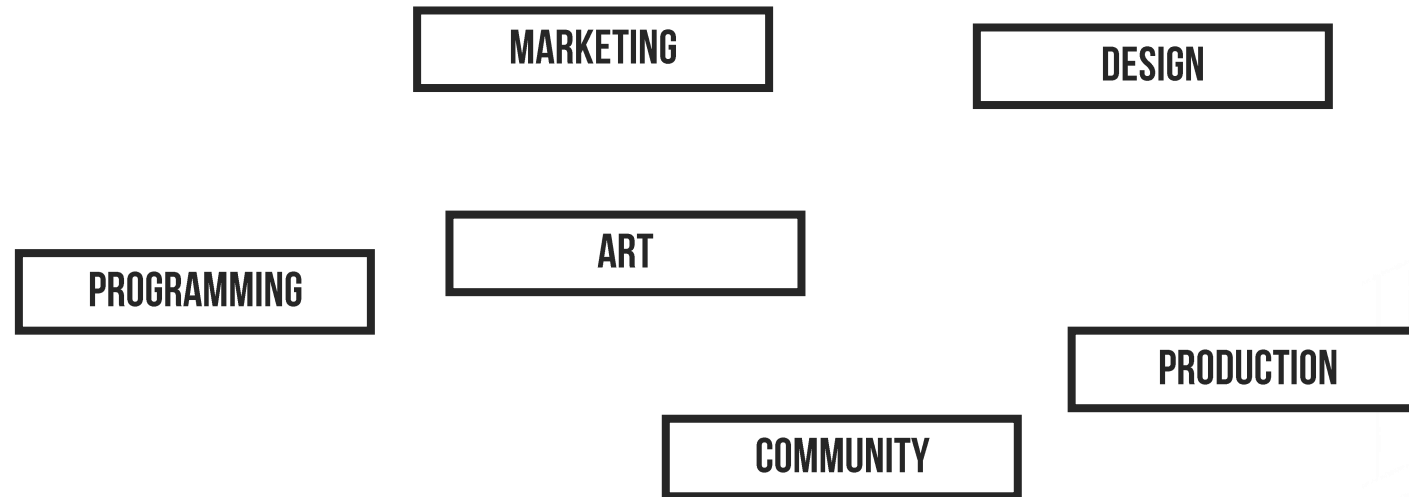
#GAMEUXSUMMIT '17 / TORONTO

Me



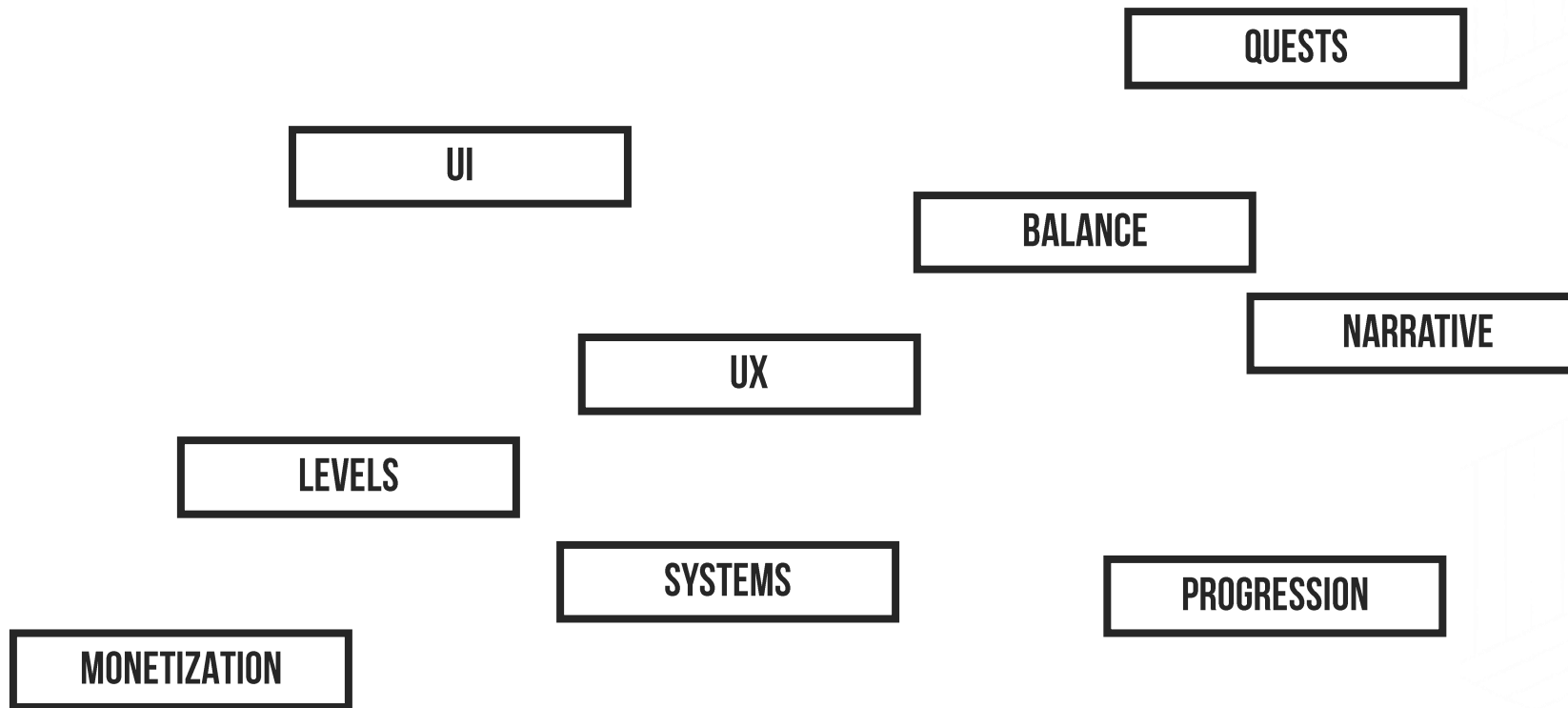
UX is a hat

- I like to say there are a lot of hats on a team.



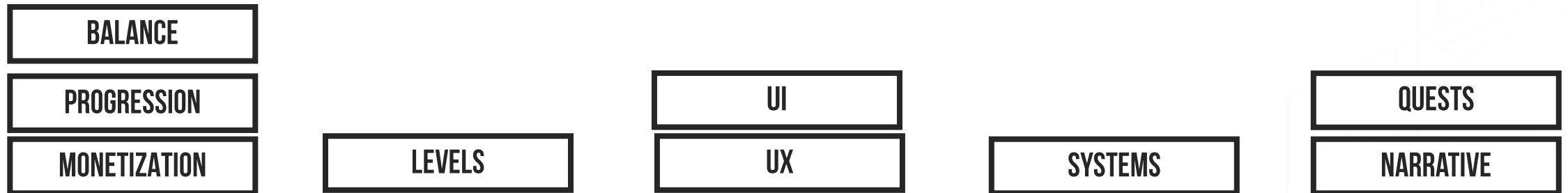
UX is a hat

- Even design hats.



UX is a hat

- And sometimes they are split up differently.



Who wears what hat?

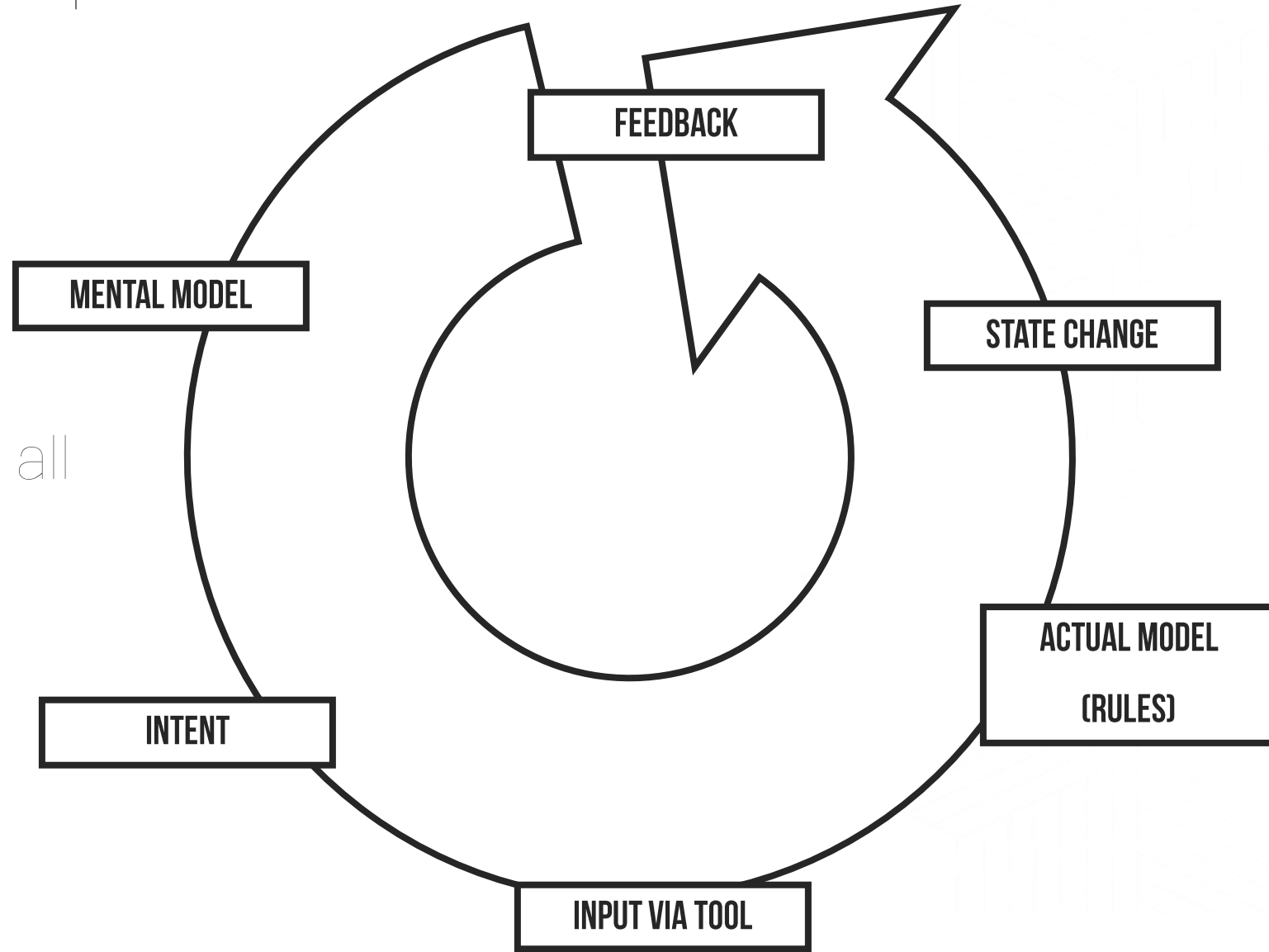
- It's easy to get resentful over who owns what.
- There is a lot of confusion over what UX means
- And what game design means, for that matter

Commonalities

- And why not? They have a lot in common.
 - A problem is presented
 - The user has to figure it out
 - Then has to decide what to do about it
 - Then has to actually execute some actions
 - And hopefully get a response

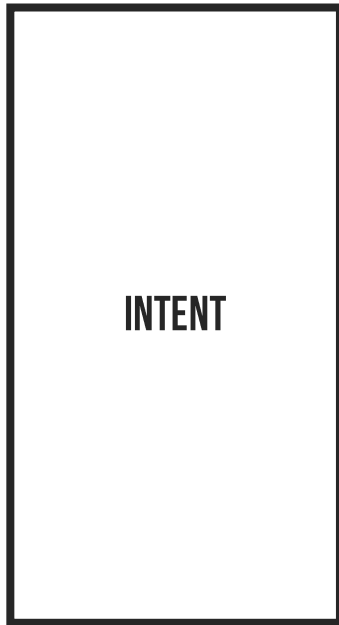
A standard loop

- Look at a standard loop, we all know this one.



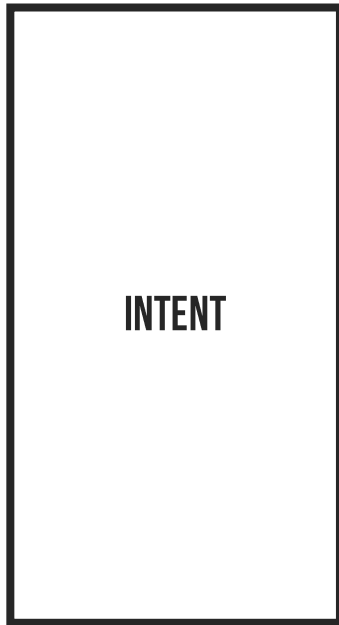
Adding detail

- But it's really not detailed enough. Let's break this down a bit.



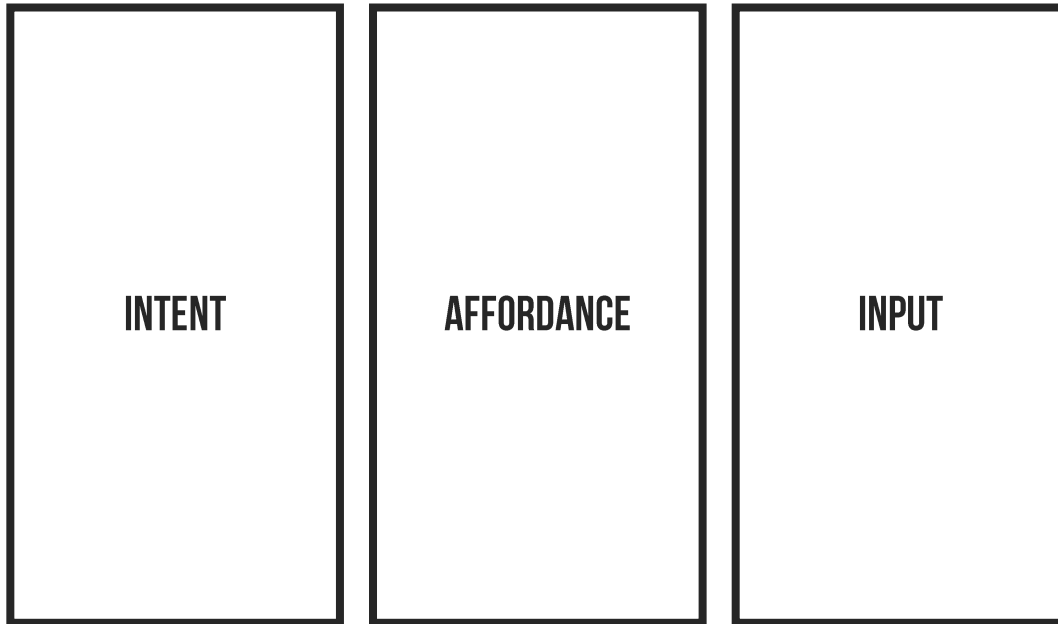
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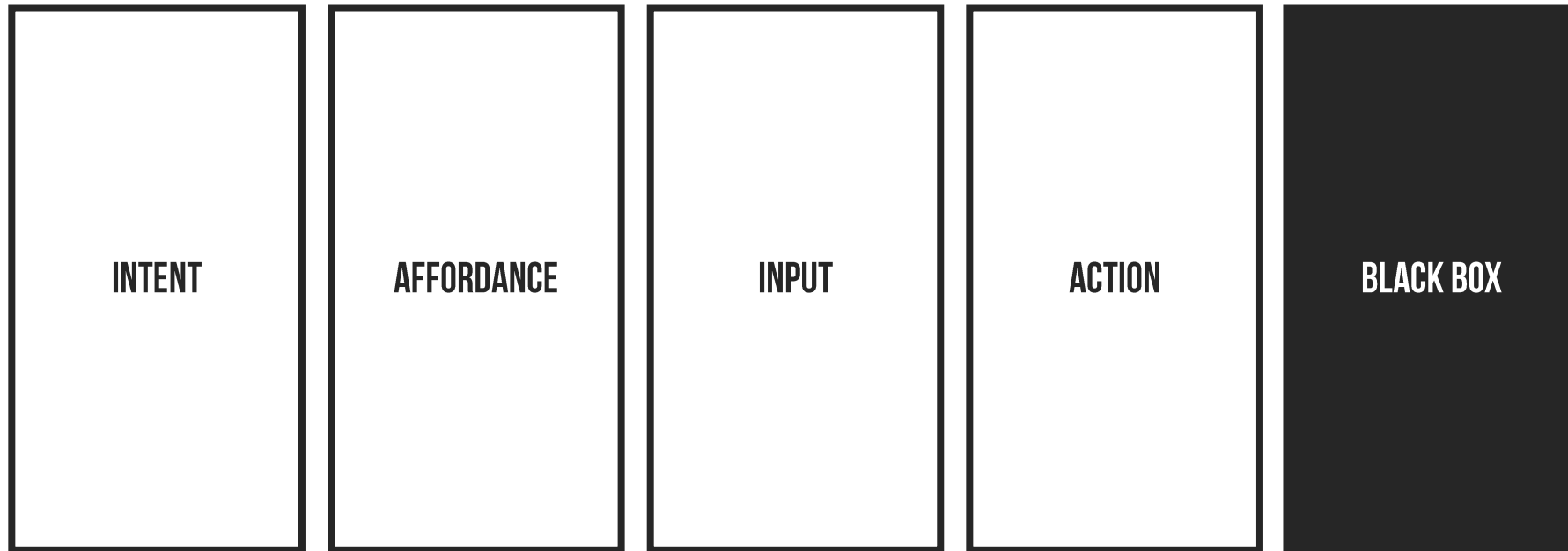
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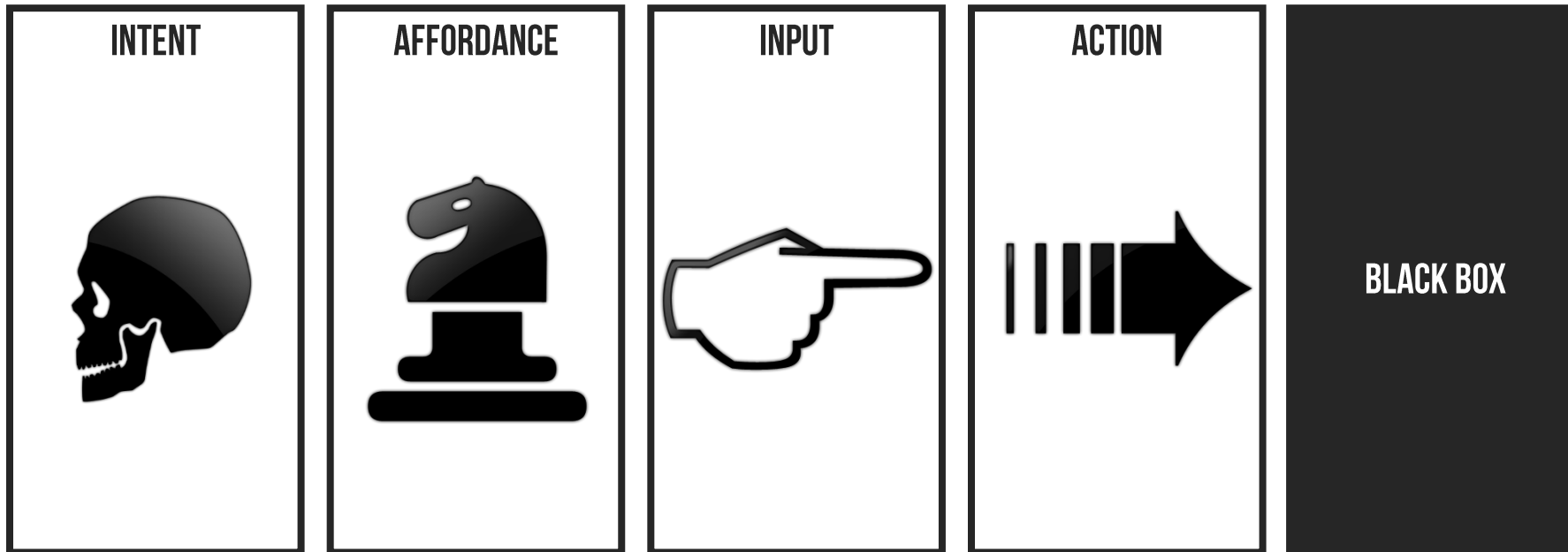
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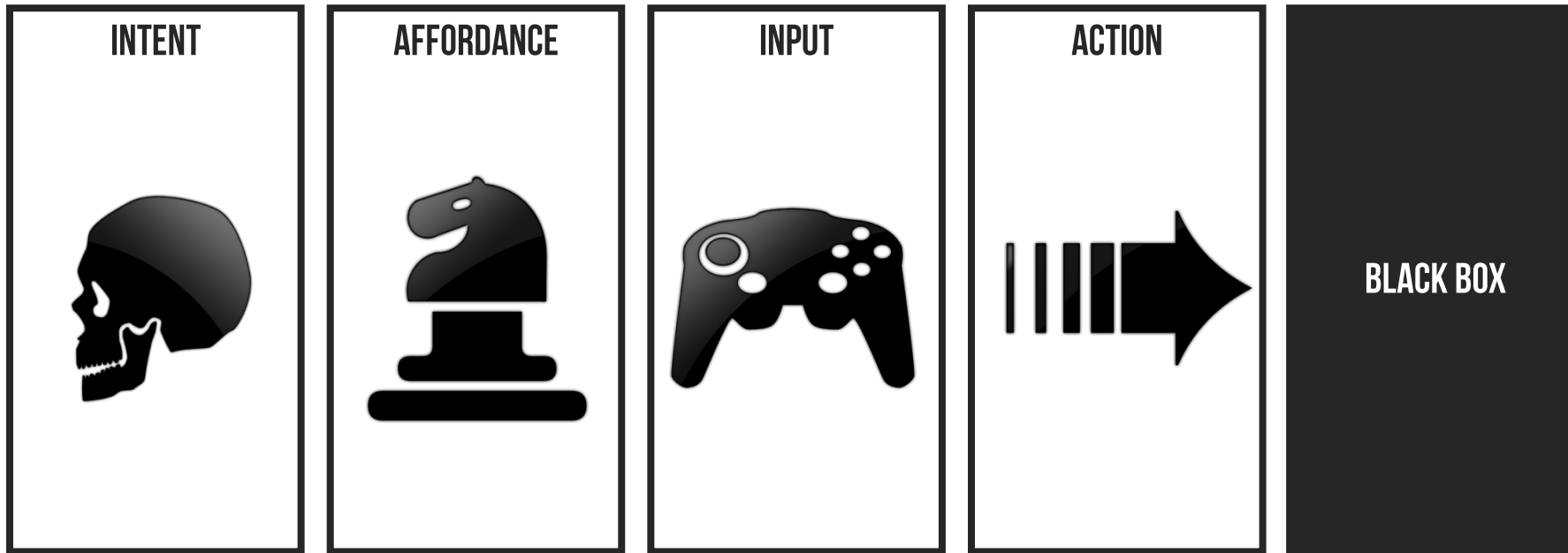
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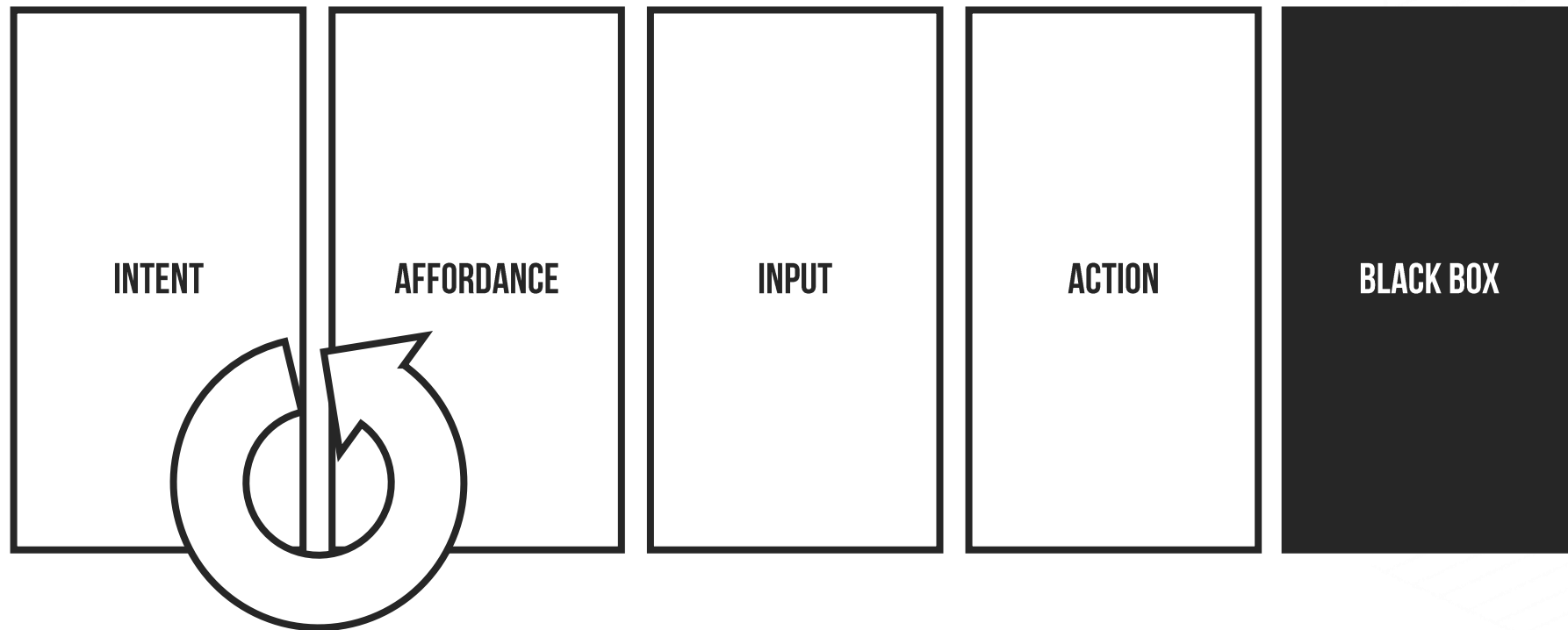


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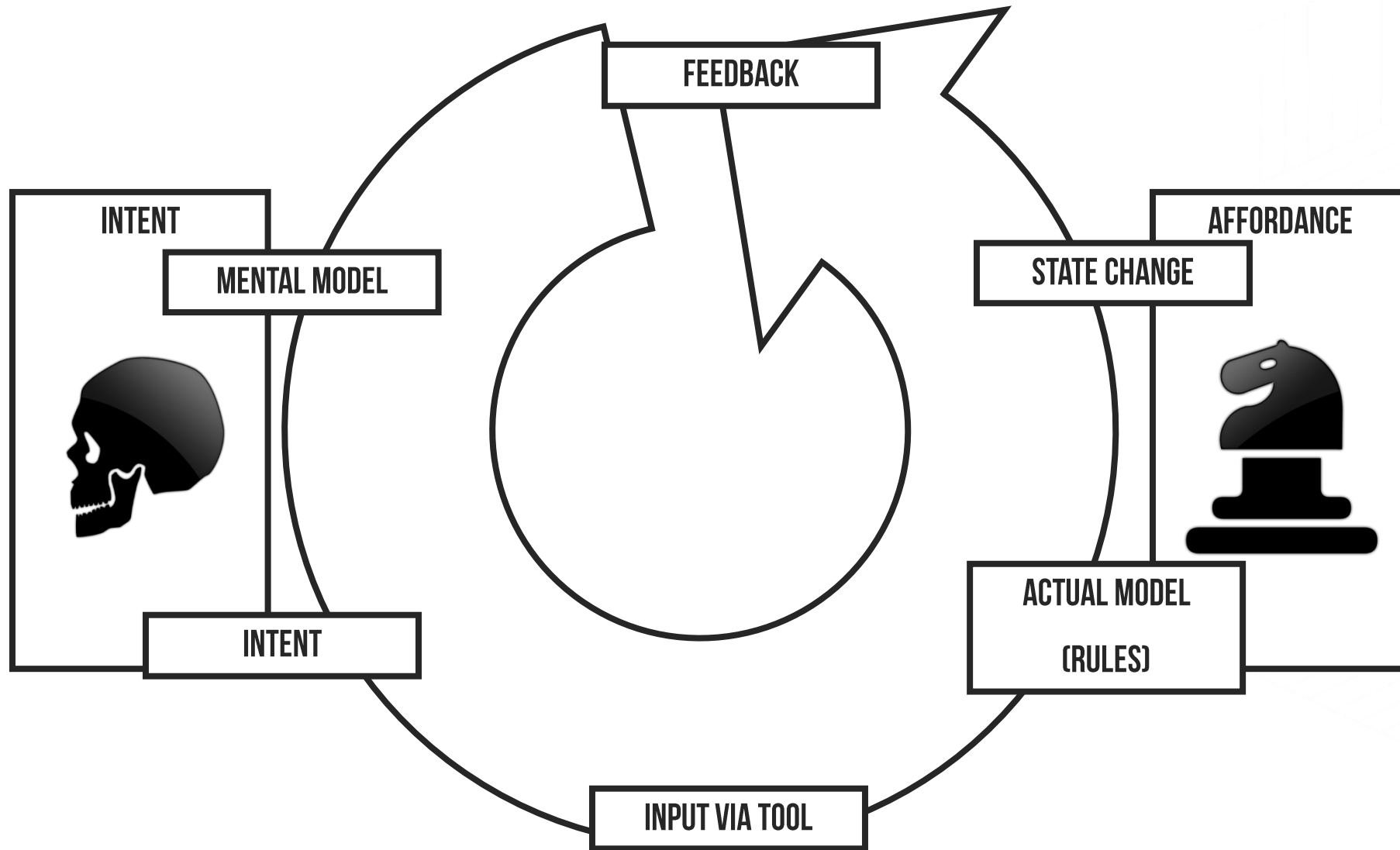
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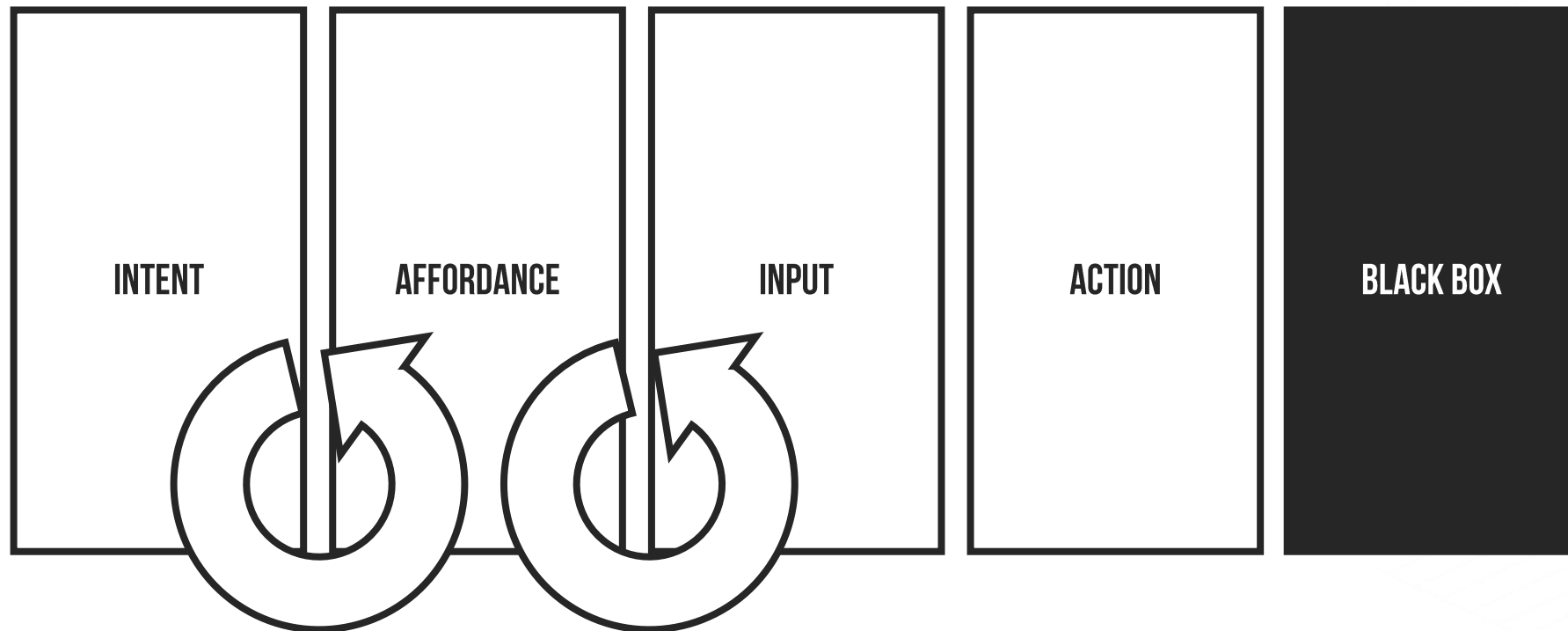
Each of these is its own "game"



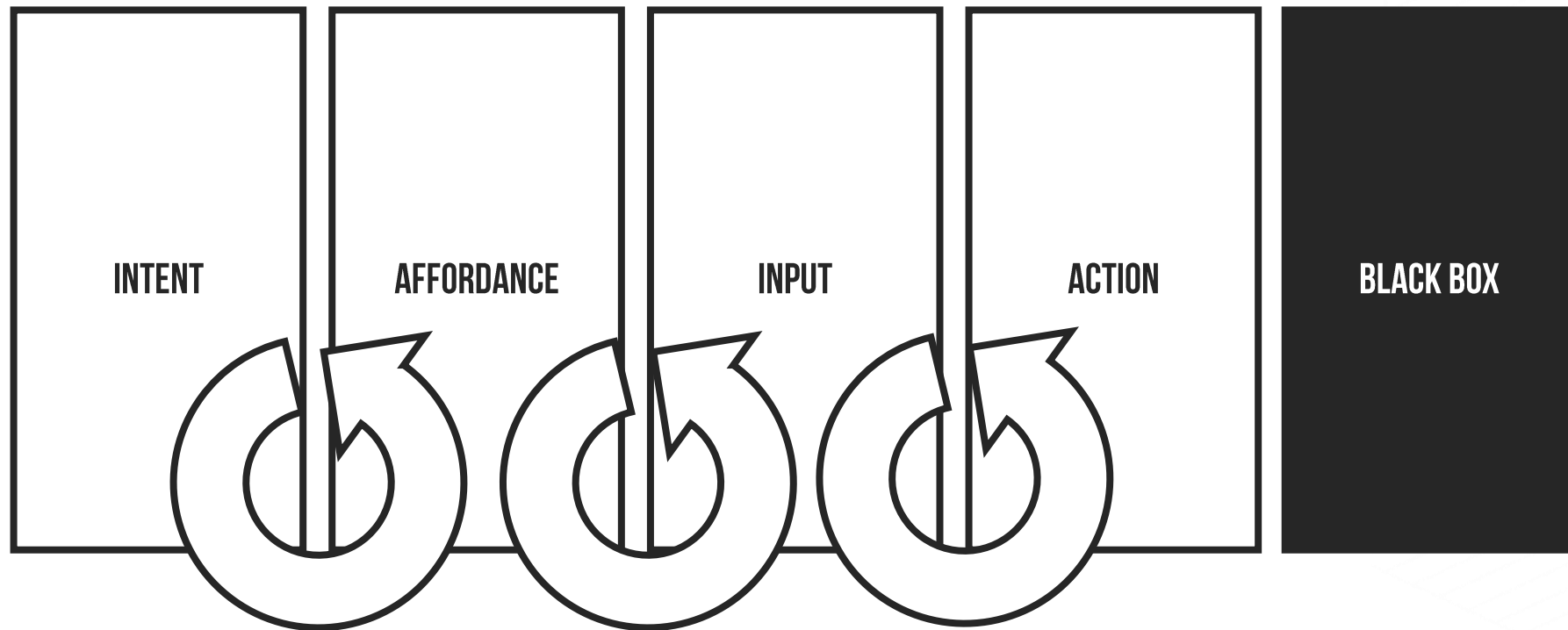
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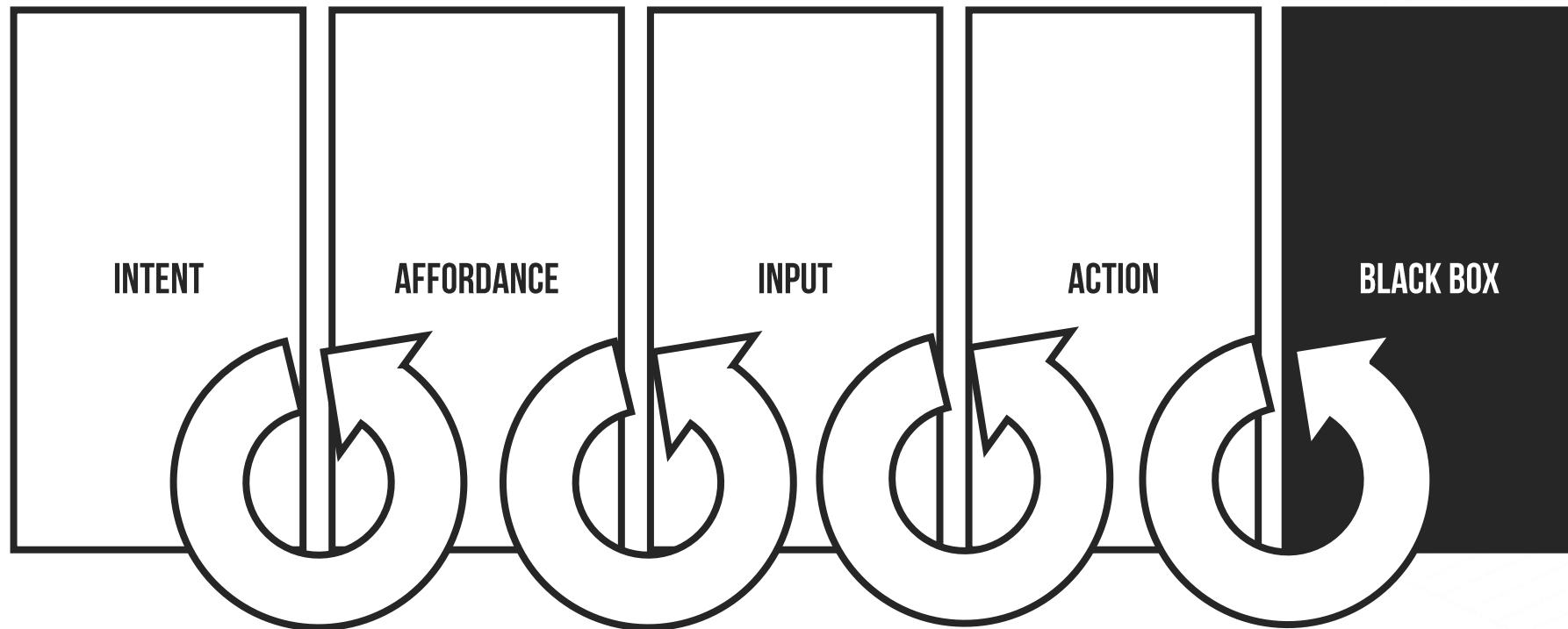
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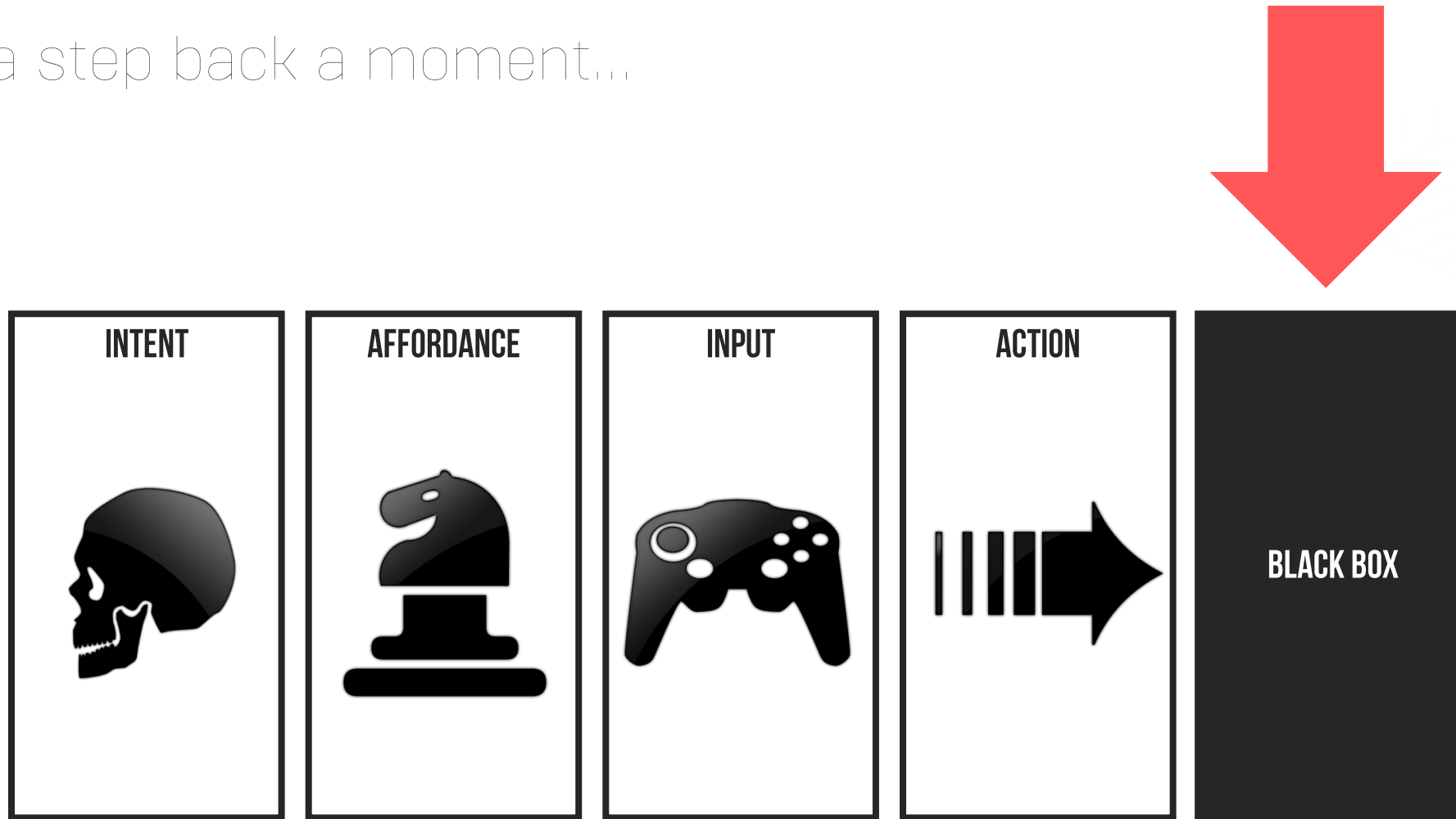


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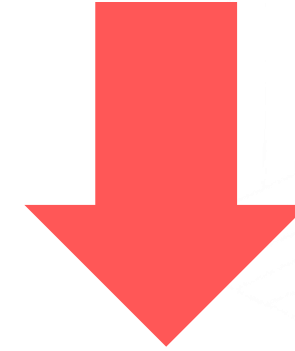
Game (system) design

- Taking a step back a moment...



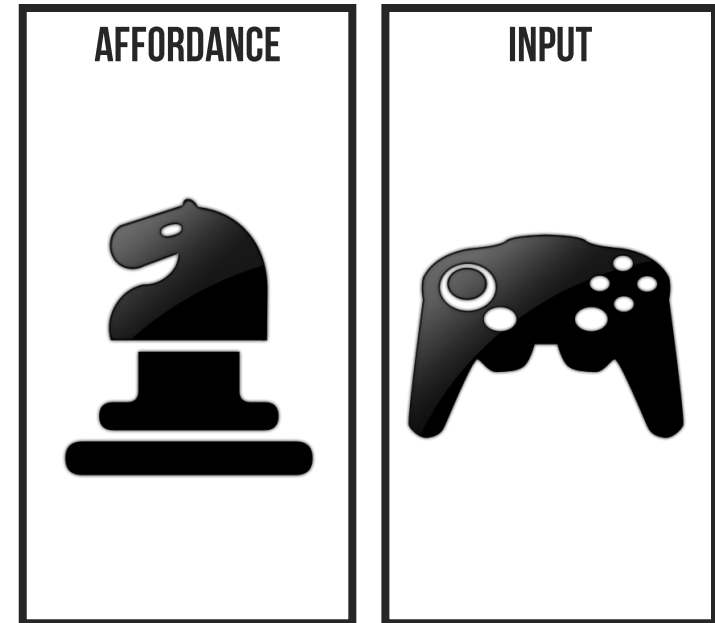
What goes in black boxes?

- Complex problems
 - PSPACE-Complete problems
 - Power projection
 - Territory
 - Curve projection
 - Resource management
 - Easier problems, for younger ages
- Social problems
 - Trust
 - Hierarchy
 - Mentorship
- Physical mastery problems
 - Oxygenation
 - Autonomic responses
- Chance



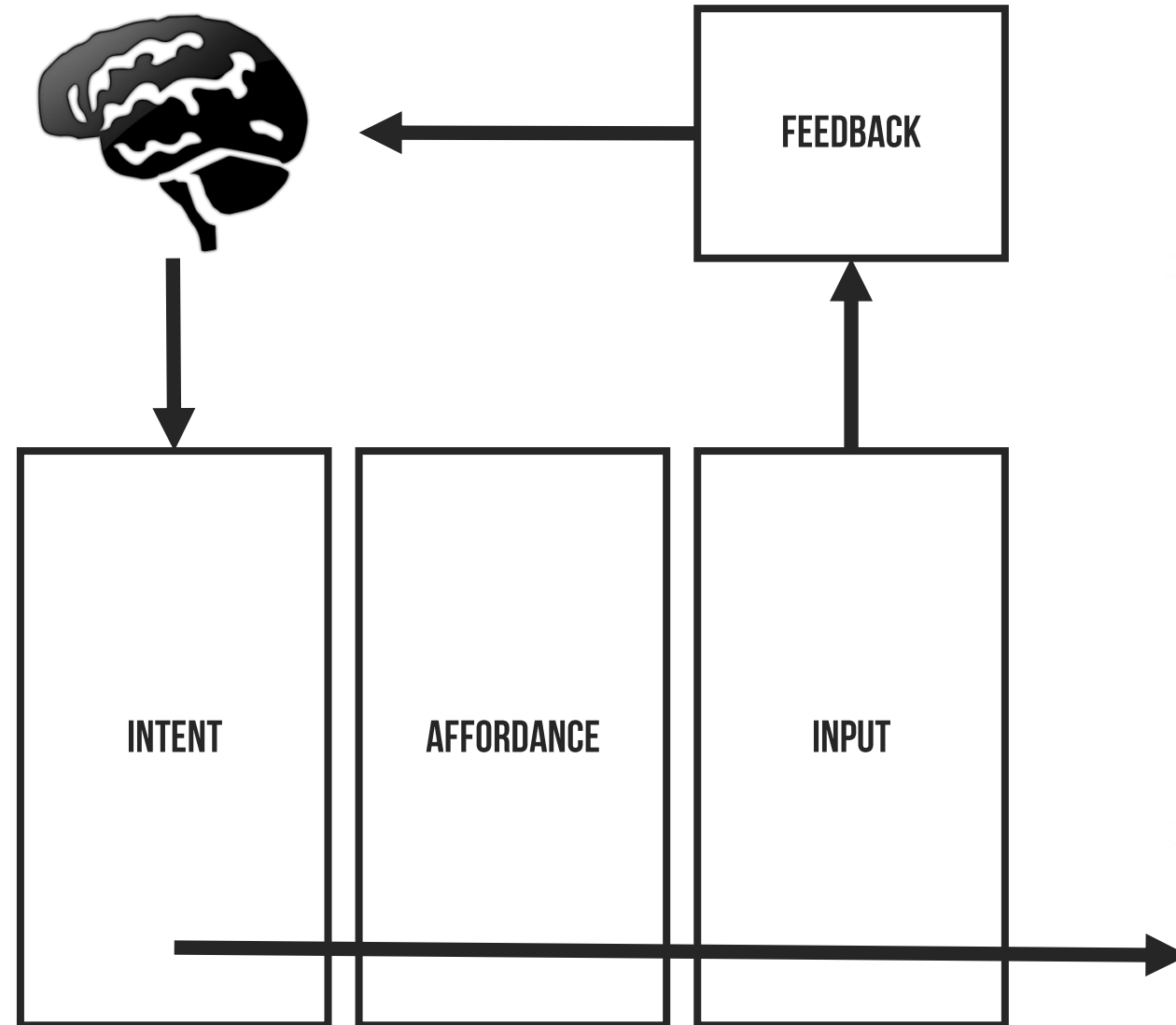
UI Design

- UI design is usually about transparency instead... the opposite of black boxes.
- But there is crossover here to the domain of UX designers.



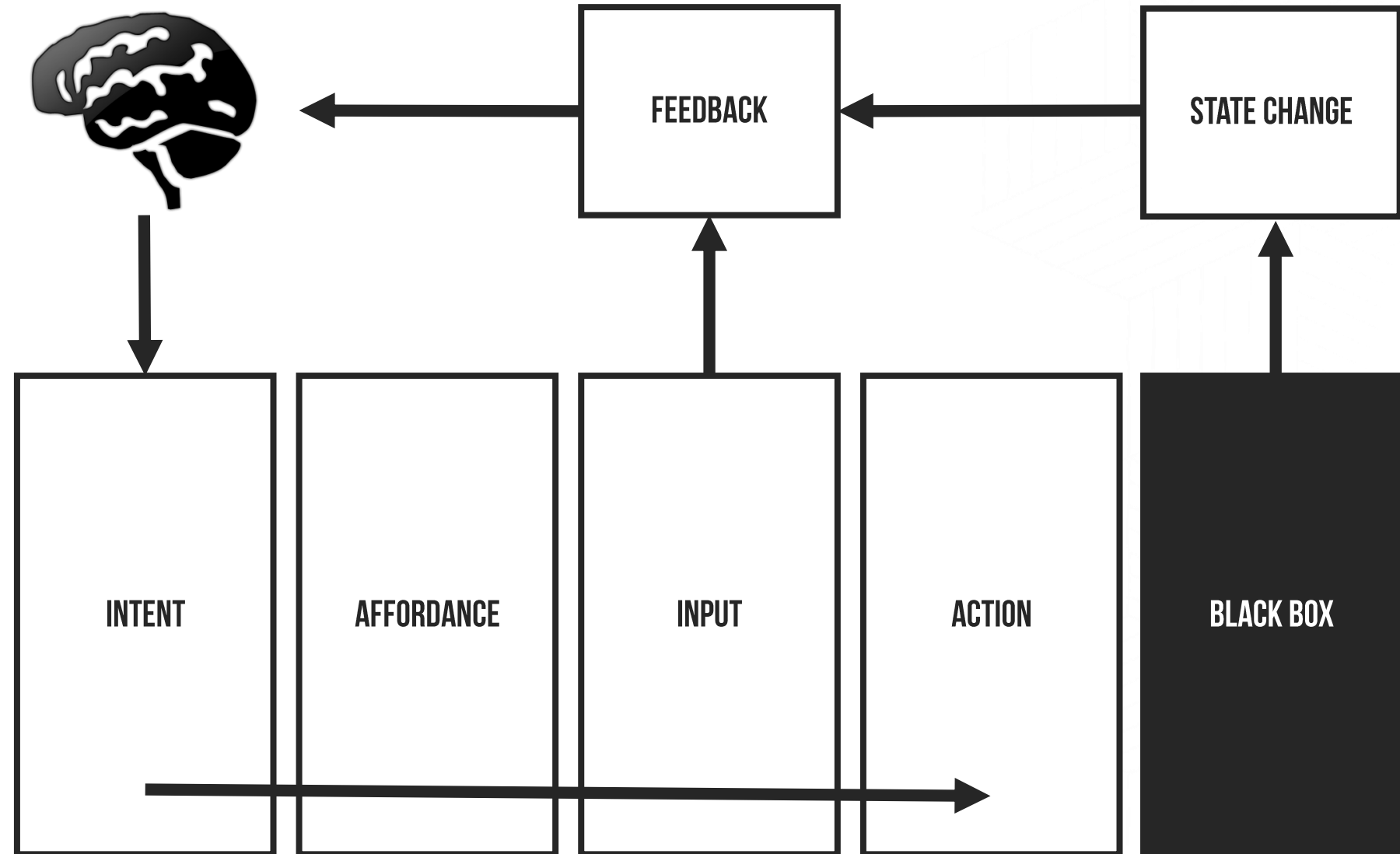
UI crossing into UX Design

- Instead, consider each UI as its own little game... its own loop.
- "Every button is a game."



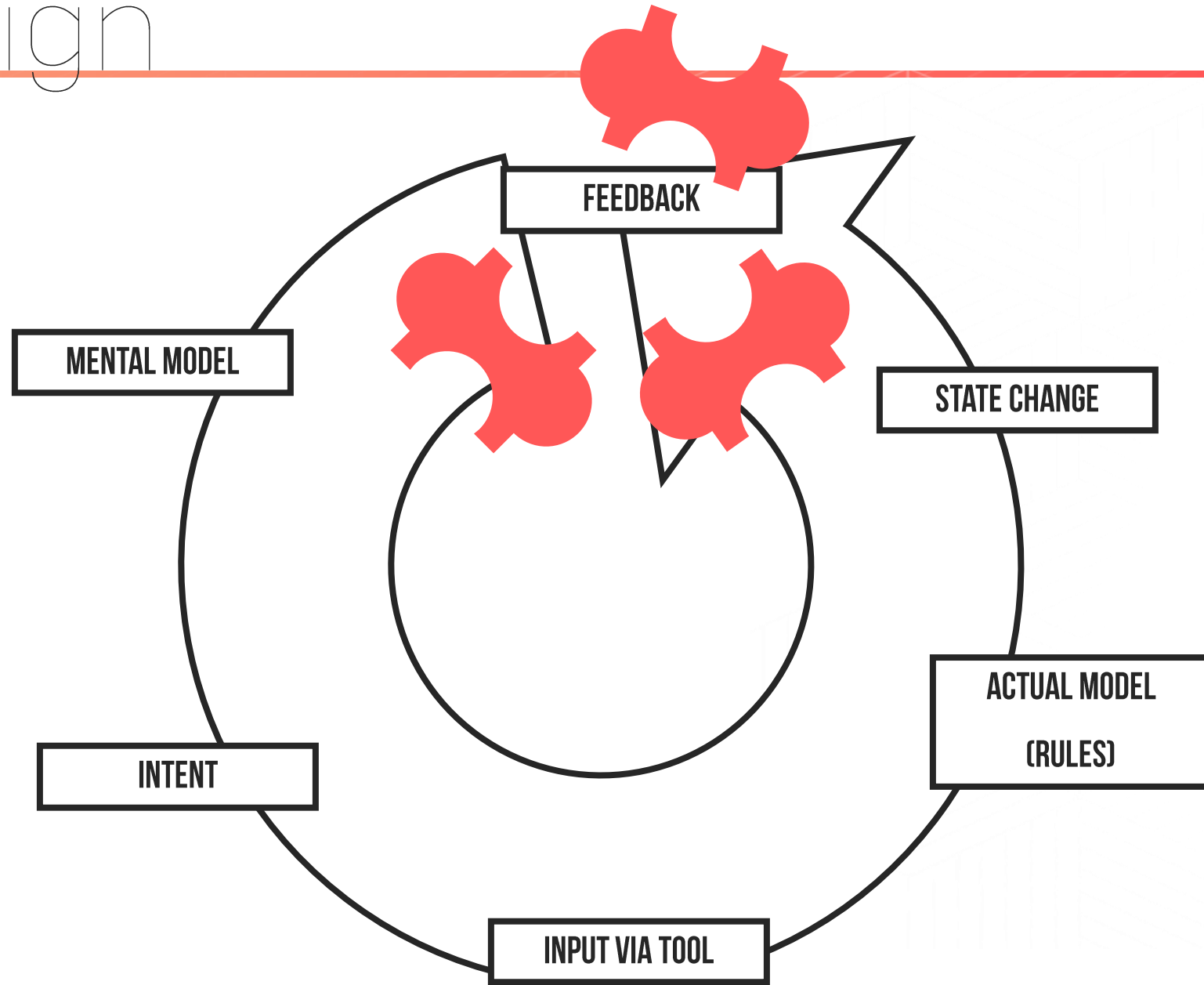
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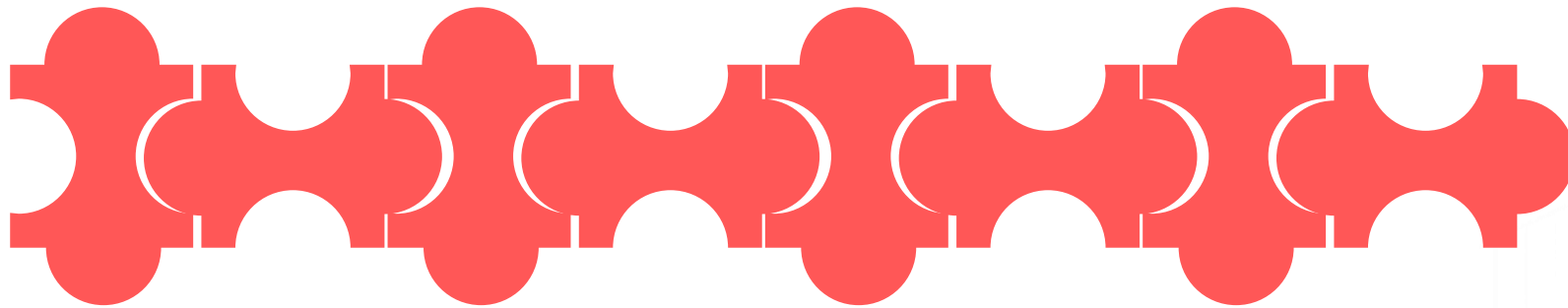
Narrative design

- It is sort of like black boxes too.
As feedback comes back, it is often wrapped in symbols.



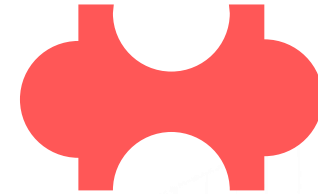
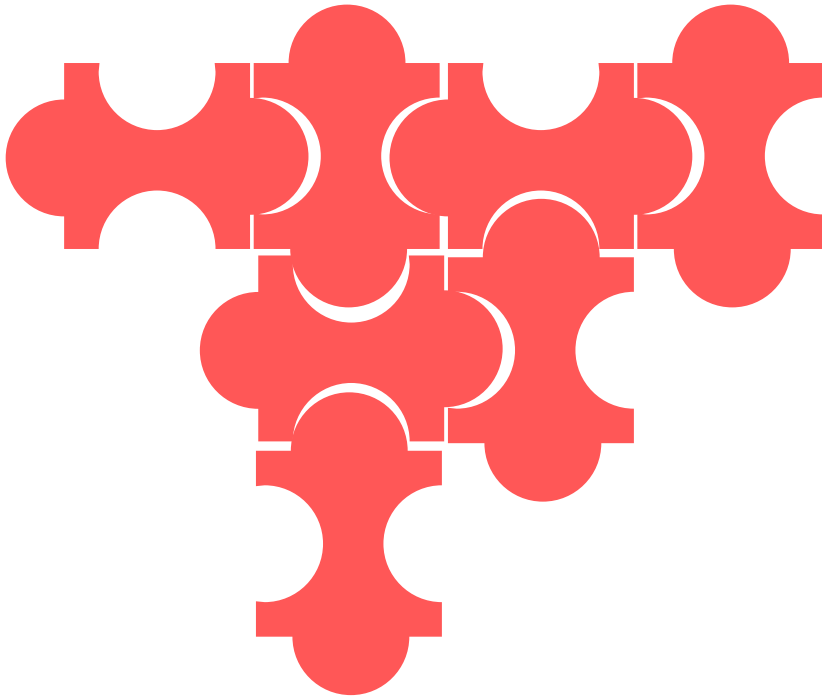
Narrative design

- We normally encounter these in order, though not always



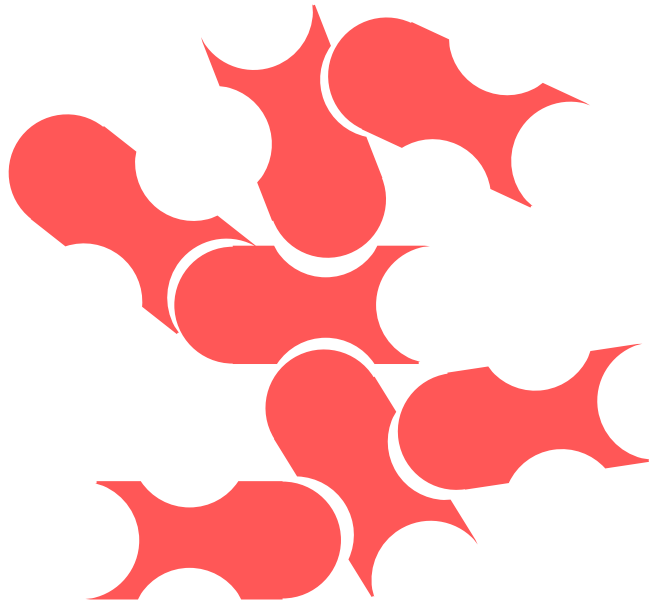
Narrative design

These symbols form their own game or puzzle, their own thing with “play” to them.



Narrative design

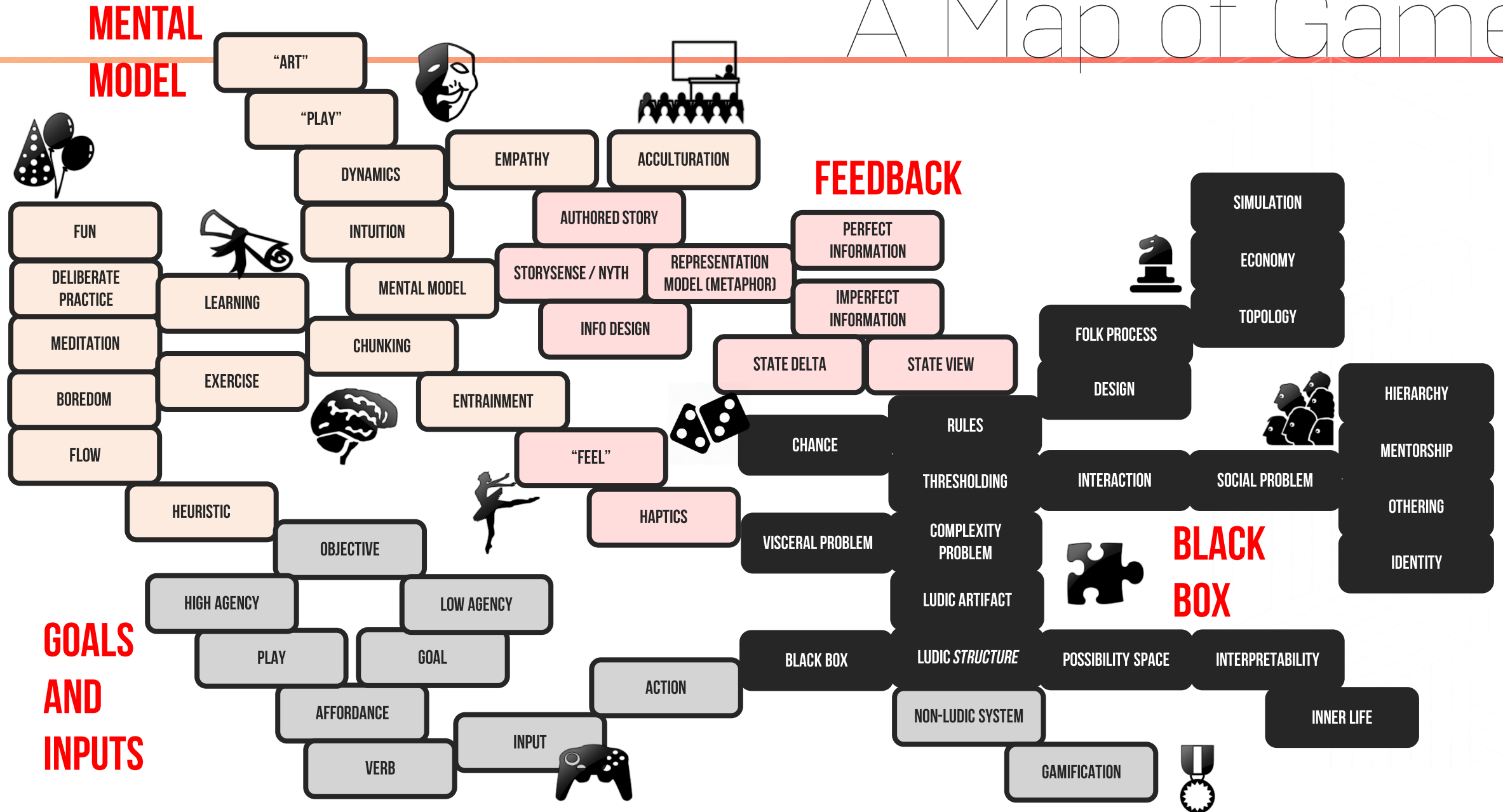
Assembling these mentally is another game, and puzzle pieces that fit together in many ways provide interpretability – aka *art*.

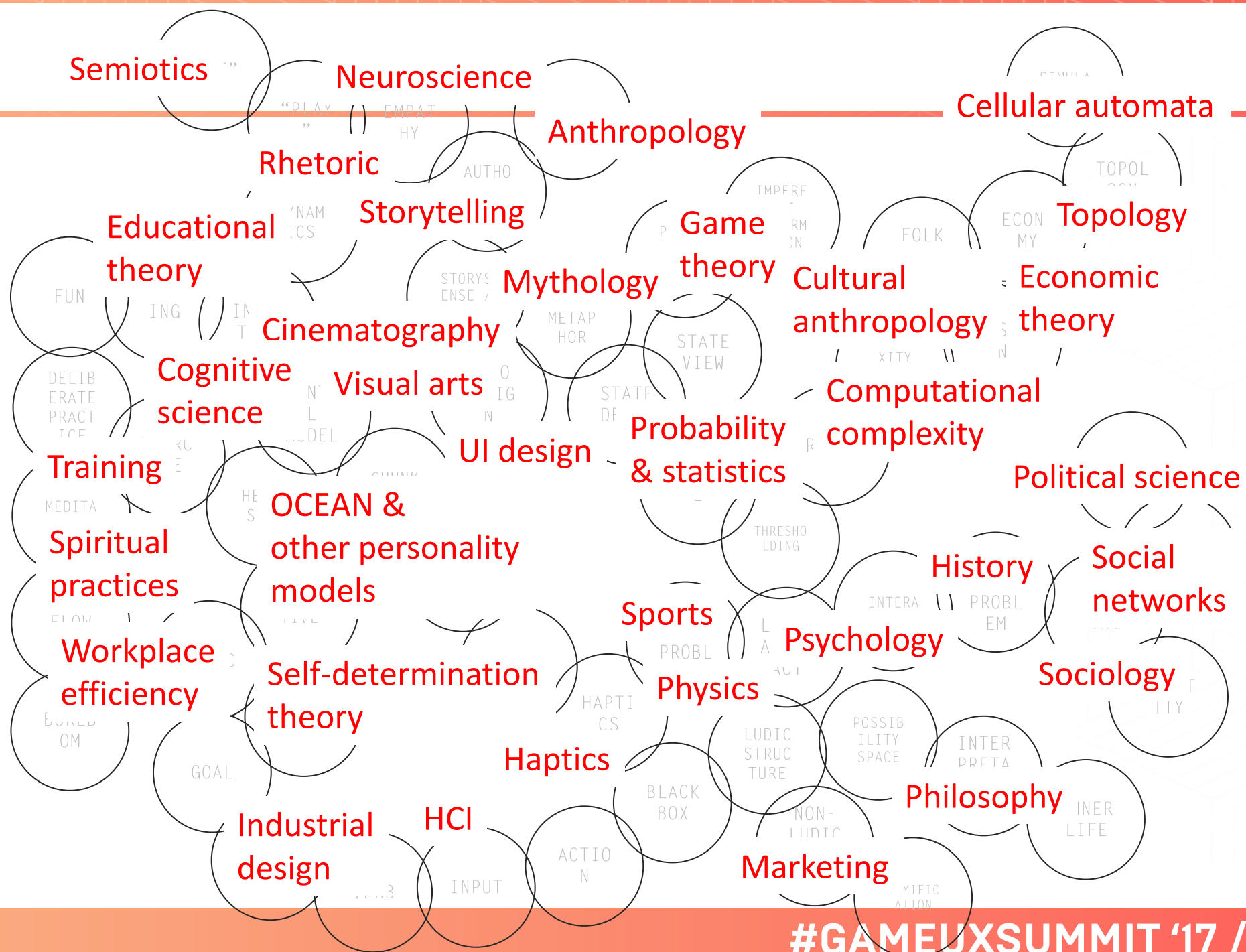


So where does UX sit?

There are a lot of ways to define experience.

A Map of Game



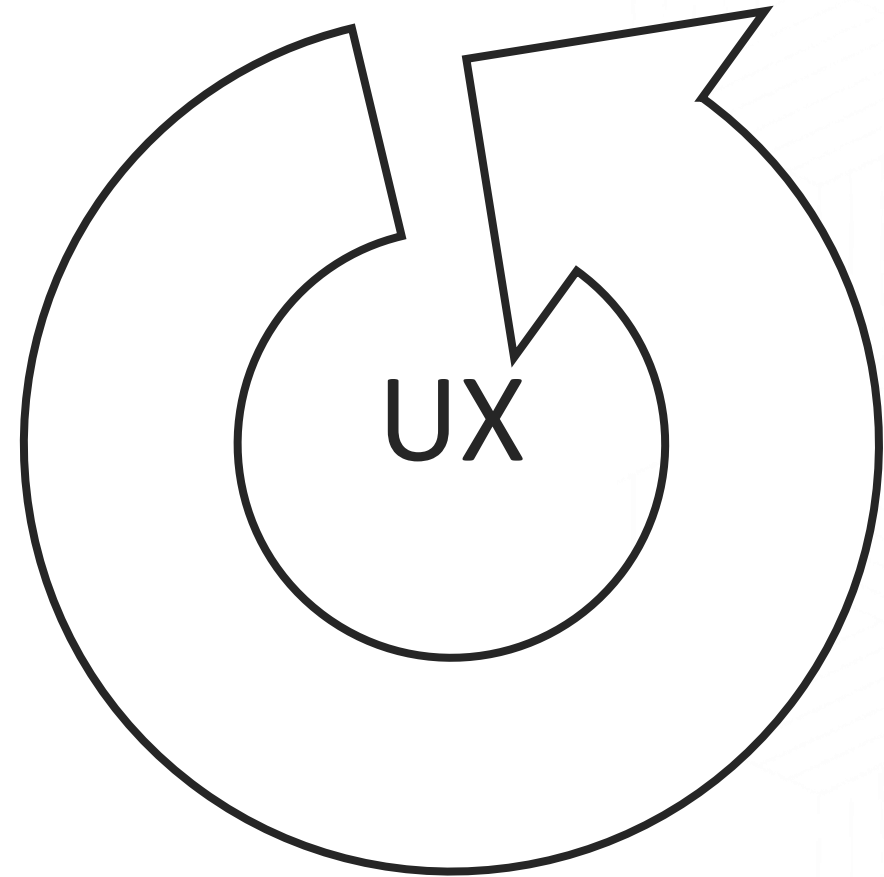


So where does UX sit?

- There are also experiences players seek which aren't even the ones that we designed
 - Meditation
 - Comfort
 - Practice
 - Speedruns
 - Mods or hacks or glitch play

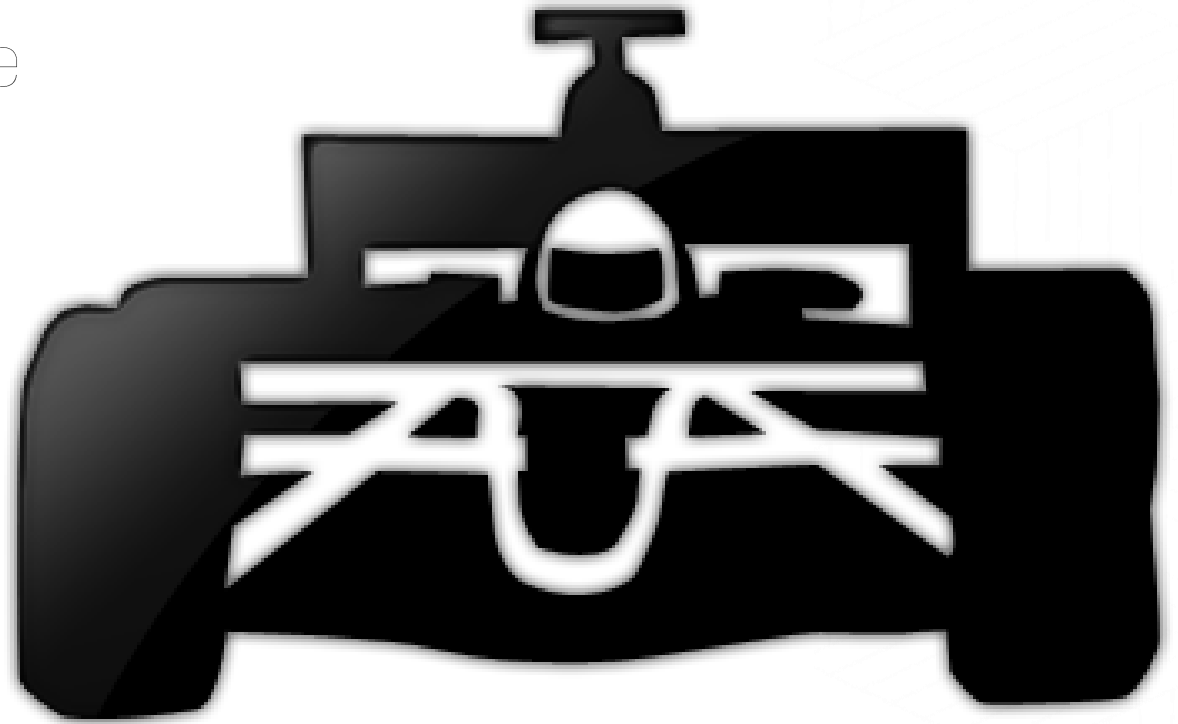
So where does UX sit?

- The job of UX is to make sure the learning can happen!
- The crank that turns the wheel!

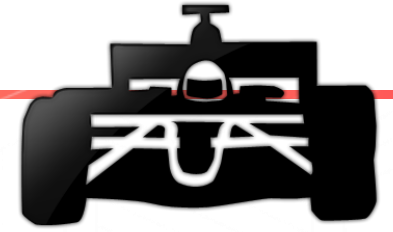


A haptic example

- Let's consider a tight loop action game
- These have black boxes that are tightly tied to haptics



A haptic example



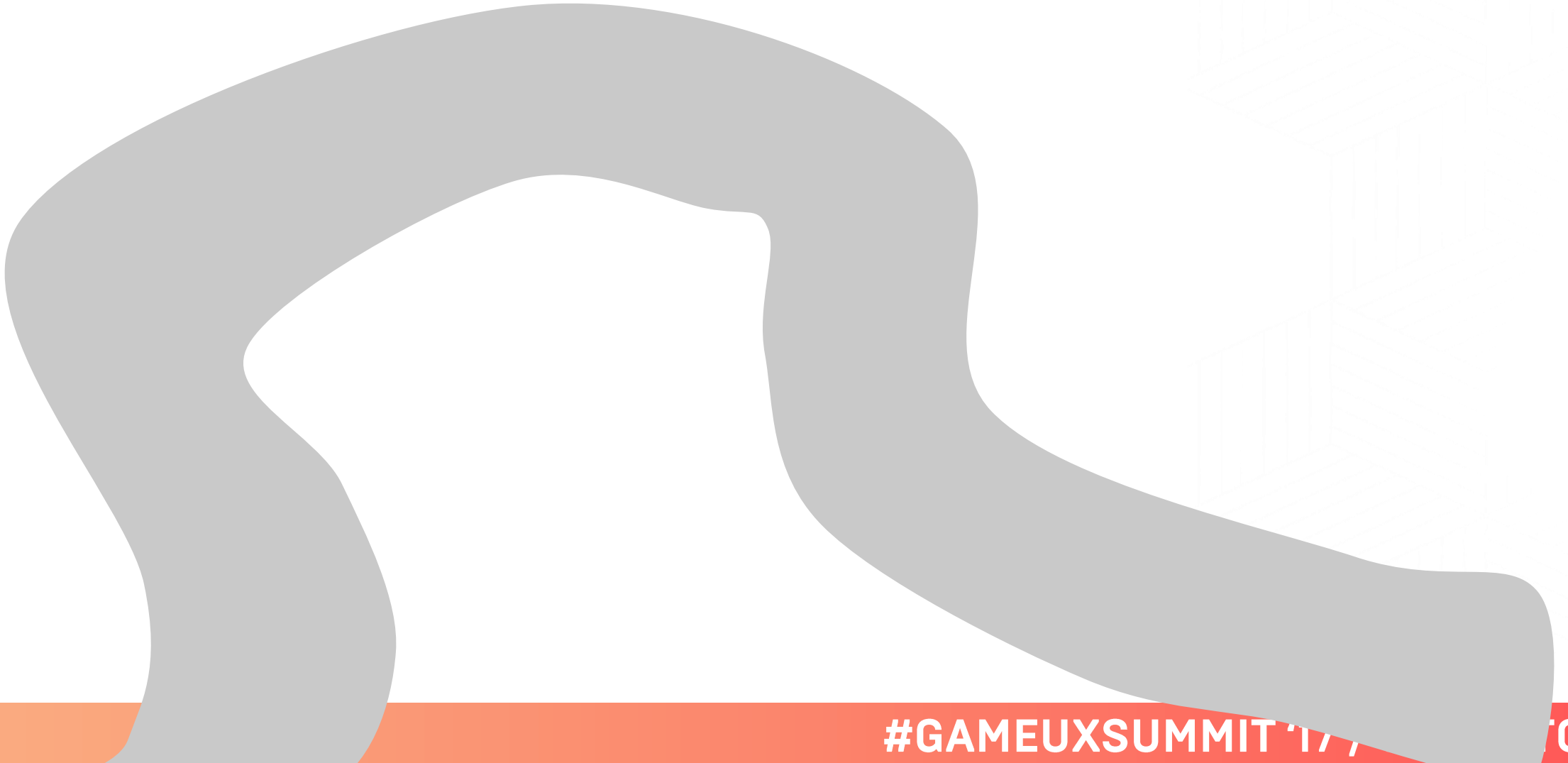
Cognitive
problem

MODIFY FOR
AVOIDANCE

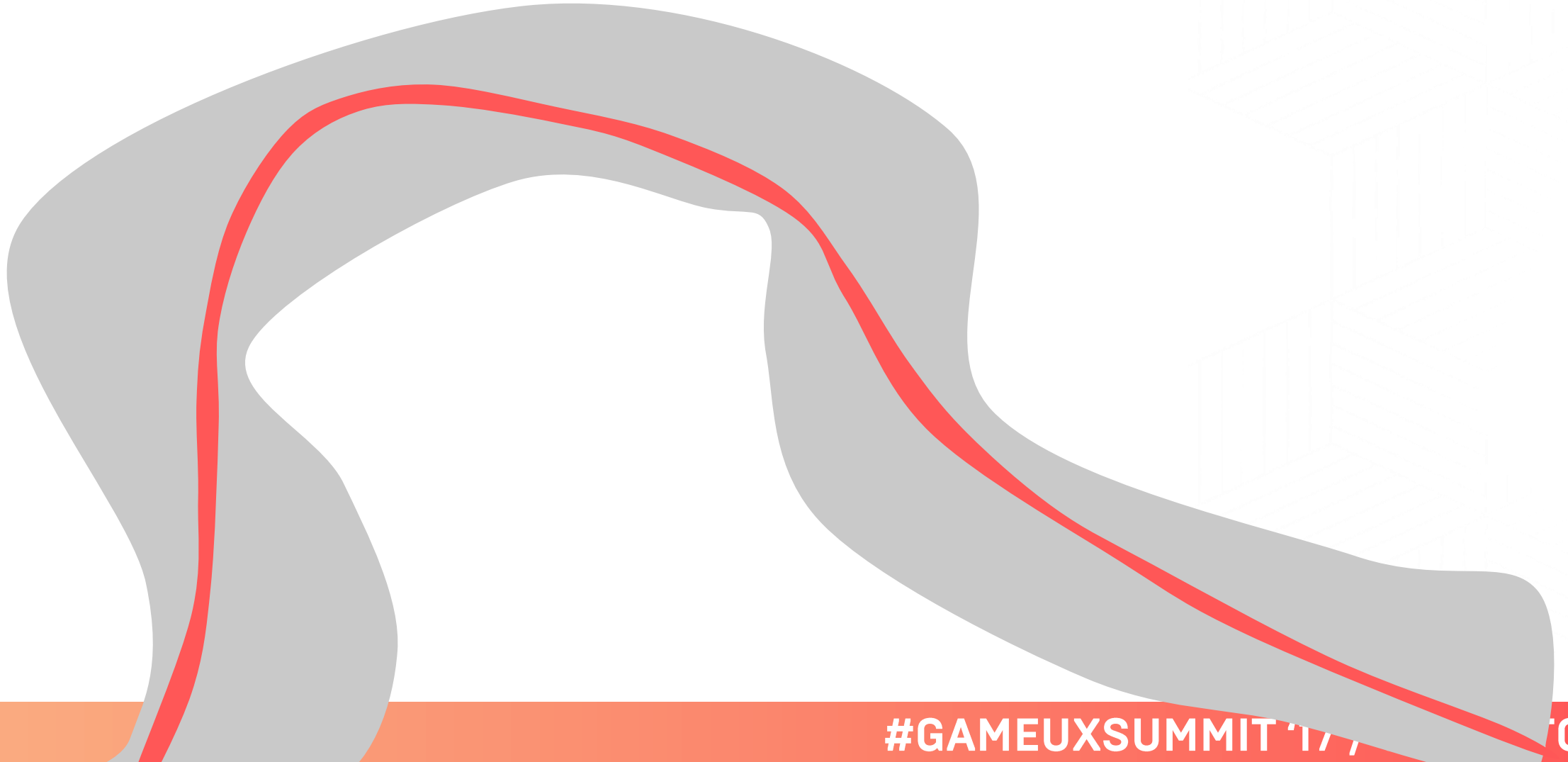
STEER ON PATH

- In a driving game, where to drive is the higher order problem (winning is the highest, not shown)

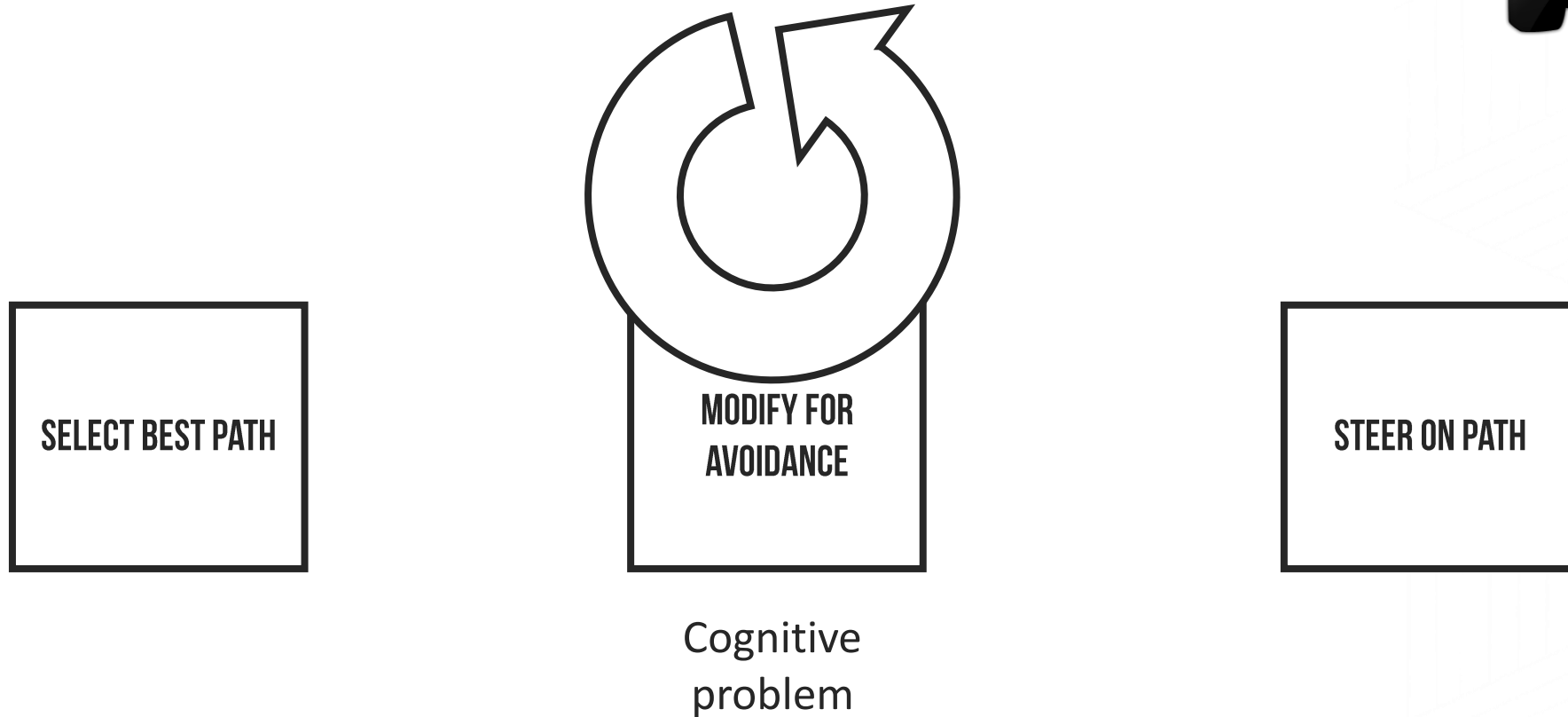
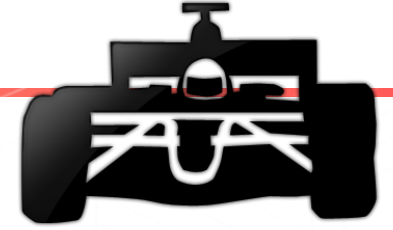
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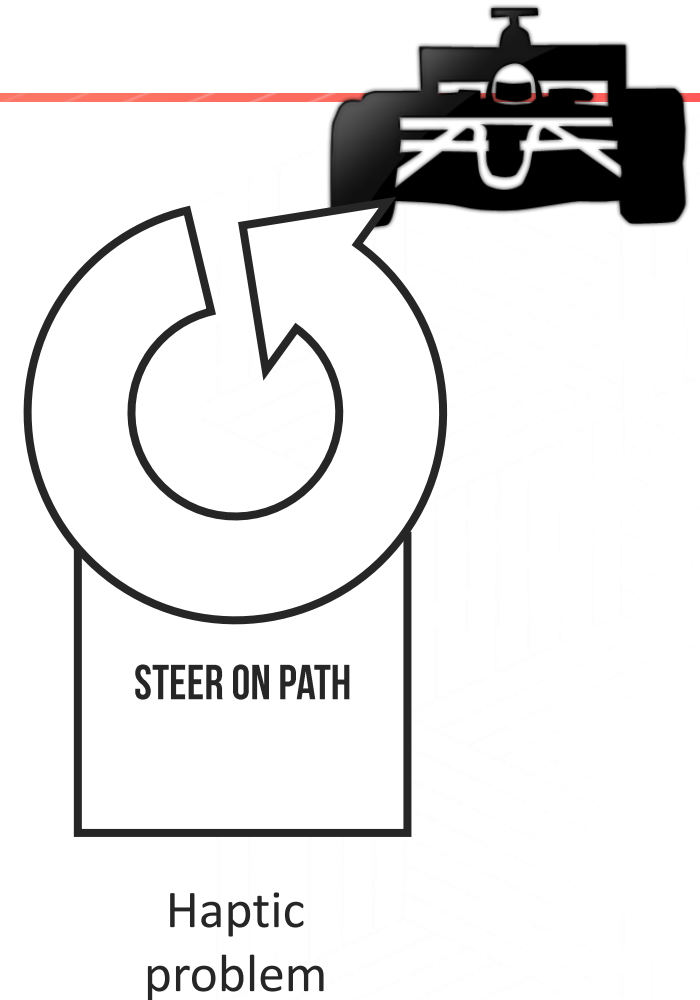


- Best possible curve path is of course constantly blocked. So at a tighter cognitive loop, you engage in avoidance.

A haptic example

SELECT BEST PATH

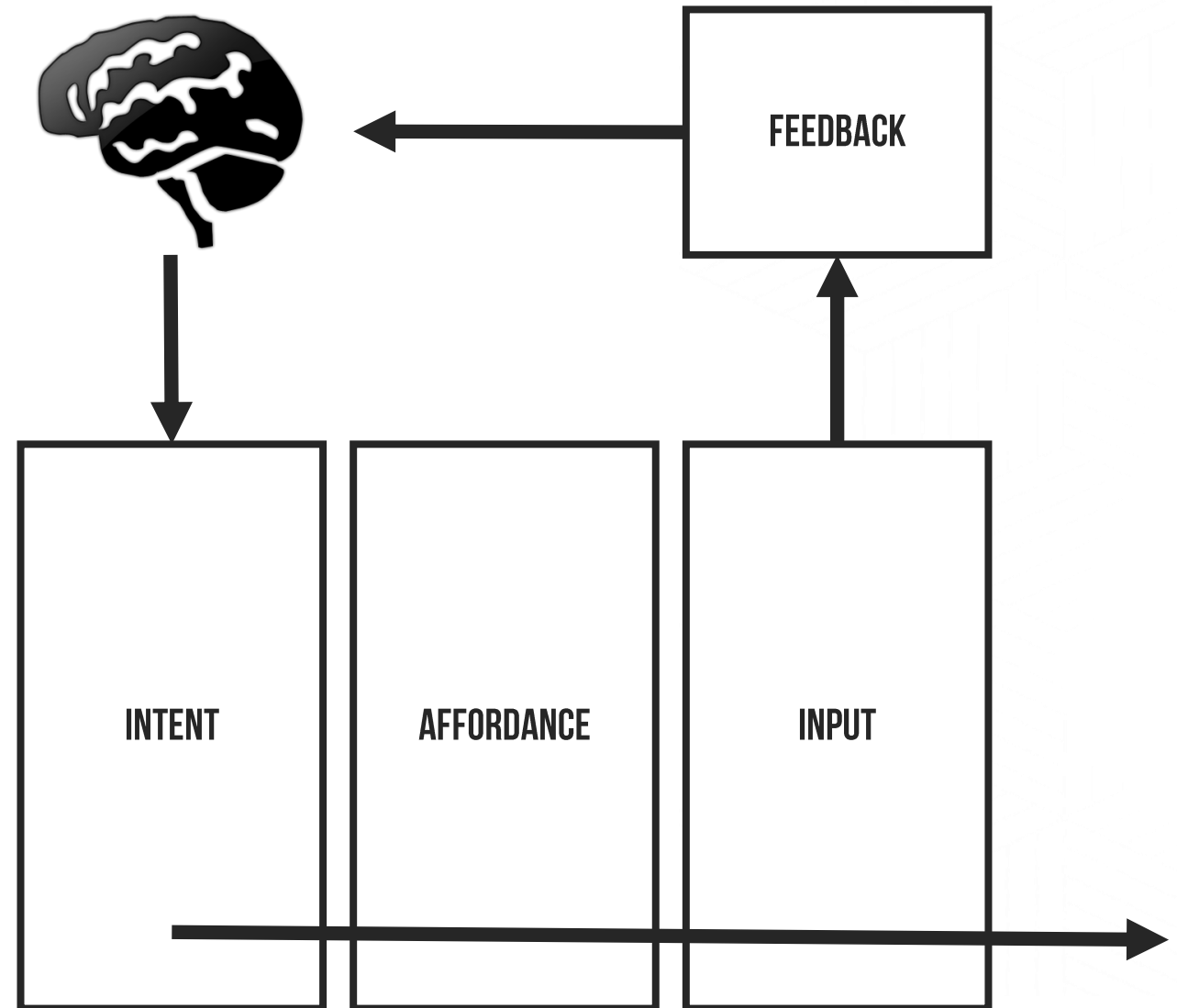
**MODIFY FOR
AVOIDANCE**



- But the tightest game loop is the loop of the controls, which is a massive autonomic and reflex challenge.

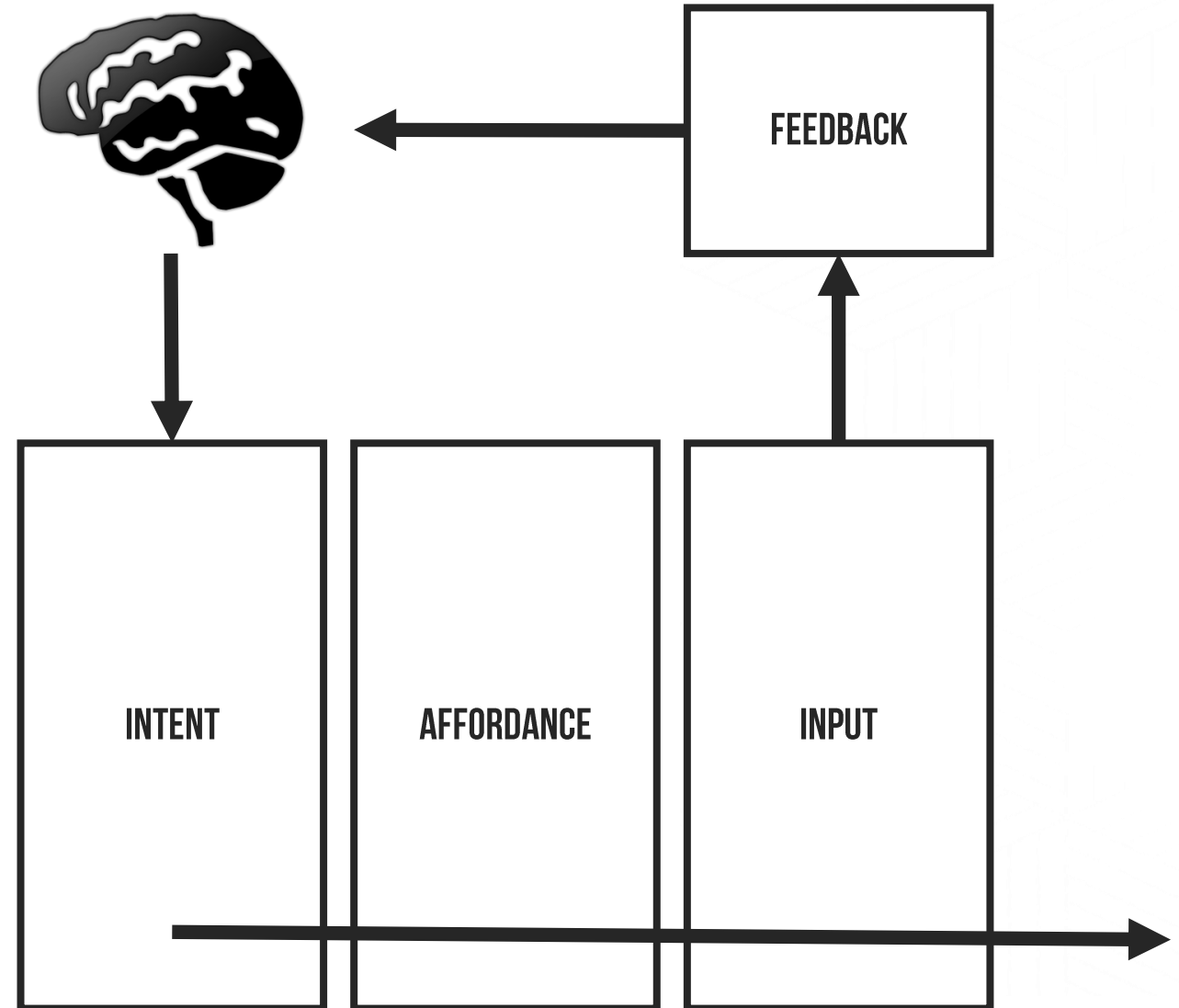
A haptic example

- This gets called game feel sometimes. The way in which tight haptic loop controls relate to your actions.
- There are best practices here that are not UI.

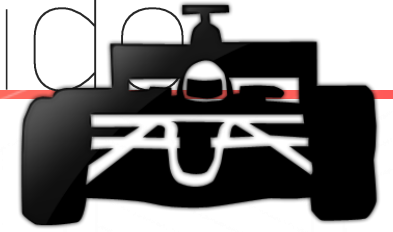


A haptic example

- But they are also not just black box challenges. Some of it is tied to human reaction times
 - ~265ms for conscious response
 - less for autonomic
 - often sub 15ms on visual perception



Where UX and game can collide



Cognitive
problem

MODIFY FOR
AVOIDANCE

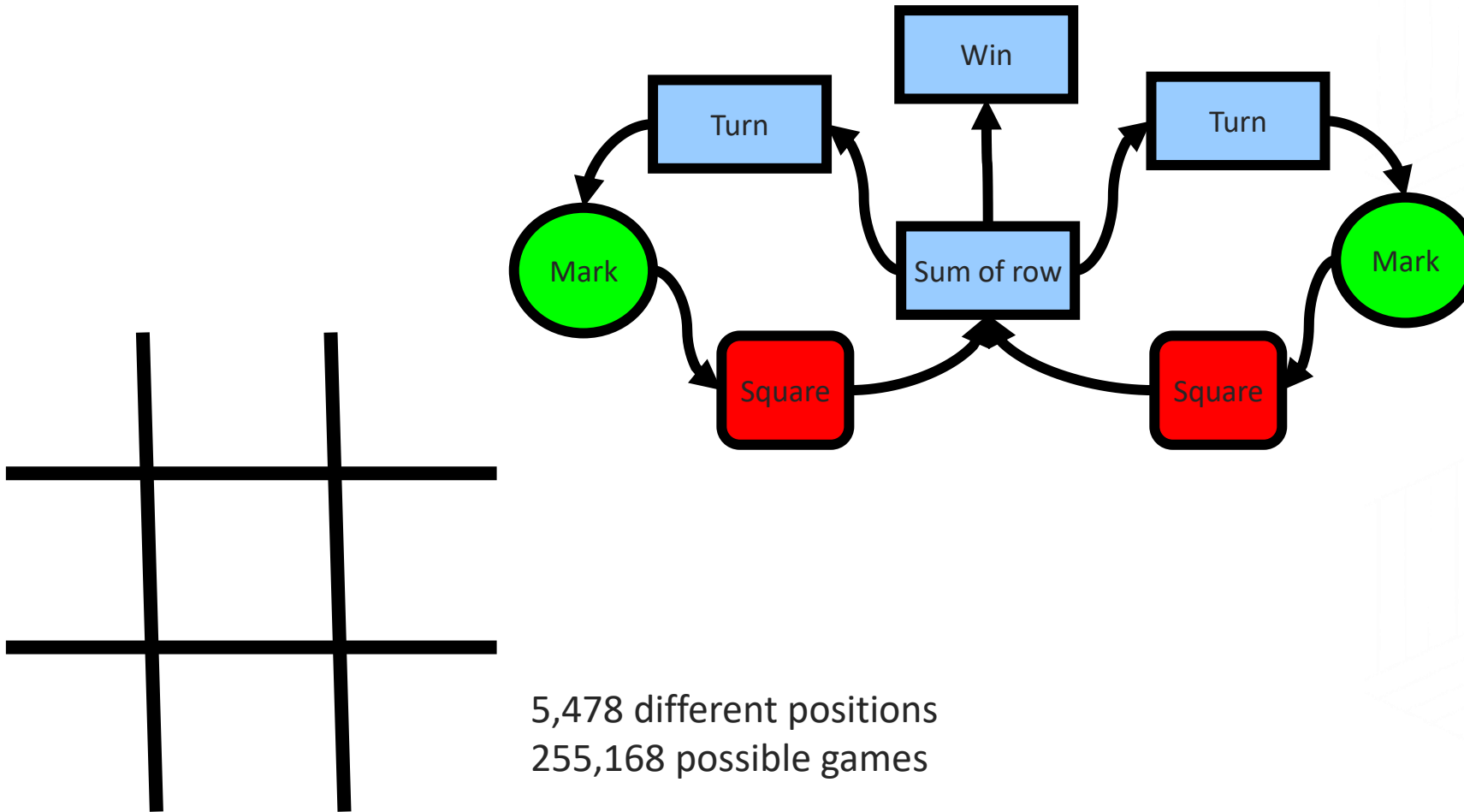
STEER ON PATH

- Today's UX solution to this is to remove the highest order cognitive game by providing a "ghost track" to follow.

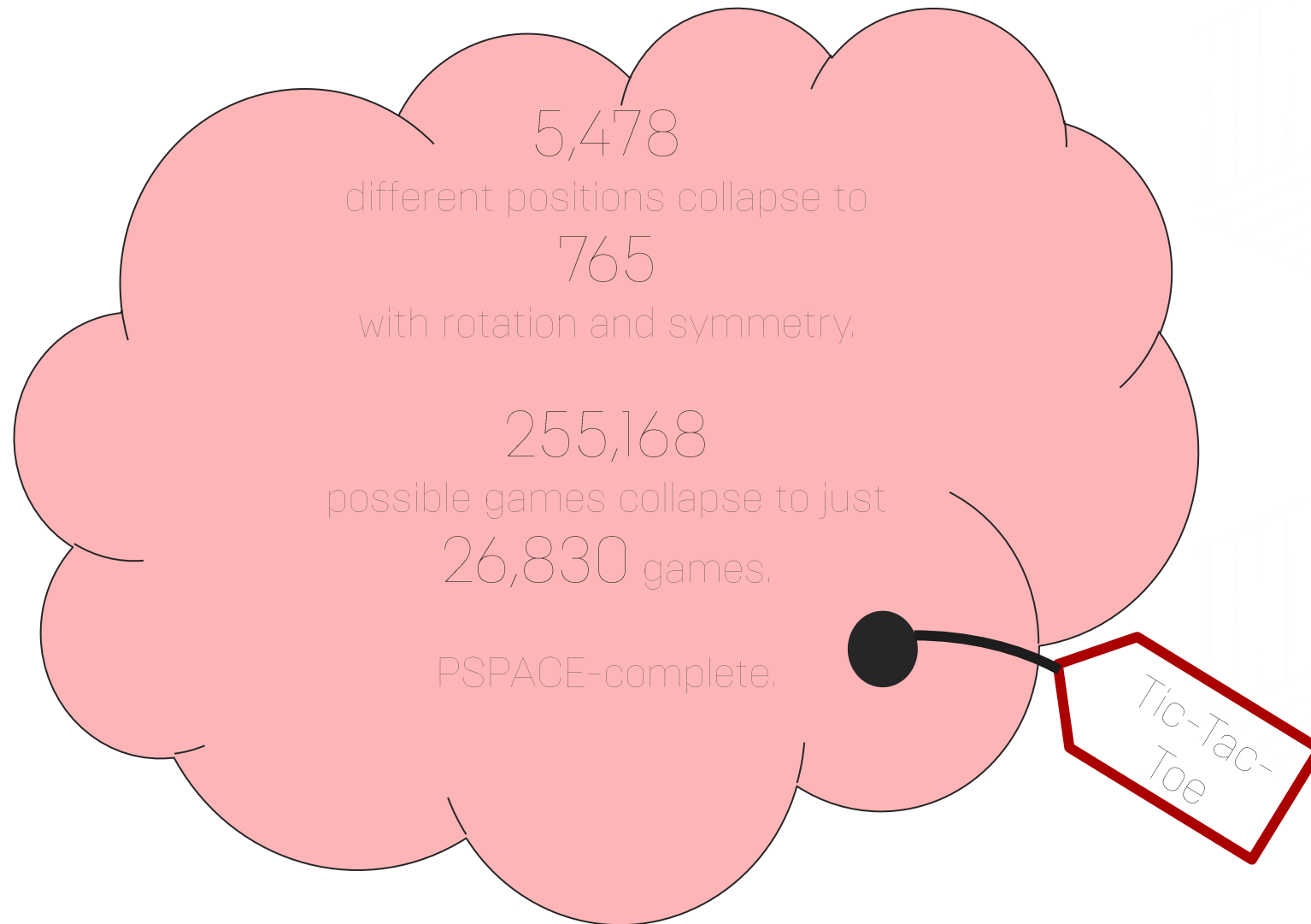
Different loops for different goals

- This loop serves particular learning purposes – reflex, training, reaction time.
- The objective is to train the autonomic system as much as possible.
- Often these sorts of games have many verbs.
- Generally, they don't have a lot of “play” to them though.

"Play" is possibility space



It is "range of motion"

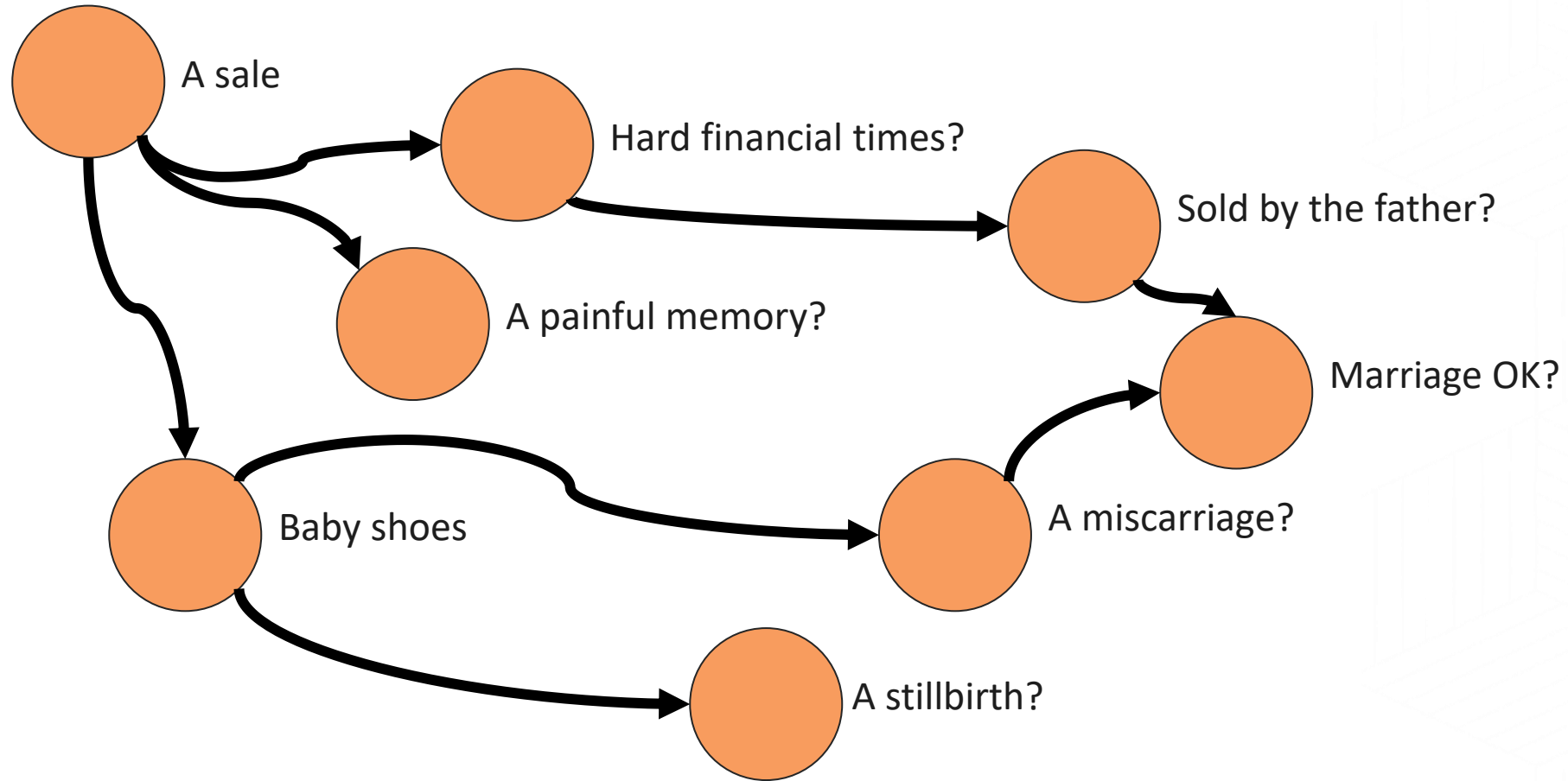


But it is also ambiguity

The hero slew the dragon and saved the
kingdom.

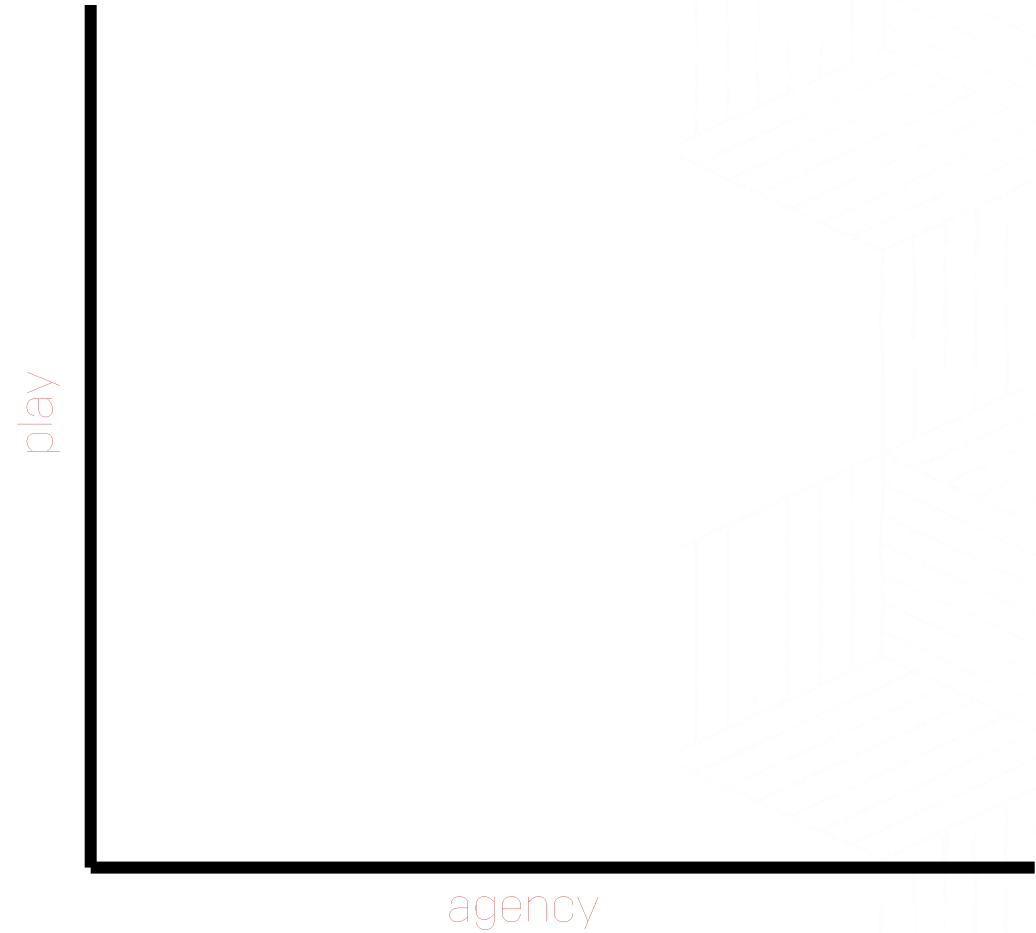
For sale: baby shoes. Never worn.

A choice architecture in "space"



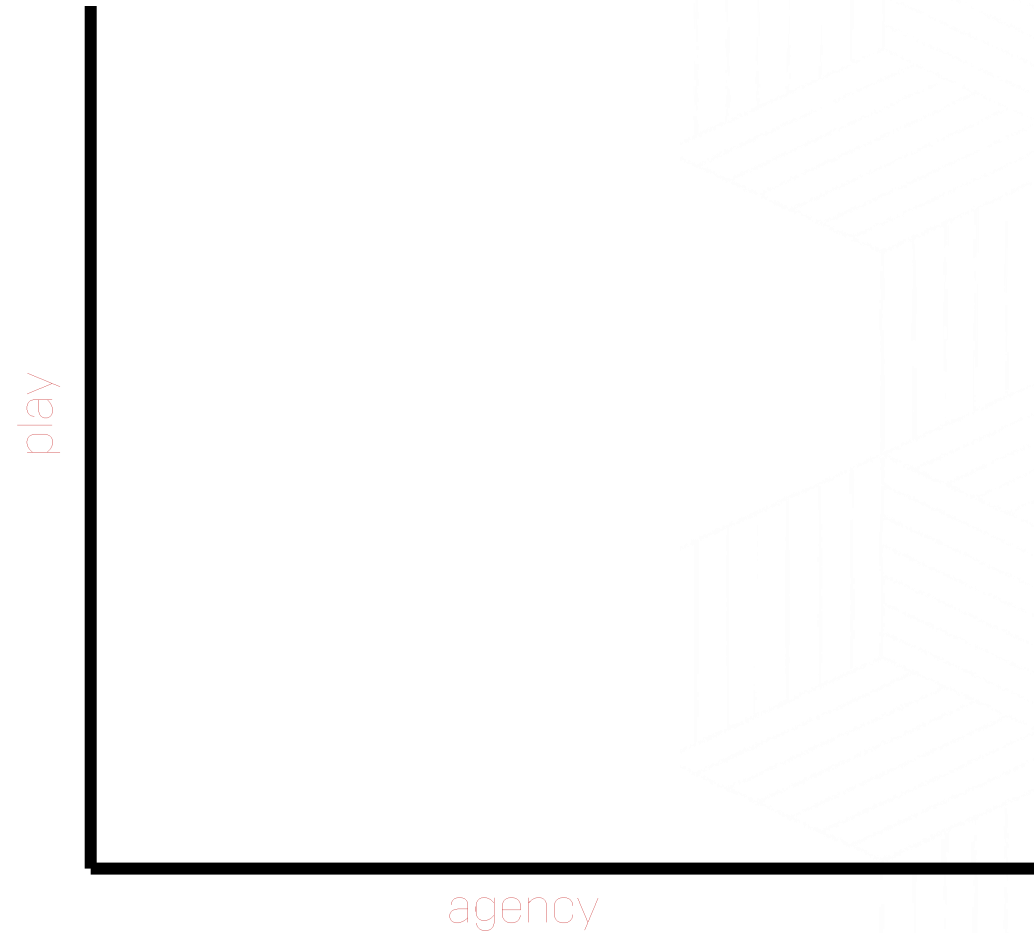
Agency

- Agency is defined by the number of verbs, of *inputs*.



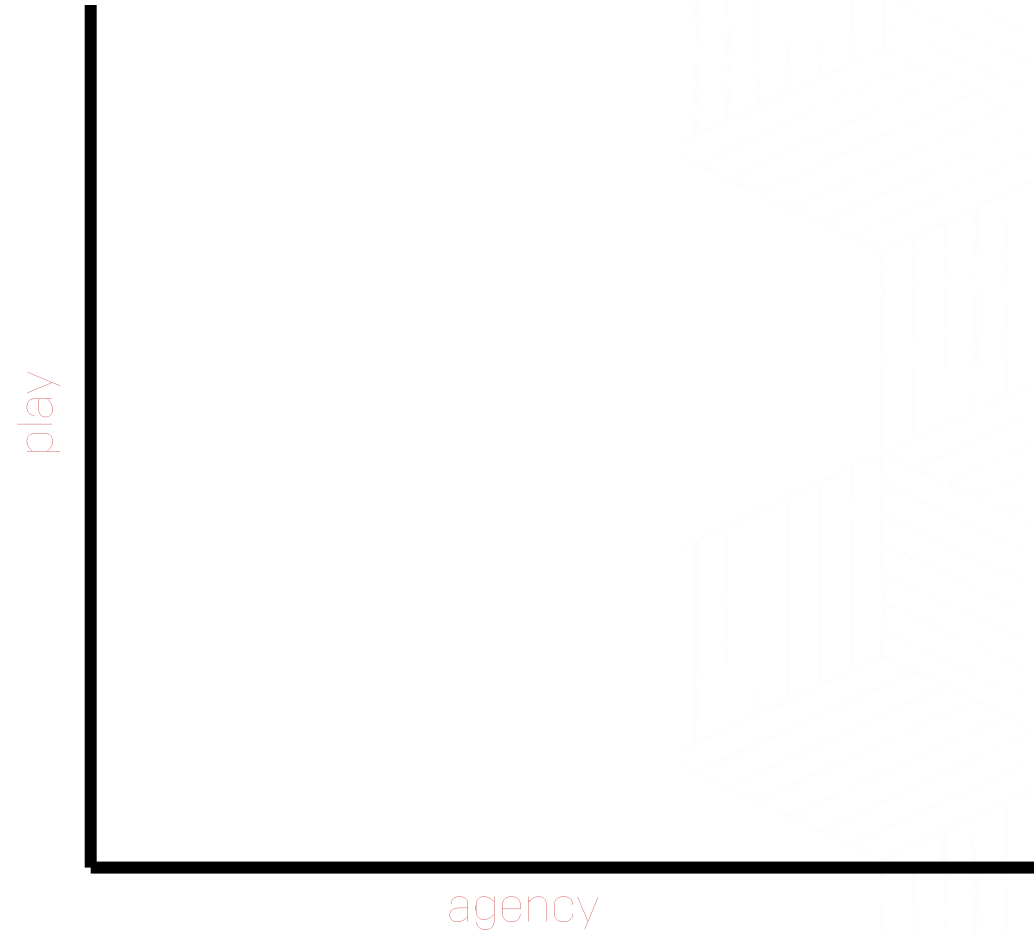
Agency

- Agency is defined by the number of verbs, of *inputs*.
- Play is defined by the number of *answers*.



Agency

- Great UI: 1:1 mapping of input to answer.
- Great UX: many inputs, one answer.
- Great games? One to many?
 - Not that fast...



Games may have many purposes

- Because the lessons we are trying to teach may be quite varied.



Games may have many purposes

- Different games may fall on very different areas in this model.

Photopia

Sandbox MMO

Journey

Dear Esther

Dishonored

Minecraft

Wii Orchestra

GTA

Call of Duty

CYOA

Wii Sports

Candy Crush

Super Mario Bros.

Games may have many purposes

- In fact, these can be genres.

Photopia

Art game

Journey

Dear Esther

Story game

Wii Orchestra

Kids' game

CYOA

Candy Crush

Sandbox MMO

Sandbox

Dishonored

Immersive game

Minecraft

GTA

Call of Duty

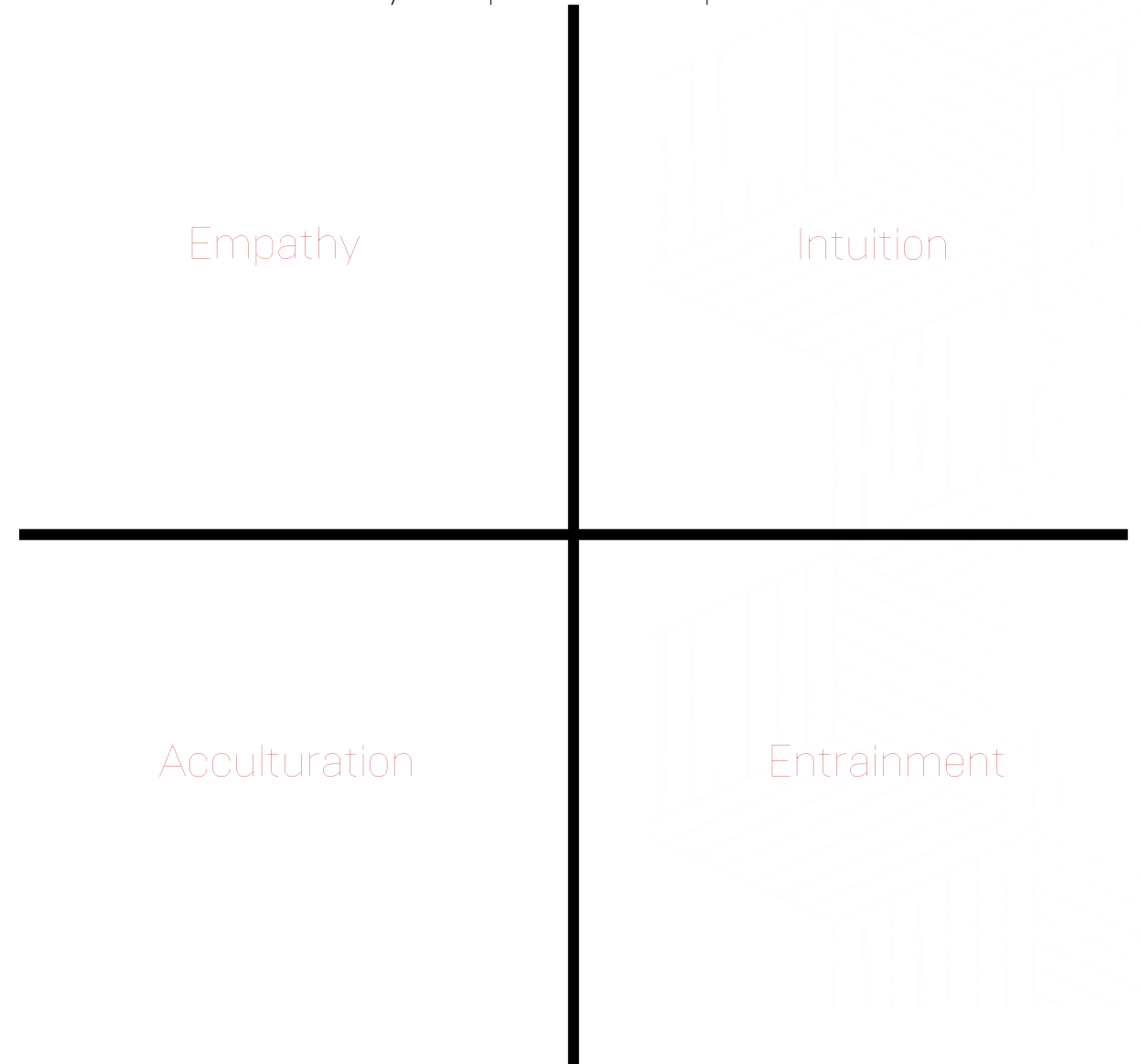
Arcade game

Wii Sports

Super Mario Bros.

Games may have many purposes

- These work for different *effects* on users, but all of them need good UX.



Techniques per effect

- LOOSE SYMBOLIC RELATIONSHIPS
 - LAYERED SYMBOLOGY
 - AMBIGUITY OF REFERENTS
- ANACOEENOSIS: ASKING AUDIENCE FOR OPINION, PRESENTING MULTIPLE OPINIONS
 - SURREALISM, AKAUSALITY

- RHETORICAL REPETITION
- REPLAY FOR ACHIEVEMENTS
 - FRAMES, LABELS
- IMPOSE WORLDVIEW THRU VIEWPOINT CHARACTER
 - OTHERING
 - HIGH CAUSALITY

- NP PROBLEMS
- MULTIPLAYER
- ORTHOGONALITY (DISPARATE GAMES IN ONE)
 - SIMULATIONS
- SIGNS AS TOKENS (RPGS, DIXIT)

- STAGECRAFT: CUTSCENES, TRIGGERS, CONTROL
 - STRING OF PEARLS
 - SCAFFOLDING
- SPEED AND REFLEX TRAINING
- SELECTIVE AGENCY (NO CHOICES)
 - TROPES

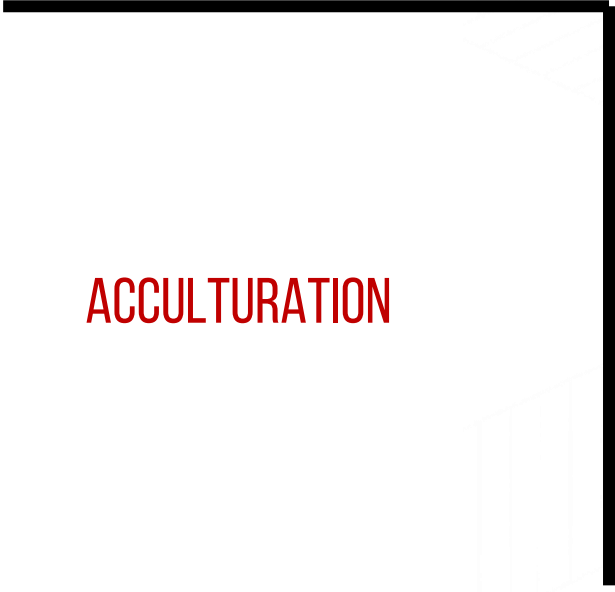
A quadrant example

- Think of the type of game that much of AAA is centered around, as well as a chunk of the indie community – you have systems with actually relatively few verbs.
- The black boxes are typically derivative or familiar, reducing the cognitive load.

- RHETORICAL REPETITION
- REPLAY FOR ACHIEVEMENTS
 - FRAMES, LABELS
- IMPOSE WORLDVIEW THRU VIEWPOINT CHARACTER
 - OTHERING
 - HIGH CAUSALITY

A quadrant example

- A low verb low play might be a heavily narrative game, maybe fairly linear.
- These serve different purposes, because a huge part of the game is about lack of choices.



ACCULTURATION

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



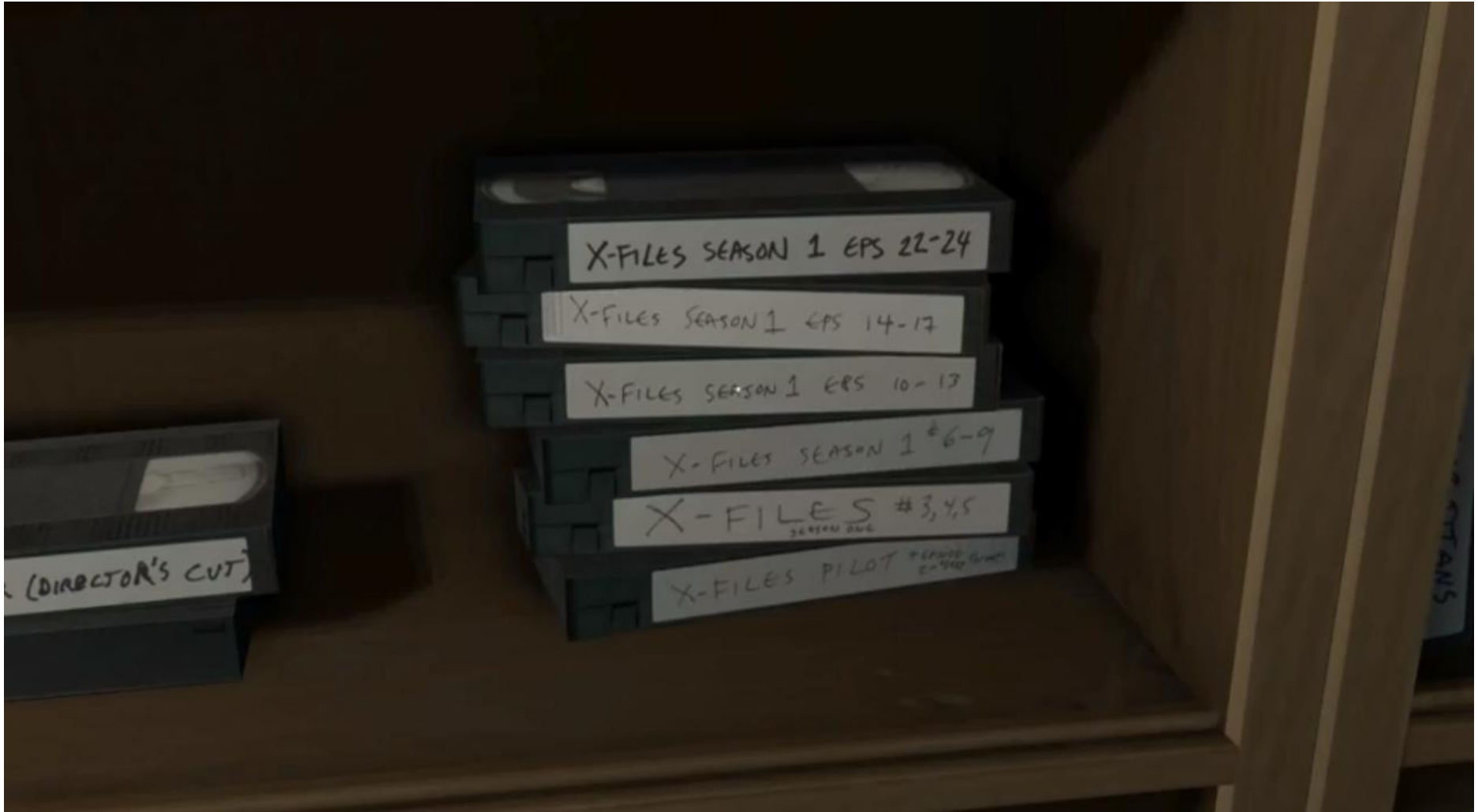
- Apopthesis and paralipsis
 - Bringing up the opposing viewpoints just in order to dismiss them.
- The use of labelling in order to cause groups or ideas to be narrowed down and stereotyped

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.

The empathy exploit

- *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



Othering

- Contrast to *All Quiet on the Western Front*...

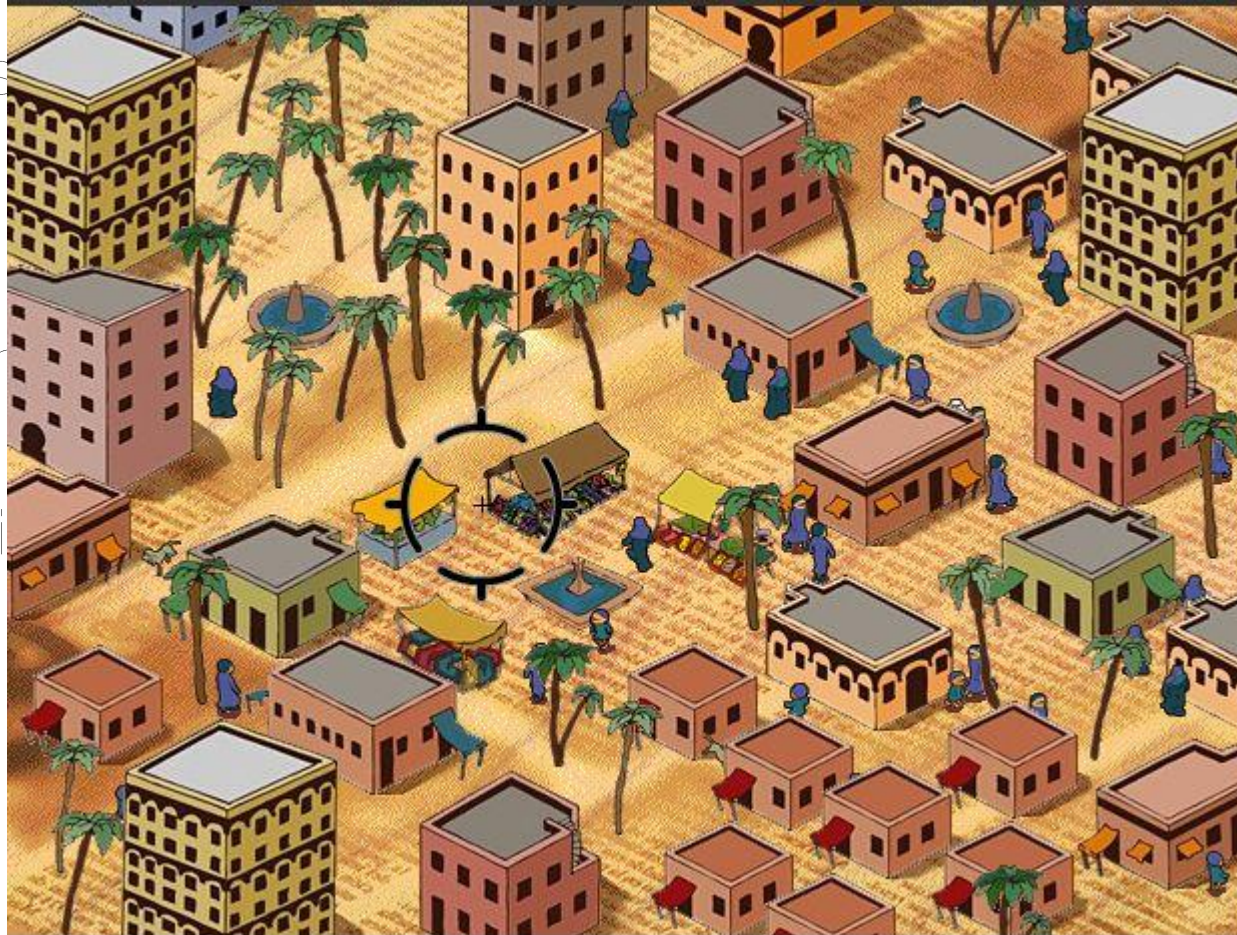


High causality

- 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

High causality

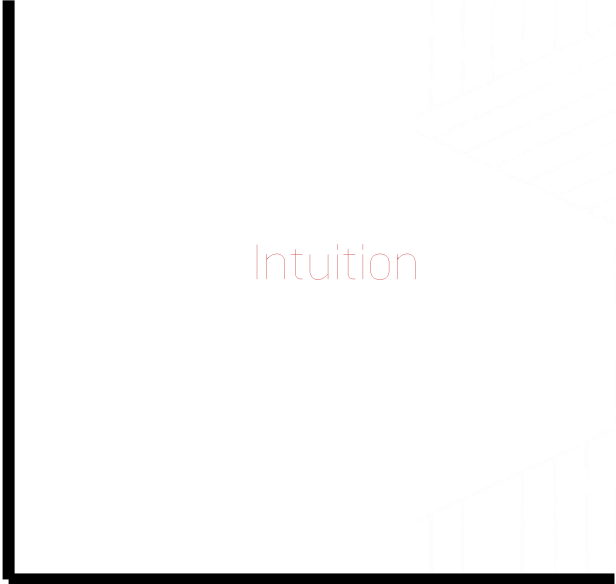
- When causality is made explicit, that inculcates the notion that the cause this time may be the S.O.L.E reason why a given thing could happen
 - Linear narratives
 - False choices in
- You can do this in the system point
 - This was the poli



the dynamics of

The hardest UX

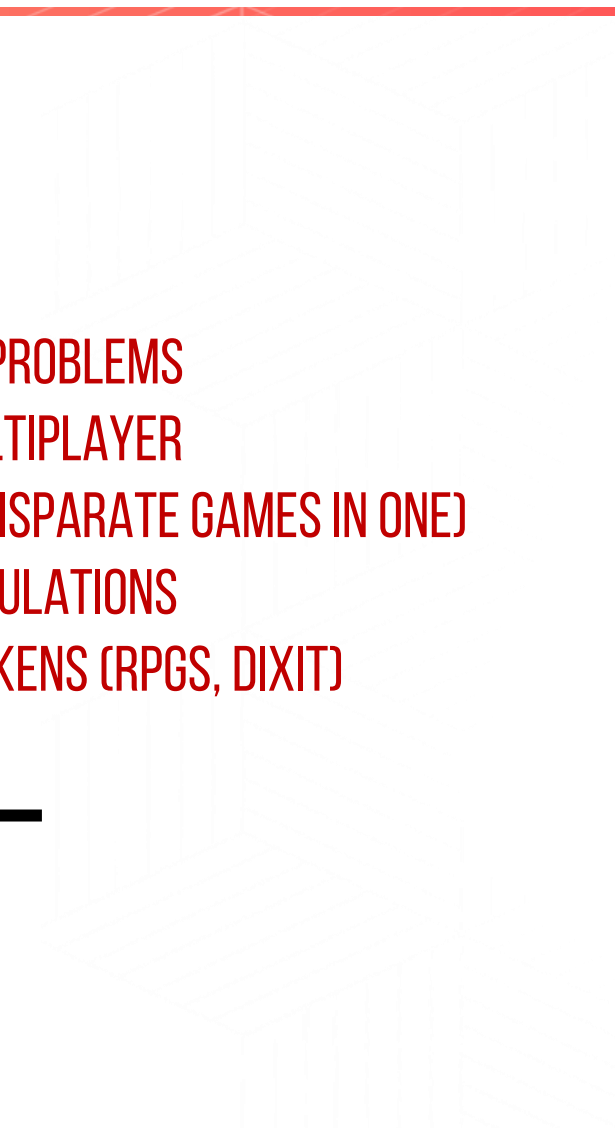
- Of course, the hardest UX to create is actually when you have many verbs and much play, the land of sandboxy games where just the density of affordances means that everything is confusing...



Intuition

The hardest UX

- Here is where working with consistent paradigms becomes critically important

- 
- 
- NP PROBLEMS
 - MULTIPLAYER
 - ORTHOGONALITY (DISPARATE GAMES IN ONE)
 - SIMULATIONS
 - SIGNS AS TOKENS (RPGS, DIXIT)

A tuning checklist

- I use a little checklist for tuning...
- Broken into four categories:
 - FUN: items that pertain to black box structure, aka Hard Fun/Visceral Fun
 - DELIGHT: items that pertain to feedback systems, aka Easy Fun
 - SOCIAL: items related to human interactions, aka Social Fun
 - FLOW: items related to engagement, larger scale structure

Do you have to prepare for the challenge?	<i>Select loadout for an encounter</i>
...where prep includes prior moves?	<i>Tackle the trash mobs after the big boss</i>
...and you can prep in multiple ways?	<i>two different valid raid teams for a boss</i>
Does the topology of the space matter?	<i>layouts of the level matter</i>
...does the topology change?	<i>the enemy can block areas</i>
Is there a core verb for the challenge?	<i>A one-word verb like "defeat" or "intercept"</i>
...can it be modified by content?	<i>equipment affects the combat</i>
Can you use different abilities on it?	<i>aka, can you make choices, like say different attacks</i>
...will you have to in order to succeed?	<i>will mashing a single button fail, like in a fighting game</i>
Is there skill to using the ability?	<i>Using timing, or aim, or some other intrinsic player skill</i>
...or is this a basic UI action?	<i>Pressing "combine"</i>
Are there multiple success states?	<i>Hitting for a critical hit versus a normal one</i>
...with no bottomfeeding?	<i>You can't farm low level mobs</i>
...and a cost to failure?	<i>You can die or miss</i>

Delight

Does every action have affordances and feedback?	<i>The grappling indicators in Arkham Asylum; the cursor change on an interactive object; the click sound when clicked</i>
...where the feedback is contextual to the action?	<i>The sound for a door opening is different than the sound for dropping an item</i>
...and where it matches reality in action and reaction?	<i>The pulling of a trigger on the controller pulls a trigger in the game</i>
...and is tightly linked narratively?	<i>The feedback for an explosion looks like an explosion</i>
...and is multimedia?	<i>You get the sfx and the visual effect and maybe more</i>
Does it elicit instinctive reactions?	<i>Petville pets are instantly cute; Bioshock levels are instantly creepy; swords are instantly swingable</i>
...mix organic and artificial?	<i>Having both maximizes aesthetic appeal</i>
...can players affect it, even if only briefly?	<i>Ripples when walking in the water; knocking over barrels</i>
Are there surprises?	<i>Disturbing the butterflies in the grass in SWG; "Zug zug"</i>
...that are familiar or expected?	<i>bullet hole decals when you shoot; actually being able to eat that apple; the guitar riffs in Brutal Legend</i>
...that are grace notes?	<i>Flushing the toilet in Half Life 2</i>
Does it invite thought?	<i>Moral dilemmas (Bioshock), mysteries (Limbo)...</i>
...such as story-creation?	<i>The wisp language in UO</i>
...or philosophy?	<i>The rebuilding of the city in Flower</i>

Flow

Is the task complex in a mathematical sense?	<i>Solving for the right pick up group for a dungeon is a tough problem.. Look up NP-hard problems</i>
...where a simple heuristic can get you by at first anyway?	<i>"tank nuker healer" will get you by for a while but isn't optimal</i>
...is it fun?	<i>See all the items in the "fun" checklist</i>
Does the task have rising and falling pacing?	<i>You don't just fight bosses; there's "breathers" and periods of less challenge</i>
...where the ebb points rise over time?	<i>"easy" at higher levels of gameplay are equivalent to boss fights earlier on</i>
...and the peak points rise over time?	<i>Bosses get tougher over time</i>
...and ebbs are never boring?	<i>You never have a level where you can just kill everything without thinking about it</i>
...and peaks are never too hard?	<i>You never hit a spot where you're stopped cold or need a strategy guide (Ninja Gaiden bad, racing game compensation good).</i>
...and you know what the next goal is and how close?	<i>Waypoint systems; XP bars; etc</i>
Does the task have positive feedback?	<i>everything you should give feedback -- when you move, you can tell you are succeeding.</i>
...every ten seconds?	<i>Something needs to be giving you an update all the time</i>
...but variably?	<i>But not so regularly that it becomes ignorable; see Treasure Madness' rewards</i>
...is it delightful?	<i>See the Delight checklist</i>
Is the task chunk-driven after initial learning?	<i>After you master jumping in a platformer, it becomes second nature, and instead you are using the tool of jumping to solve higher order problems</i>
...and new tasks are only added after the previous is chunked?	<i>We don't make you learn jumping and shooting at the same time</i>
...and new tasks are not orthogonal?	<i>You layer shooting on top of jumping; they are complementary</i>

Social

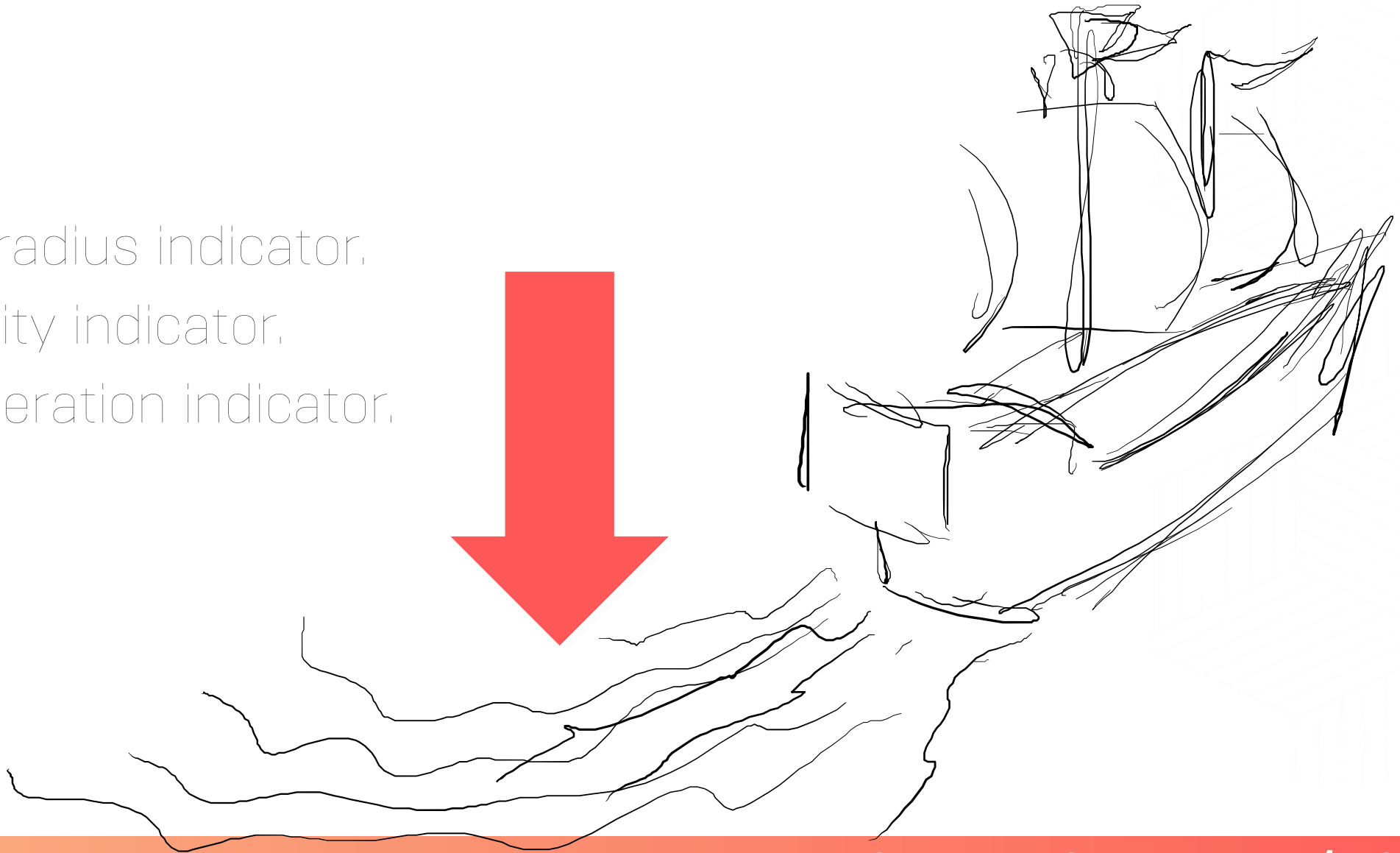
Do you need other people?	<i>Viral mechanics; grouping; etc</i>
...because they contribute something unique?	<i>Teams; economic exchange</i>
...and you have a clear role?	<i>Classes, positions on a sports team</i>
...and you feel regularly needed by them?	<i>Interdependency, where you can enhance others' success</i>
...are there regular prompts for it?	<i>Neighbor prompts, or stuff in the mechanics that calls for help</i>
Do you have a rich growing profile?	<i>Character sheet, profile page</i>
...and you have clear relative status?	<i>Levels</i>
...and personalization?	<i>Equipment/clothing</i>
...and you can see other people's clearly?	<i>Dollhousing/decorating, avatars</i>
Does the activity promote regular rituals?	<i>Appointment gameplay; leveling up celebrations</i>
...that have pageantry?	<i>Levelling up visuals, graduation ceremonies</i>
...and public presence?	<i>Visible to others</i>
Does the activity promote altruism?	<i>Gifting, grouping, donation rooms, etc</i>
...and reciprocity?	<i>Social indebtedness: return gifts, etc</i>
...are there regular prompts for it?	<i>Nag screens, incentives</i>
...can you teach?	<i>Mentoring/sidekicking</i>
Does it promote tribality?	<i>Group membership like guilds</i>
...and is there membership in more than one?	<i>Class membership, guild+city+tag, etc</i>
...can you gloat?	<i>Taunt systems</i>

A sailing ship



A sailing ship

- Turn radius indicator,
- Velocity indicator,
- Acceleration indicator,



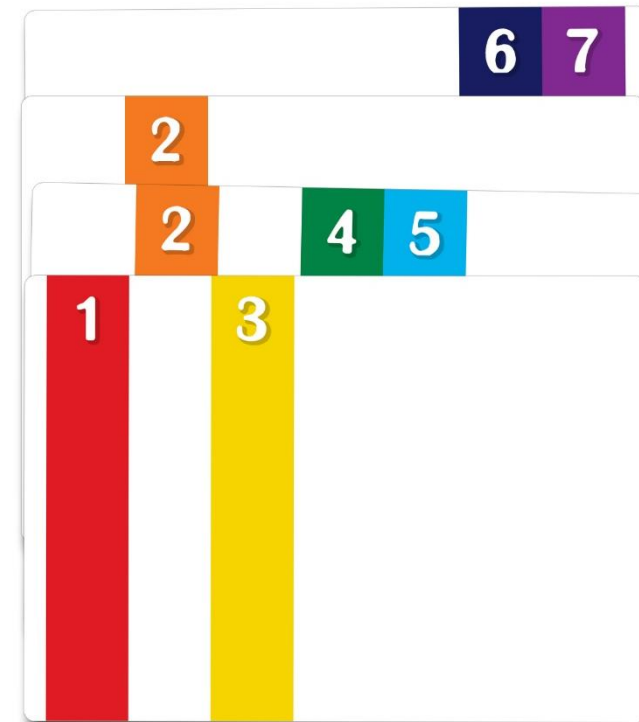
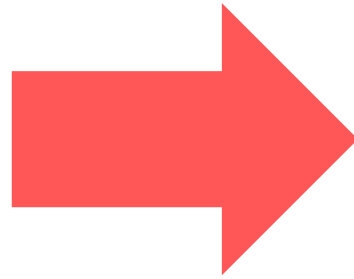
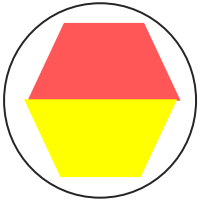
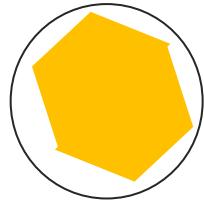
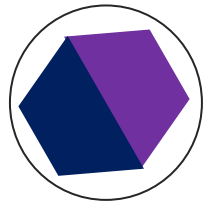
Unicorn Chaser

- Forthcoming party card game.
- But... I had to shelve it for YEARS.
- Why?



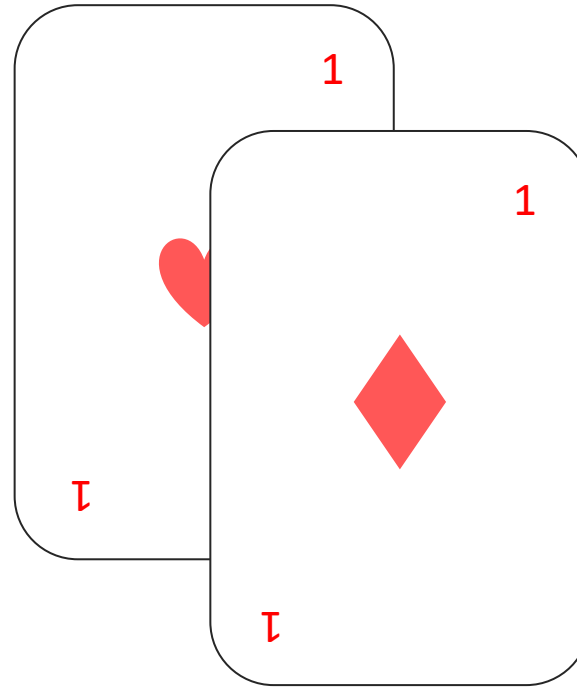
Unicorn Chaser

- Original black box design was exactly the same, but the experience was very different.



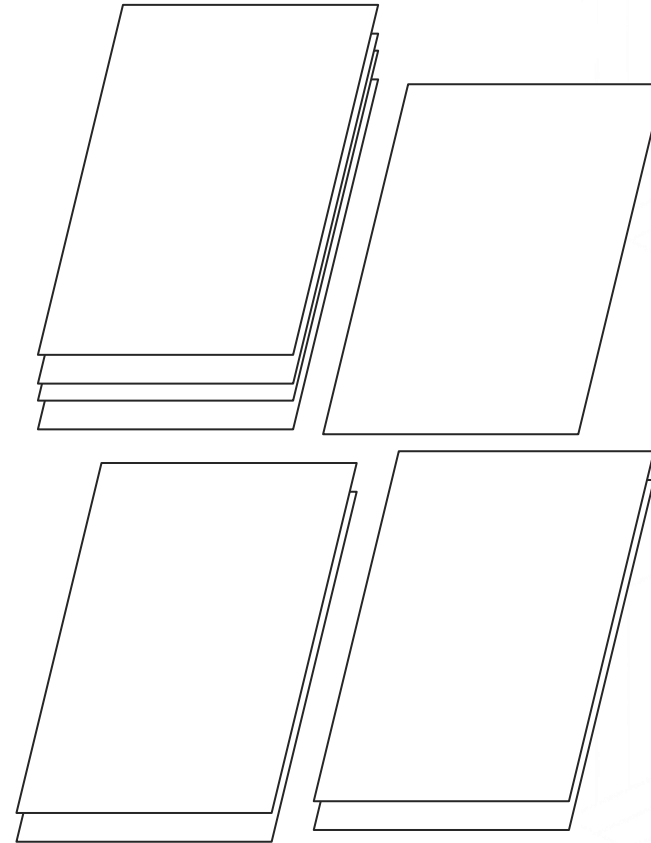
Tiny Castle

- Take the red cards 1-4 from a deck.
- And the other player gets the 1-4 black cards.



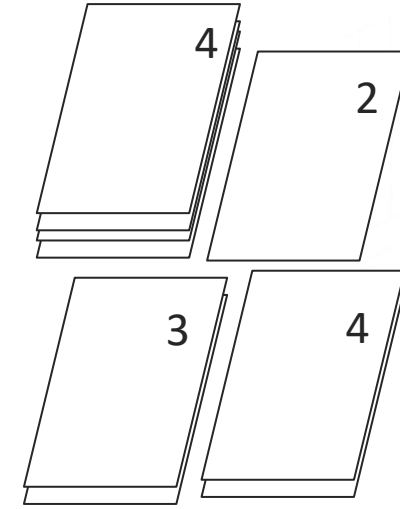
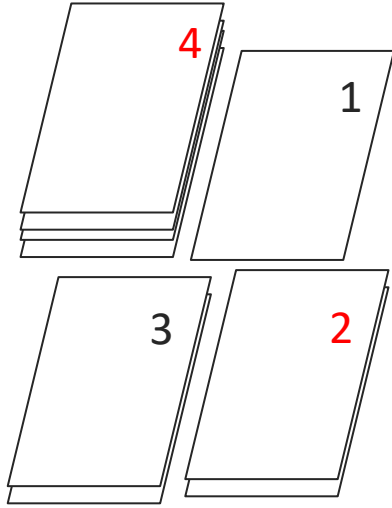
Tiny Castle

- Play on four stacks.
- On your move:
 - Play a higher card than what is there.
 - Or move a card from one stack to another, if it is going on something higher.
 - Or replace a 4 and everything under it with a 1, if you have one.



Tiny Castle

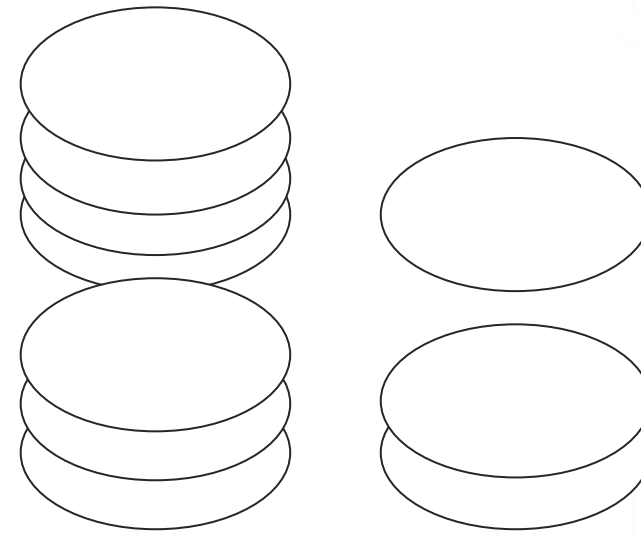
- Win by getting 1, 2, 3, 4 on top



- OR by getting the top all your color.
- OR by preventing the opponent from having a move.

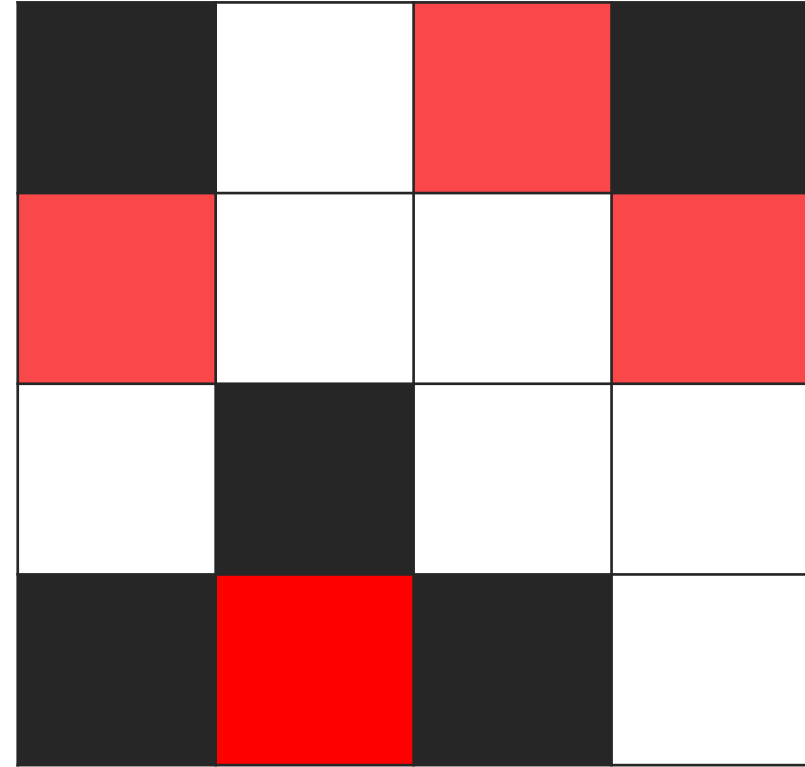
Tiny Castle

- Originally designed with discs, not cards!
- Which meant you could not see what was under the top on a stack...

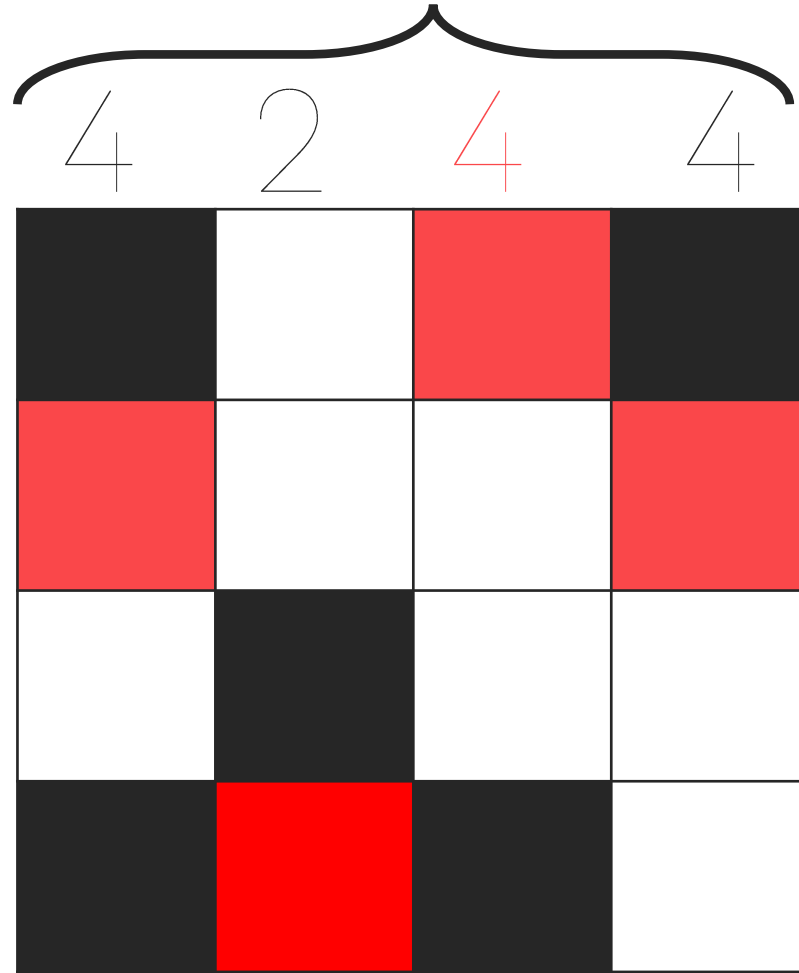


Tiny Castle

- But neither discs nor cards are intrinsic to the black box design.
- Really, this is actually a tricky little math problem.

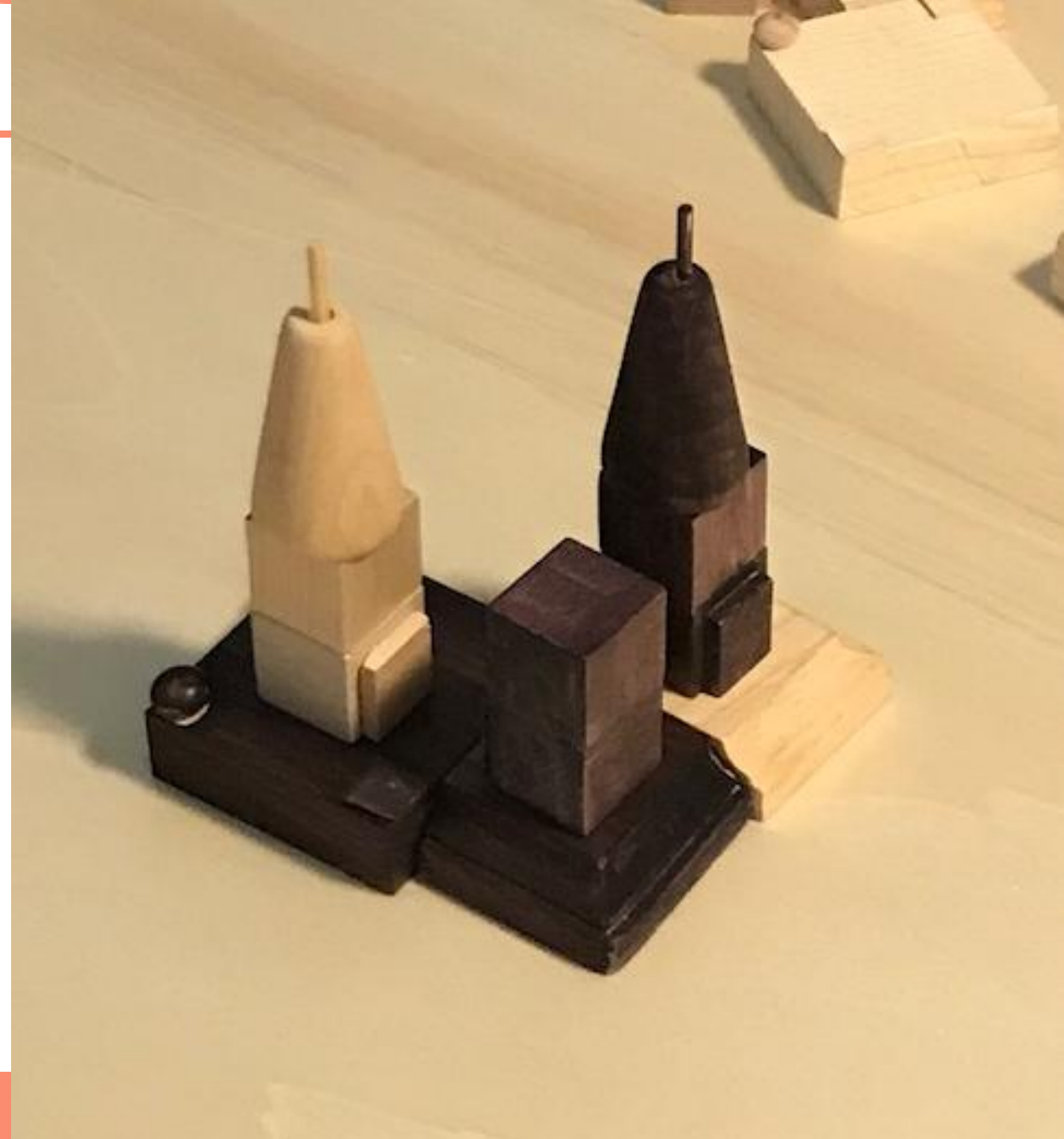


Tiny Castle (cards or discs)

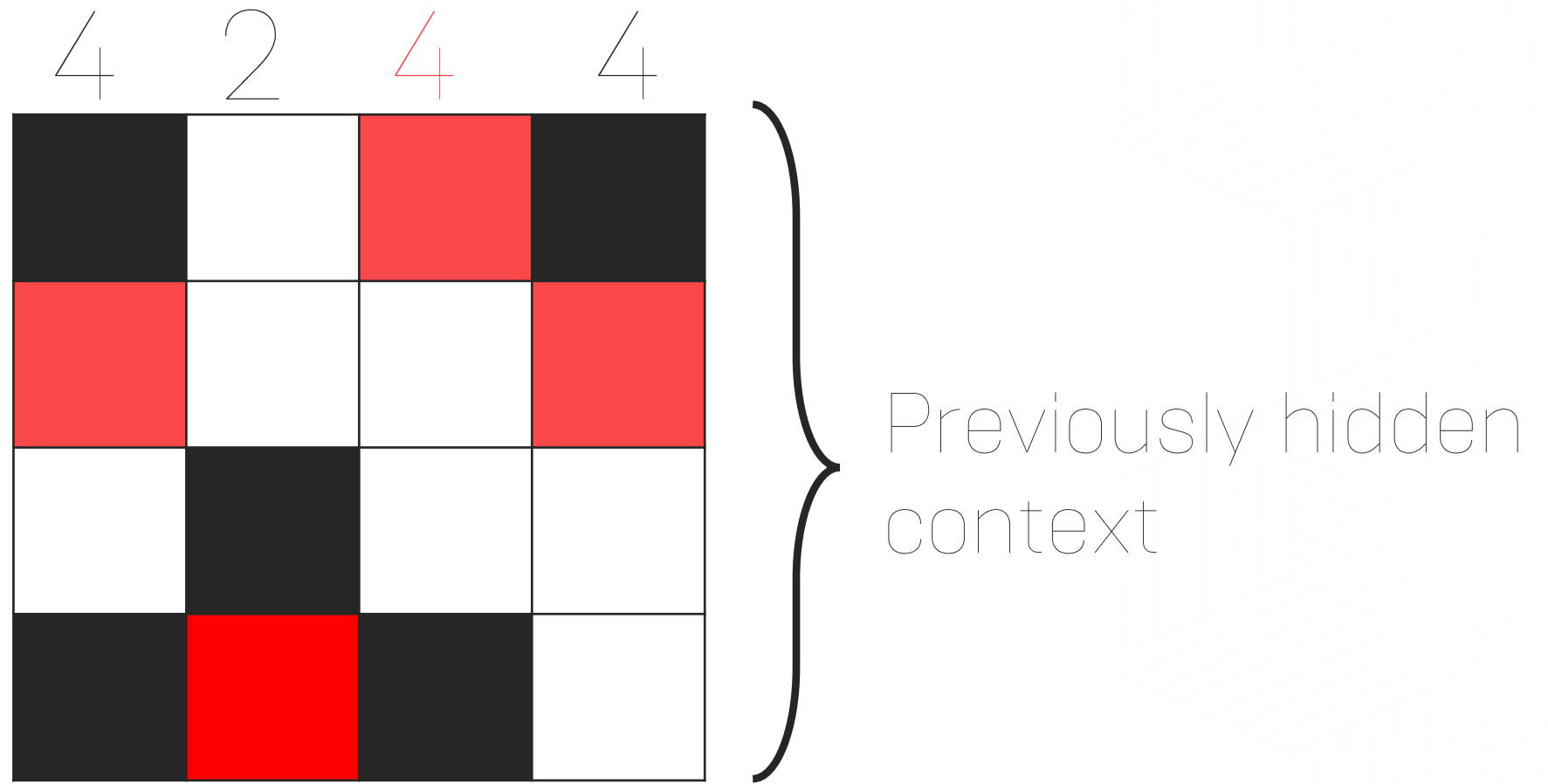


Tiny Castle

- Changed to be physical castle pieces:
 - Moat
 - Wall
 - Tower
 - Turret
- Changes legibility in more than one way

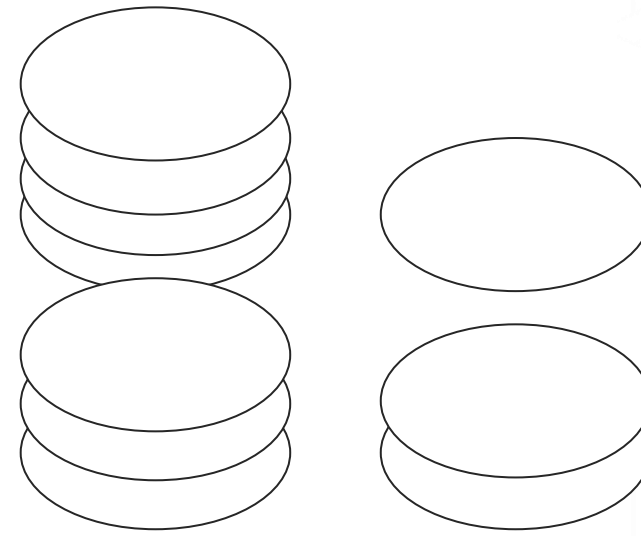


Tiny Castle as a castle



Tiny consequence

- The hidden context was *deducible* previously.
 - But that just adds cognitive load as a memory puzzle.
 - Which is not what the game is *about*.
- The “side view” exposes the strategy of replacing a stack based on what resources it returns to players’ hands.
 - Which existed, but was *hard*.



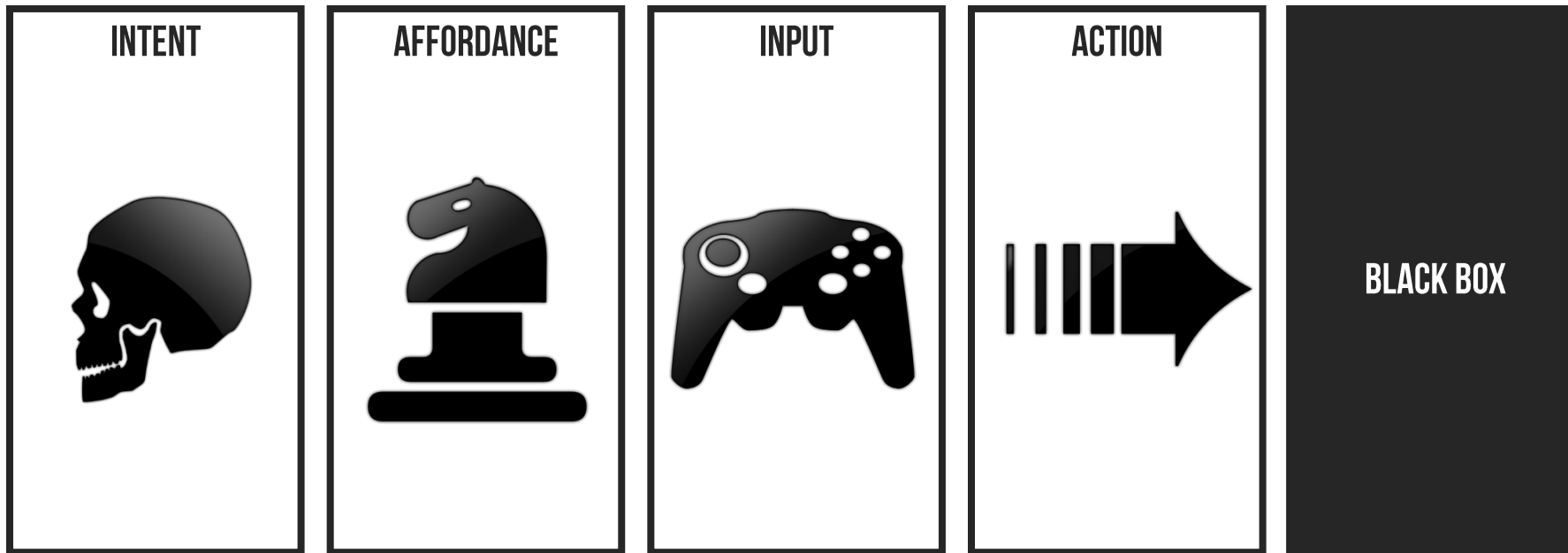
Tactility

- A new UX *costs us* easy read of the board.
 - Numbers is way easier to grok off the bat.
 - Though most players get over this quickly...
 - Plus I could mark the castle pieces with numbers anyway.
- But *buys us* whole new forms of play:
 - Creative
 - Aesthetic
 - Narrative



UI, UX, Game, Narrative

- As a director, I wear all these hats, in the end.
- But being able to disassemble games into these constituent bits gives me the ability to make the very real tradeoffs between user experience and game design.



In the end

- Game system design is about creating problems for the user to solve, and getting them to understand the “machine” behind the problem, often at an intuitive level. It is about *revealing* complexity.
- UI design is about making the *tools* for solving the problem be very obvious.
- UX design is about helping players solve the *right* problems, which usually means *hiding* complexity. Which also implies, understanding what the game is *for*, what the complexity it teaches actually is.