

GDC March 2006

Noah Falstein


Hal Barwood



The 400 Project

- 
- Our aim is to discover and compile rules-of-thumb for game design
 - Began after GDC 2001 talk:
Four of the 400
 - Column in *Game Developer*

- 
- Game design is largely uncharted territory
 - Rules are fragmentary maps & travelers tales
 - Useful even when imperfect



RULES WORTH BREAKING

© 2005 Hal Barwood & Noah Falstein

Today's Agenda

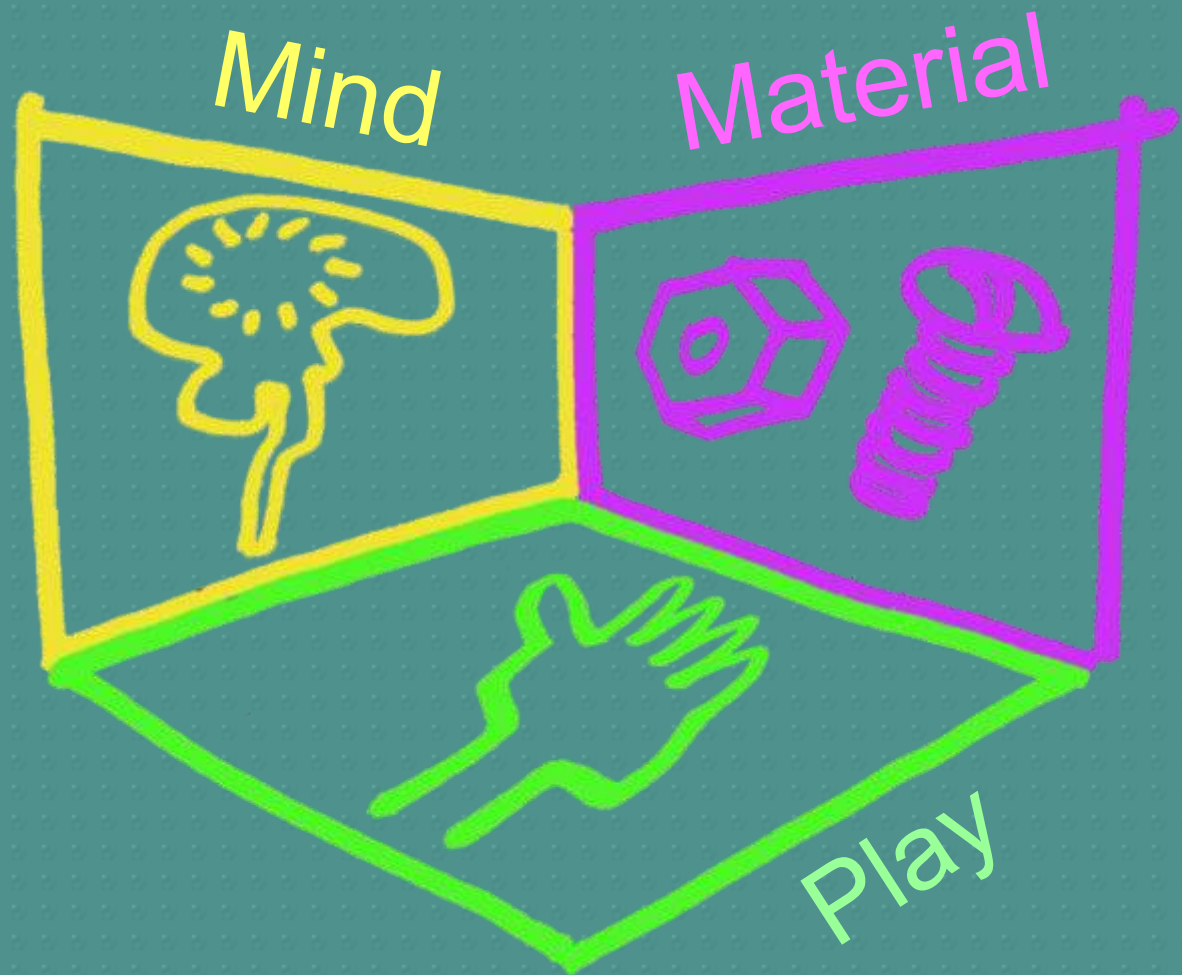
1. Offer rationale for rules and their usage
 2. Examine some new rules proposed by designers
 3. Discuss the value of breaking rules
- Takeaway —
 - mental equipment to speed your own design efforts
 - URLs to web sites where *400 Project* info is online



WHY
USE
RULES?

Why Use Rules?

- All complex endeavors seem to spawn them
- Most professions embrace them
- In game design, the vast range of possibilities seems to demand them...



Design Space — loosely constrained & vast



Design Space accomodates The Sims



Design Space accomodates Destroy All Humans



Design Space accomodates Guitar Hero



Design Space accomodates Phlinx To Go

Why Use Rules?

- Four good reasons —
 1. help guide us through the huge range of choices
 2. help us avoid trouble
 3. help us enlist the wisdom of others
 4. help us conceptualize problems
- Good rules resonate — let's look at a few from other fields...

Rules of Action

Carpentry —

- *MEASURE THREE TIMES, CUT ONCE*
 - stay-out-of-trouble rule
 - psychology rule — human frailty
 - *application to games* — check your ideas:
will they really work & survive cuts that rip holes?

Rules of Action

Journalism —

- *PUT WHO, WHAT, WHERE, WHEN, WHY IN THE FIRST PARAGRAPH*
 - fragmentary map of media territory
 - wisdom of well-developed field
 - design rule — how to lay out information
 - psychological rule — hook
 - *application to games* — frontload saleable ideas

Rules of Action

Improv theater —

- *ACCEPT ALL SUGGESTIONS*
 - conceptualization rule
 - *application to games —*
 - warning — design isn't like bike riding!
 - each new design covers new ground
 - must consciously consider hard-to-express problems

Rules of Action

Art —

- *WHEN A CREATION IS UNSATISFYING, DROP THE BEST FEATURE* (“paint out the eyes”)
 - conceptualization meta rule
 - stay-out-of-trouble meta rule
 - *application to games* — beware of local maxima

Rules of Action

Movie Editing —

- *IF YOU CAN'T SOLVE IT, DISSOLVE IT*
 - wisdom rule
 - *application to games* — all problems don't have solutions; sometimes you have to finesse them
- For further reading...
 - > *Blink* — Malcolm Gladwell's inquiry into expertise; see "the adaptive unconscious"




NEW
RULES

New Game Rules

- We now have more than 100 rules in our list
- They cluster into groups and hierarchies
 - strong rules
 - weak rules
 - meta rules
 - detail rules
 - rules straddling design & production
 - rules about psychology
- Let's look at some of them...

400 Frustrations

- Been a lot of difficulties — here are the top 5:
 - Still working on format/interactions
 - Catch-22, hopefully eased with the publication of the 100+ so far, will make it easier to contribute
 - Mostly one guy working between jobs!
 - Hard to find a sweet spot between too generic and too specific
 - Lots of people get stuck on the idea of immutable RULES, get very dramatic about it — lighten up!
- Or let Captain Barbosa explain it...

The image shows the title "PIRATES of the CARIBBEAN" in a stylized, gothic font. The text is white with a dark outline, set against a dark, stormy background with a large, bright, circular light source, possibly a full moon or a large fire, in the center. The overall color palette is dark with shades of blue, black, and white.

PIRATES of the CARIBBEAN

The Pirate's Code — rules are just guidelines

Guidelines...

- Our rules are tools, not shackles
- They come in many shapes and varieties
- People love finding patterns
- Game designers more than most...
- Some become apparent within the 400
- For instance, consider these rules:

64 Hunter Becomes the Hunted

- Make the Hunter Become the Hunted
 - let the player shift roles abruptly between predator and prey
 - > venerable tradition from *Pac-Man* through *Katamari Damacy*
 - > wolfpack versus destroyers, or even most sports

Where to find our current list of rules —

`www.theinspiracy.com`

`www.finitearts.com`

61 Visible Goals

- Players should see their goal before they achieve it
 - the “No Backwards Puzzles” rule
 - > Supplies motivation — how do I get there? — and maximizes emotional impact of finally reaching goal
 - > Examples — Most good games, recently *Shadow of the Colossus*



Shadow of the Colossus

62 Require Skill

- Make challenges require skill
 - “drop the challenge if a dead monkey could do it”
— Raph Koster
 - > If it takes effort to achieve, it feels more worthwhile
 - > This is one reason why “Interactive Movies” failed



I'm Your Man

67 Signs of Accomplishment

- Provide outward visible signs of accomplishment
 - if they've earned something, show it to everyone
 - > Players love having their character/avatar look better, more impressive – weapon, armor, glow, size, etc.
 - > Most MMOG and even single-player RPG, but also FPS, even *Civilization*



Civilization IV

What Do These Have in Common?

64 — Make the hunter become the hunted

61 — Players should see their goal before achieving it

62 — Make all challenges require skill

67 — Provide outward, visible signs of accomplishment

- They all increase emotional payoff...

Emotional Payoffs

- Hunter to hunted — fear begets revenge
- See goal — anticipation, thrill of achievement
- Skill challenge — pride of accomplishment
- Visible signs — externalize pride, show off
- And there's an overarching rule too...

46 Raise Emotional Stakes

- Raise the emotional stakes to maximize player involvement
 - parent of the rules just described
 - > stands on its own and suggests new rules
 - > true in other forms of storytelling as well

A Ring of Truth

- There are many of these groupings in the 400
- Several specific rules connected by a theme
- One Rule to bring them all and in the darkness bind them...
- For example:

59 Make Player Feel Smart

- Make the player feel smart
 - part of this is avoiding making them feel stupid!
 - > lots of ways to reward them and help them feel as if it is their own ingenuity at work (even when it isn't!)
 - > a "customer is always right" rule – the game is for the PLAYER

And These Specific *Smart* Rules

12 — Provide parallel challenges with mutual assistance

96 — Make consequences of actions predictable

19 — Make the game fun for the player, not the computer or designer

67 — Provide outward visible signs of accomplishment

- (Yes, many rules have multiple “affiliations,” belonging to several groups)
- *Smart* rules are also often *Fairness* rules

Consider These *Simplicity* Rules

- 51 — Make the interface ‘desperately simple’
- 2 — Maximize expressive potential
(use it or lose it)
- 78 — Ruthlessly minimize clicks
- 71 — Things that look alike should behave alike
- All brought together by Albert Einstein:

50 Simple as Possible

- Everything should be made as simple as possible — but no simpler
 - widely applicable and even self-trumping
 - > the rule suggests an algorithm — simplify until it breaks, then take one step back
 - > like many rules, still requires a subjective judgment call on part of designer

Contradictions

- “but no simpler” — sometimes a rule holds the seeds of its own destruction, how to break it
- Rules get very interesting when they apparently contradict each other
- Often that is where the most challenging design issues lie — for instance:

37 Design to Strengths

- Design to a medium's strengths instead of struggling with its limitations
 - form the game around what the medium does well
 - > particularly true for a new medium or platform
 - > and yet even this common-sense rule has a trump...

104 Limitations into Strengths

- Turn your limitations into strengths
 - if you can find a way to make a limitation or constraint work FOR you, the payoff is great — the Judo rule
 - > A rare occurrence, but hidden nuggets of gold await
 - > *You Don't Know Jack*, Pixar's movies, and yet another pirate reference...



Insult swordfighting from The Secret of Monkey Island

Making Rules Summary

- Charting rules is a tough but rewarding process
 - it becomes easier as more examples exist
 - rules suggest other rules, or trumping exceptions
 - clusters of rules provide insight into design truths
- Many designers have already contributed
 - we invite others to do the same
 - specific contributors noted on our web sites
- Eventually we will explore and map the territory



BREAKING RULES

Breaking Rules

- Rules aren't perfect —
 - they conflict with each other
 - they override each other
- Inner contradictions prove they are not fundamental laws that must be obeyed —
 - Rule of Gravity: What goes up must come down
 - Law of Gravity: Einstein's General Relativity

Breaking Rules

- If a rule allows some arrangements & forecloses others, breaking that rule will produce a genuine difference —
 - break rules to improve
 - break rules to innovate
- Avoid being vague —
 - if you're not right, at least be wrong!

Breaking Rules

- If a rule is...

Of
di

"This is not right. It's so vague,
it is not even wrong."

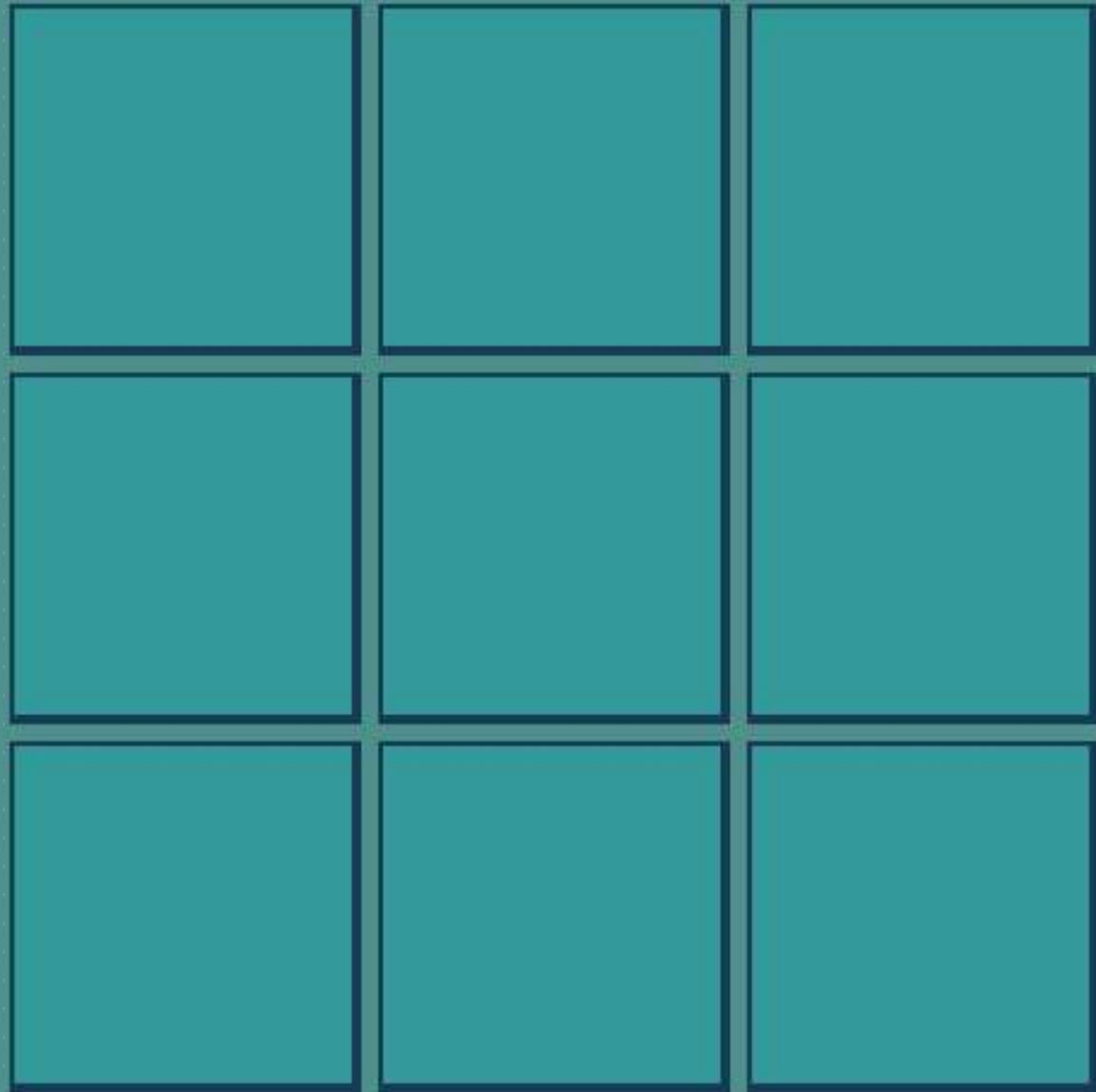
-- Wolfgang Pauli
*one variant among many
of his famous quote*

- Av

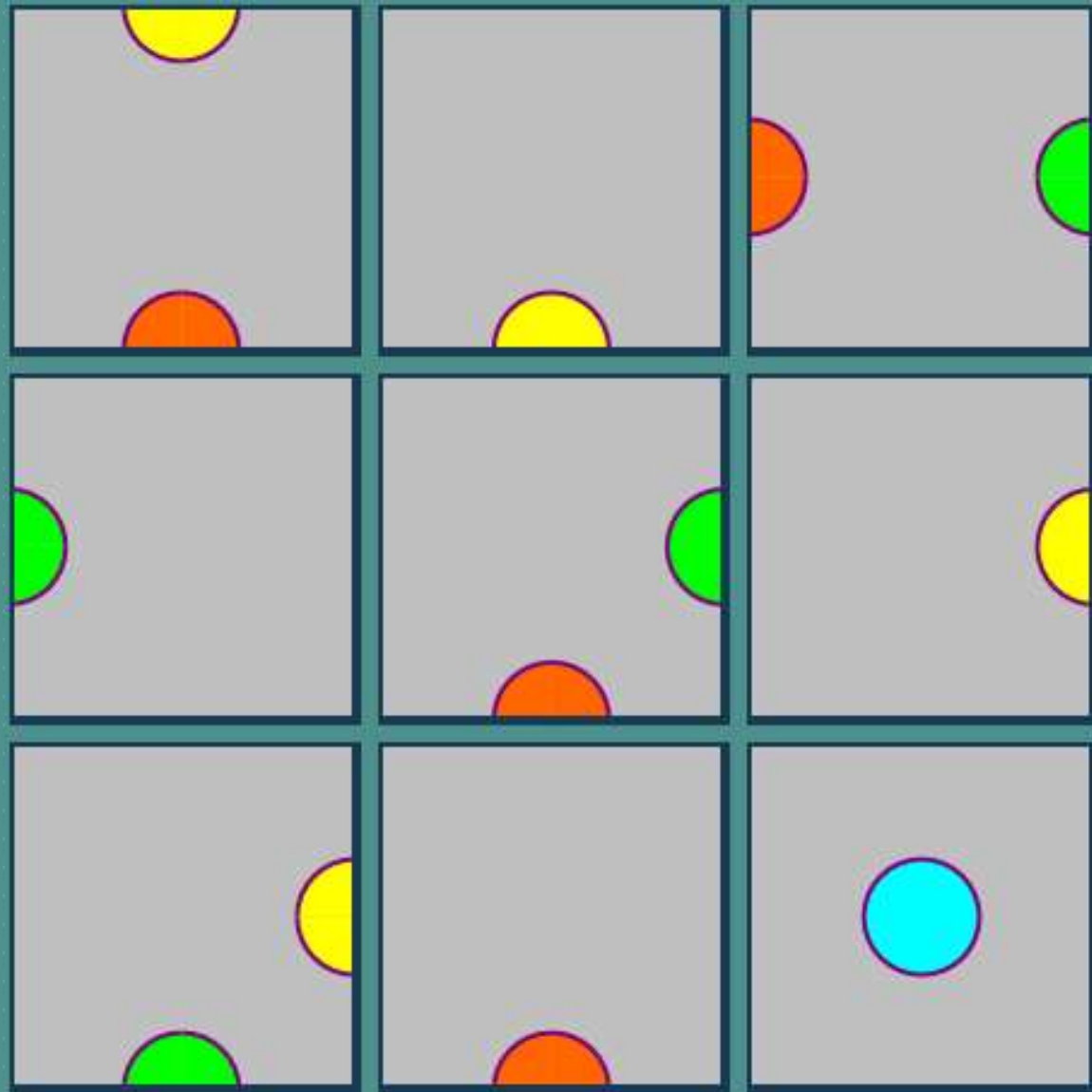
.



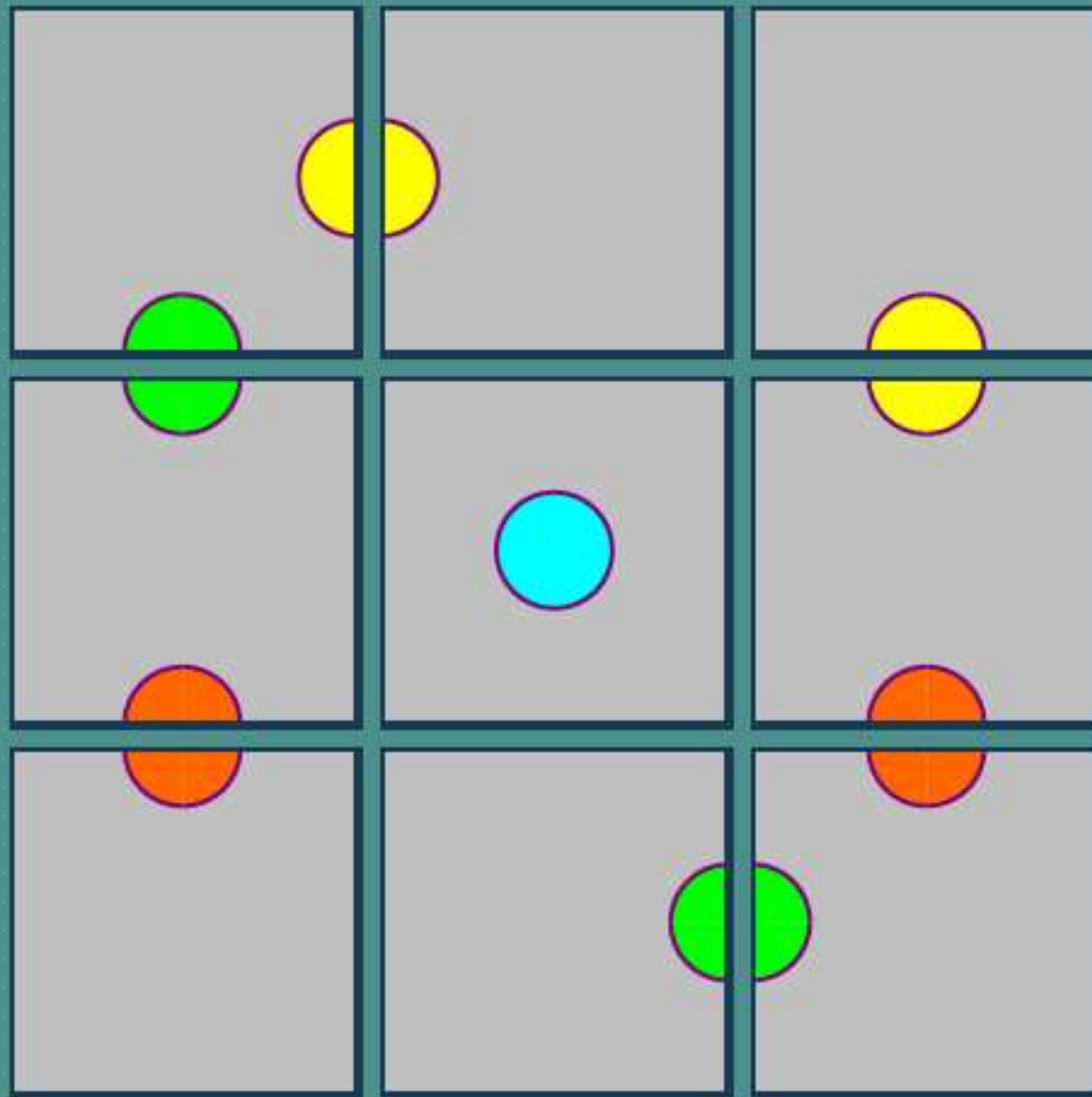
Basketball — the 3-point rule



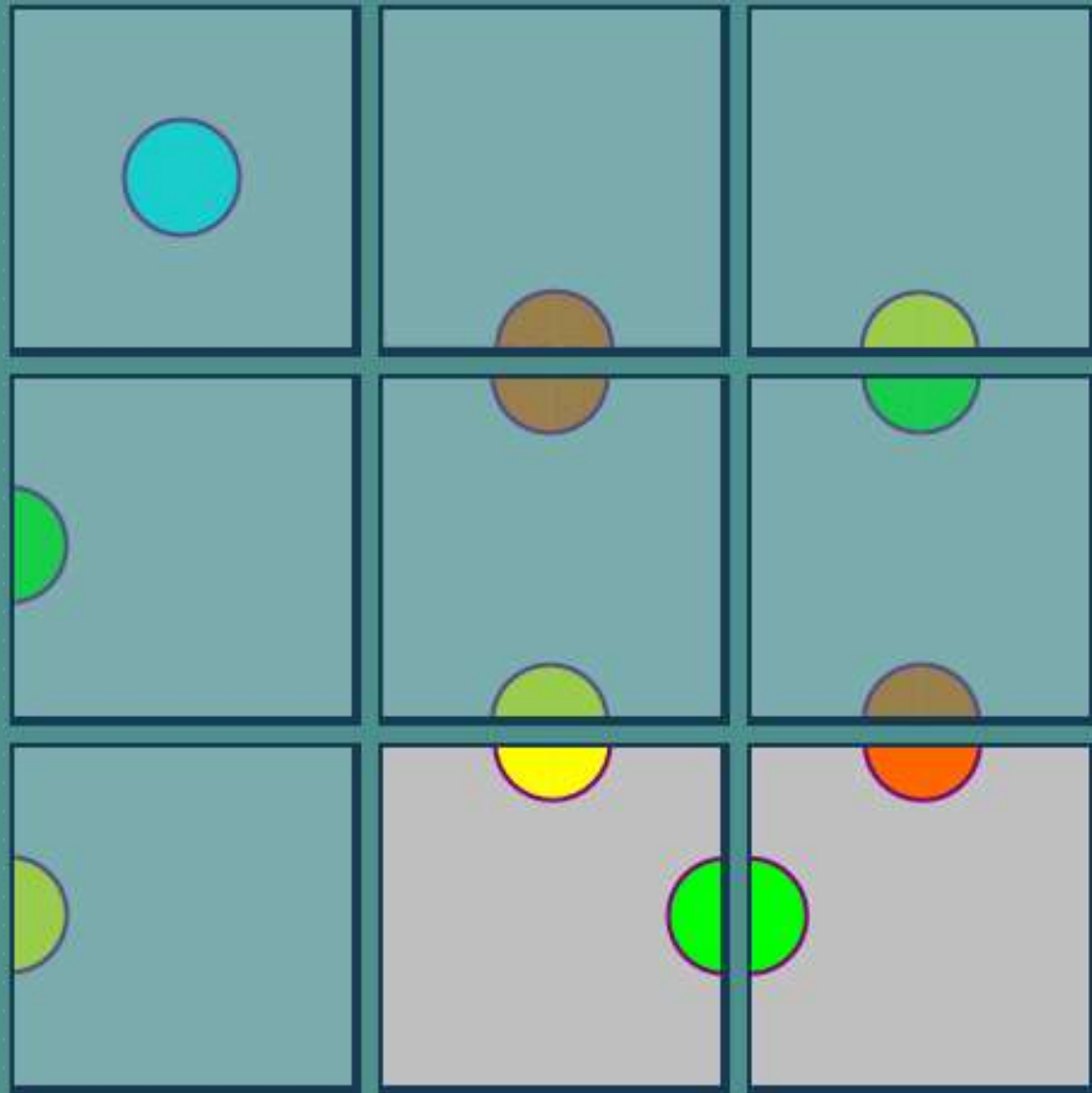
Scramble Squares — a metaphor for video games



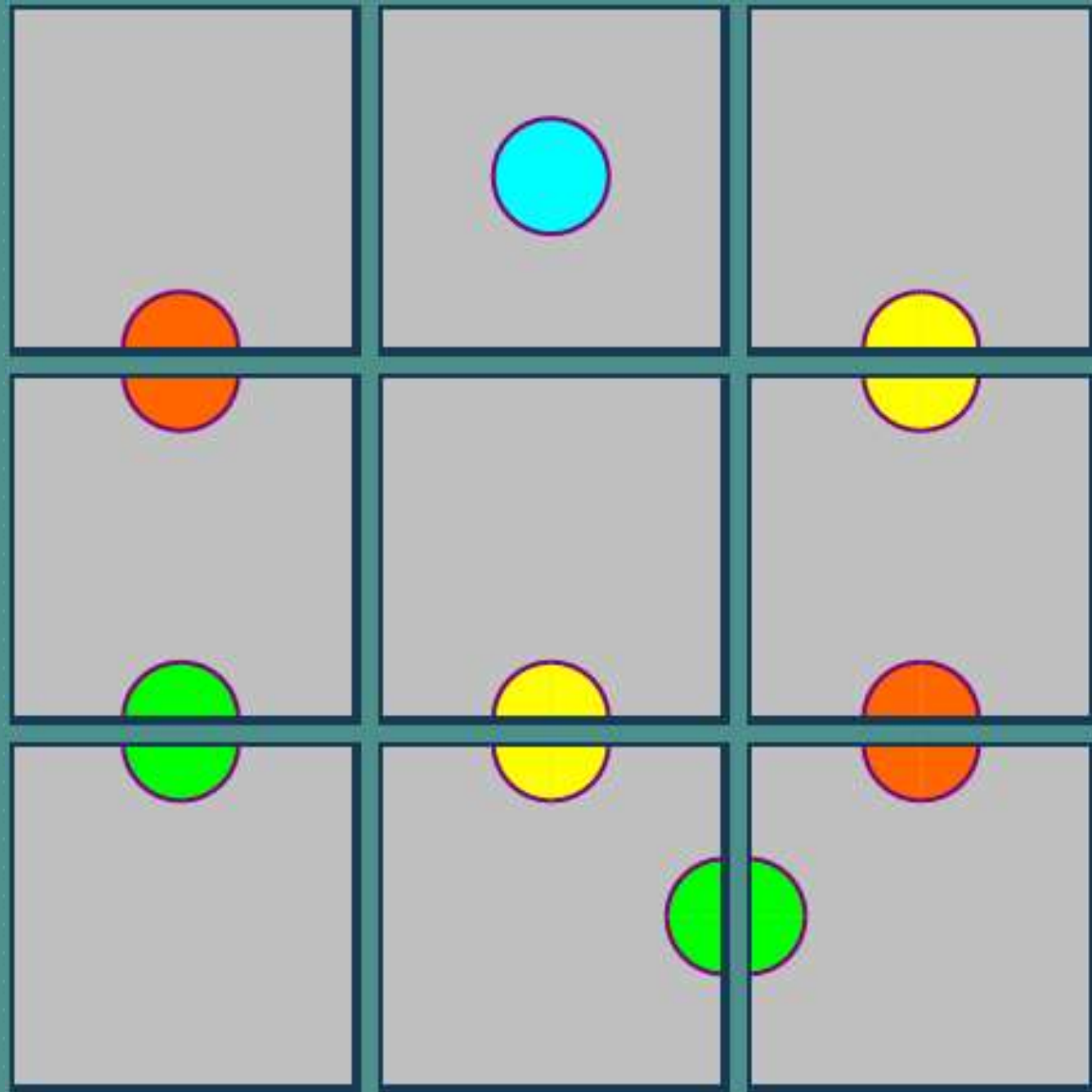
Scramble Squares — constraint satisfaction problem



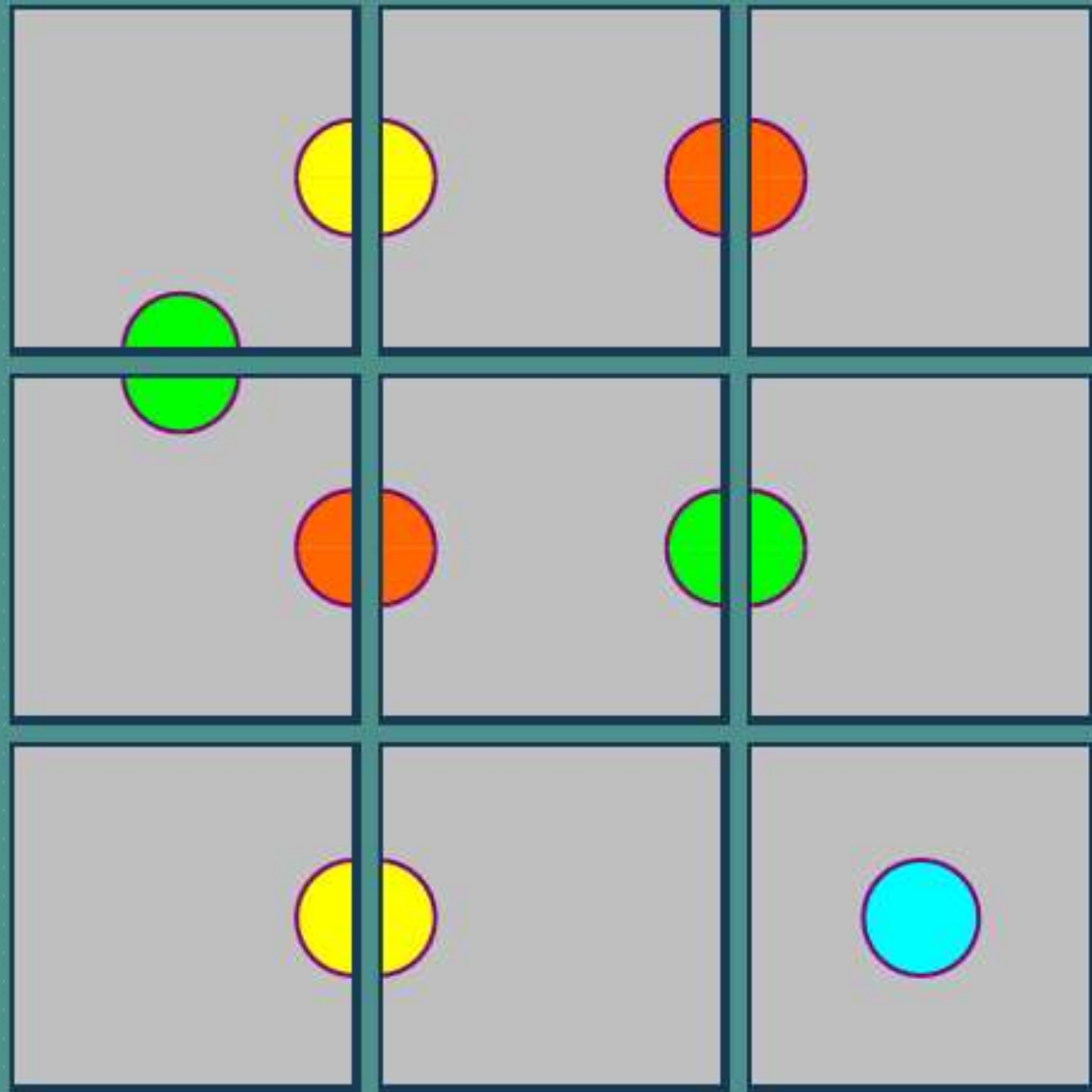
Scramble Squares — algorithm checks 30G positions



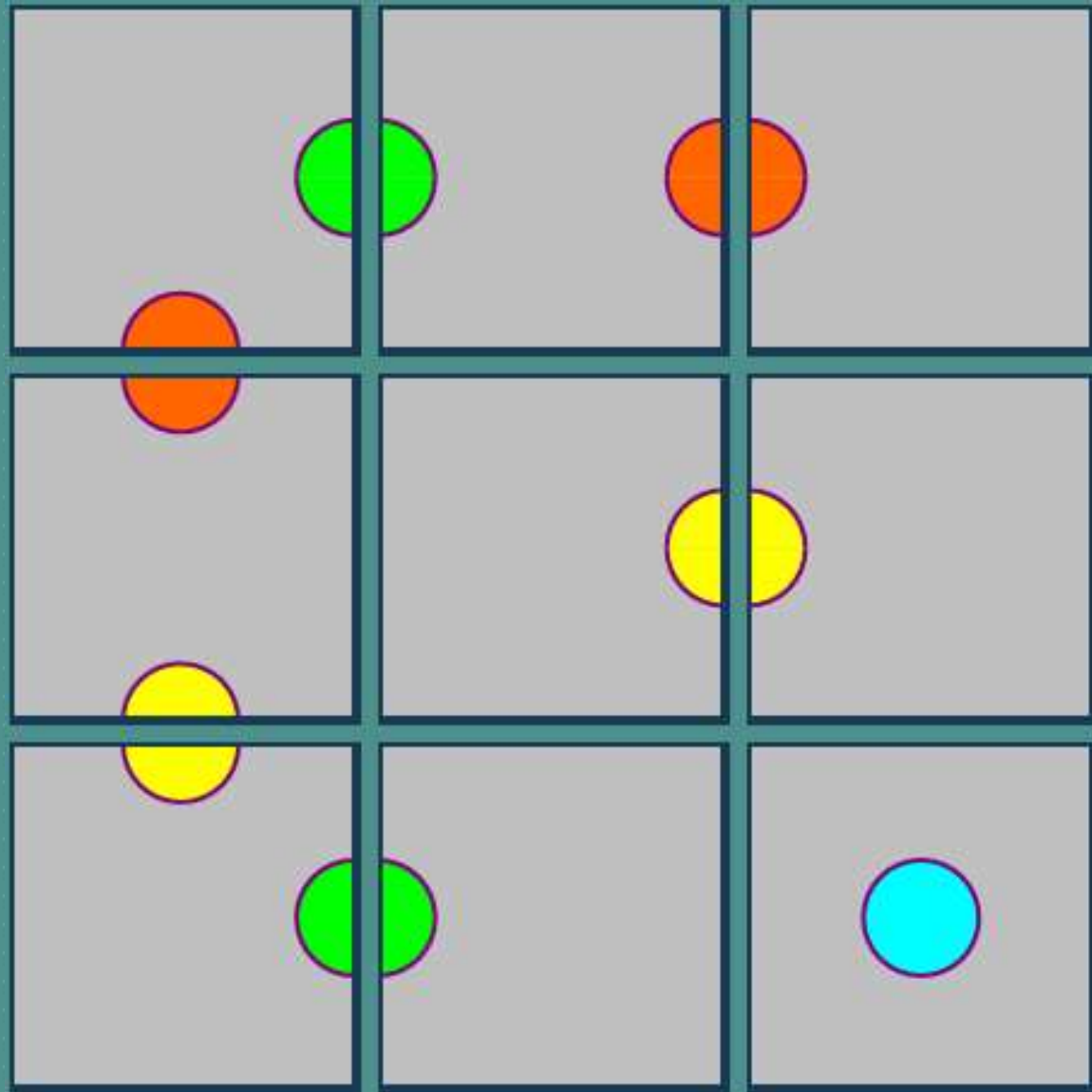
Metaphor — the “pivot” pair design element



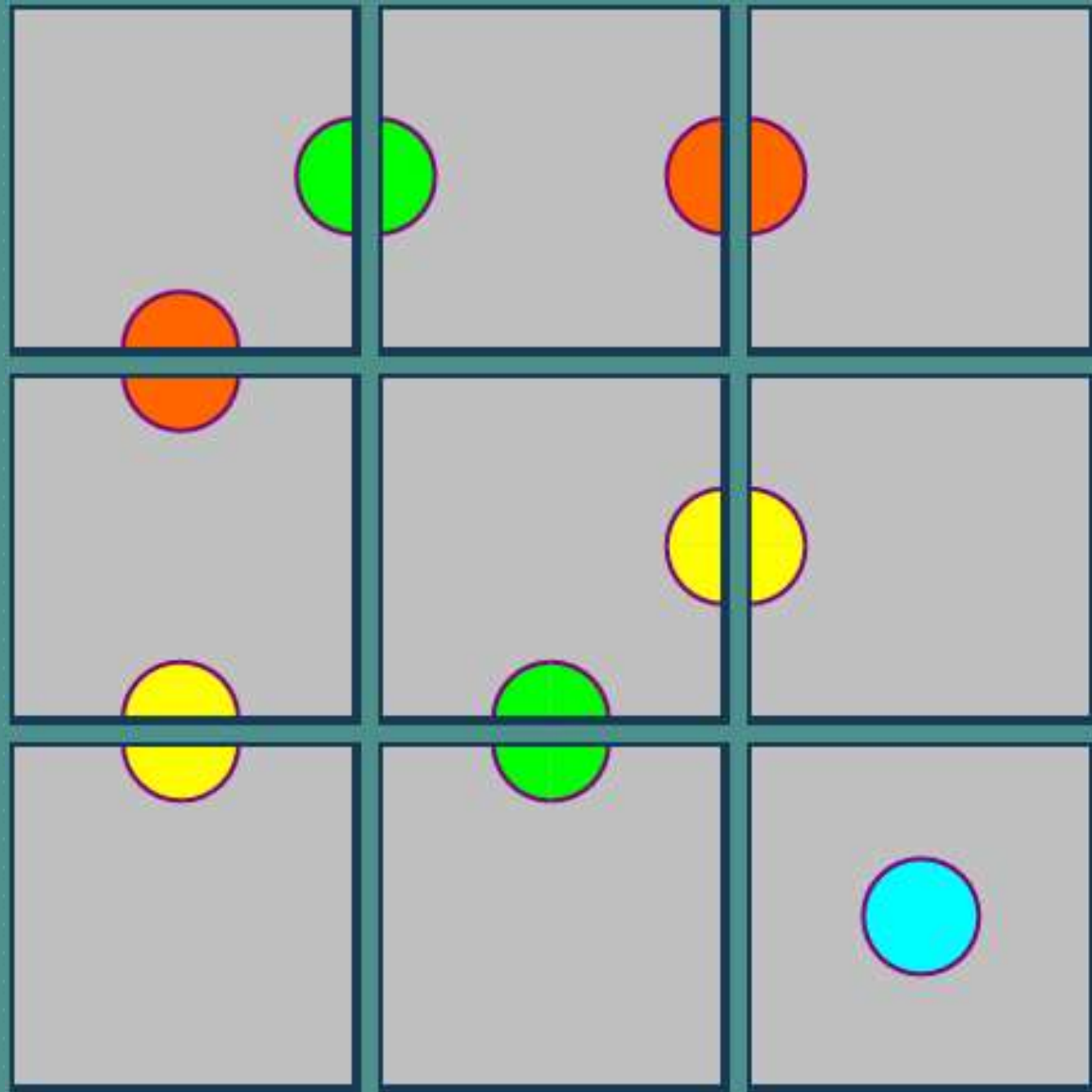
Metaphor — pivot rule \rightarrow multiple solutions



Metaphor — pivot rule \rightarrow multiple solutions



Metaphor — break rule → more solutions



Metaphor — break rule → more solutions

115 Make Material Talk to You

- Engage in a dialogue with your design —
 - ask what it wants to do
 - force it to squawk by applying rules that force definitive choices
 - observe how it accepts or resists
 - > this is a meta-rule, a way of applying other rules to observe if they clarify design problems
 - > related to “paint out the eyes” and the local maximum concept

115 Make Material Talk to You

“Zena, thoughts are formless, coded... impulses without shape or substance or direction - until you convey them to someone else. Then they precipitate, and become ideas that you can put on the table and examine. You don't know what you think until you tell someone else about it.”

-- Theodore Sturgeon
The Synthetic Man



Red Rock — rule-breaking example



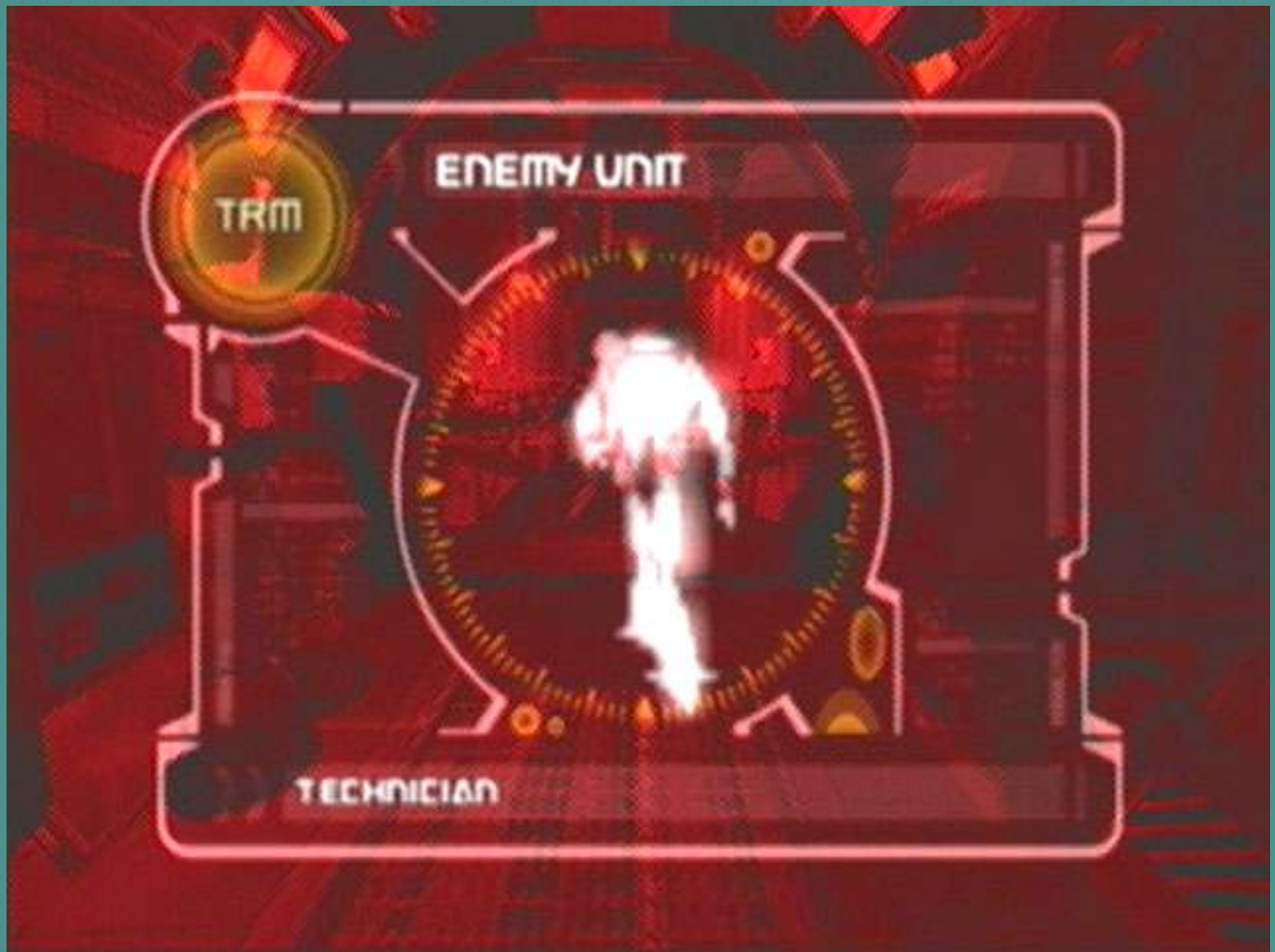
Alien Techs — design failure to deform world



Alien Techs — re-purposed to deadly invisibility



Alien Techs — function with hero infrared vision



Alien Techs — nicely unite game elements



www.theinspiracy.com

www.finitearts.com

Where to find rules

References —

www.theinspiracy.com

www.finitearts.com

Christopher Alexander, et al.; *A Pattern Language: Towns, Buildings, Construction*;
Center for Environmental Structure; 1977; ISBN = 1-19-501919-9

Staffan Bjork & Jussi Holopainen; *Patterns in Game Design*;
Charles River Media; 2005; ISBN = 1-58450-354-8

Keith Brandt, et al.: *Using Backtracking to Solve the Scramble Squares® Puzzle*;
Rockhurst University; 2002; e-mail: keith.brandt@rockhurst.edu

James Paul Gee; *What Video Games Have to Teach Us About Learning & Literacy*
Palgrave/Macmillan; 2003; ISBN = 1-4039-6169-7

Malcolm Gladwell; *Blink — The Power of Thinking Without Thinking*;
Little, Brown; 2005; ISBN = 0-316-17232-4

George Orwell; *Politics and the English Language*;
essay from compilation, *The Orwell Reader*;
Harcourt, Brace; 1956; ISBN = none available

Steven Pinker; *Words and Rules*;
Basic Books; 1999; ISBN = 0-465-07269-0

Pirate Code discussion see www.bonaventure.org.uk/ed/code.htm
& www.thepiratesrealm.com/pirate%20articles.html

various illustrations from games and movies credited as they appear