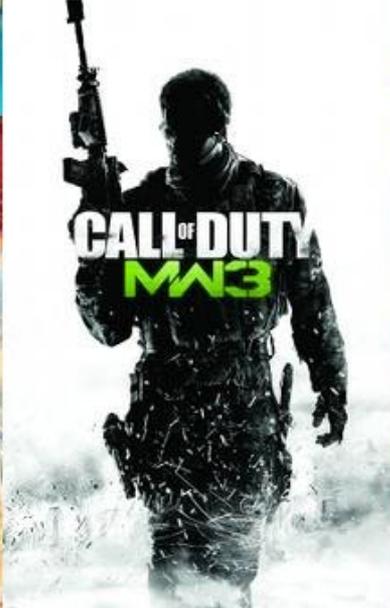


GROUNDING the IMPOSSIBLE

Pushing Creativity in VFX

Jeremy Griffith, Senior VFX Artist at Riot Games



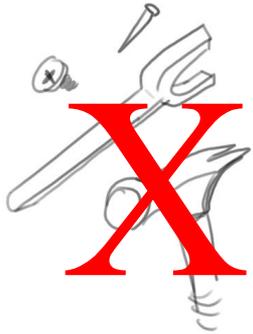


Not so much **TECHNICAL** as...





Not so much **TECHNICAL** as...



CONCEPTUAL





THINKING

THINKING is part of the pipeline

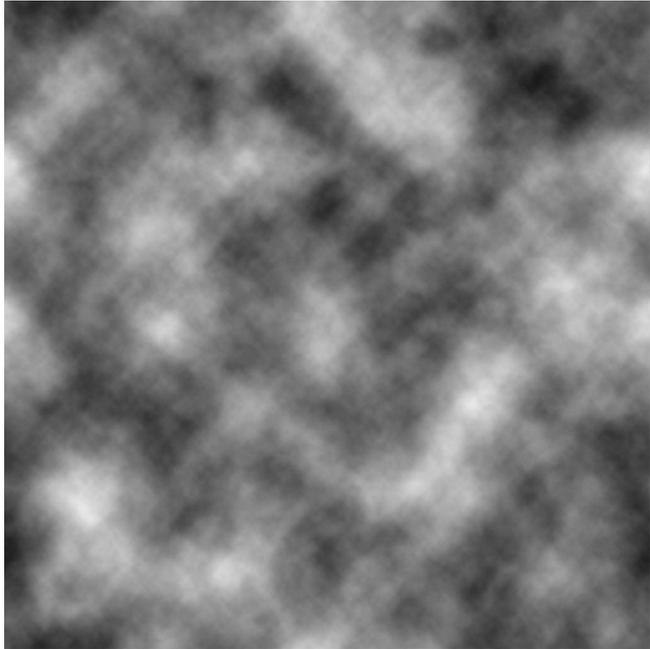


THINKING is part of the pipeline

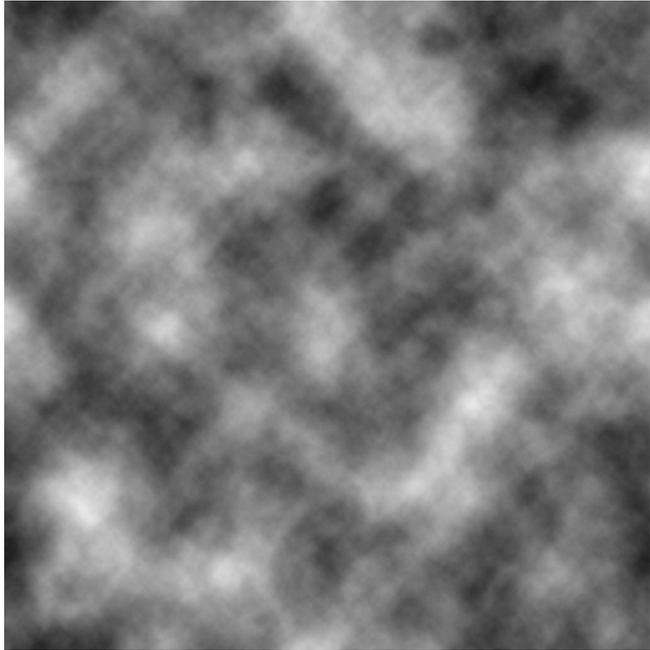
...and will help you be more **CREATIVE**



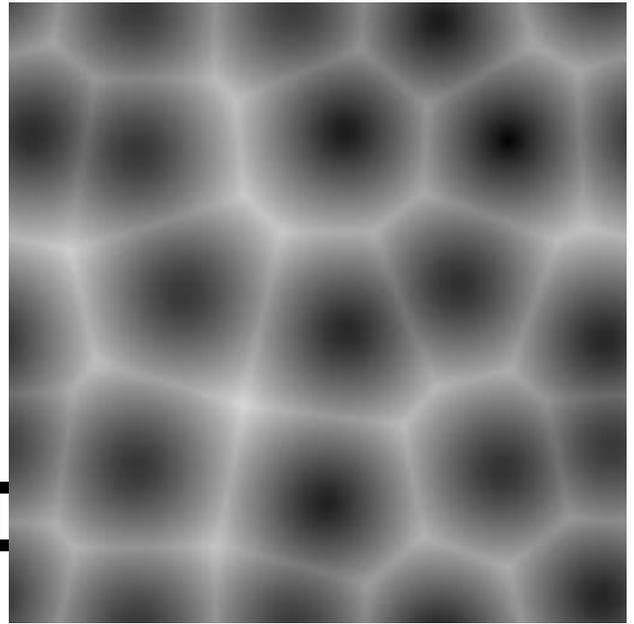
VFX is HARD



VFX is HARD

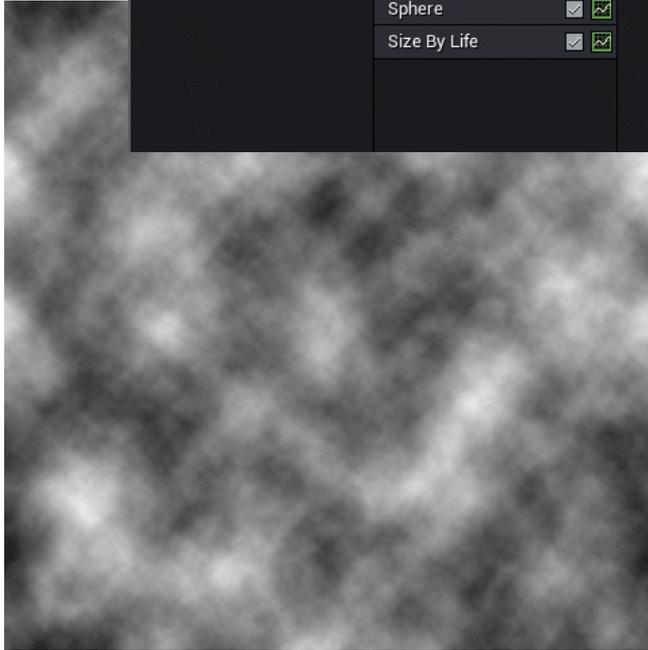


VFX is HARD

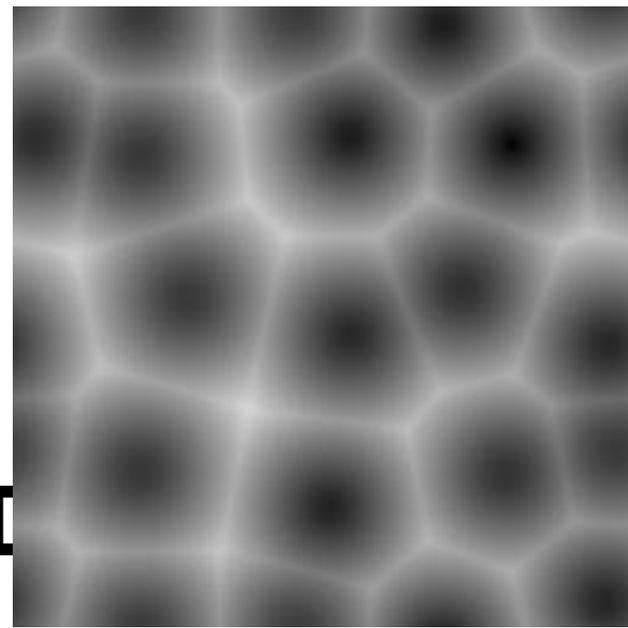




| Mesh Data | Mesh Data | Mesh Data | Mesh Data |
|--|--|--|-------------------|
| Required | Required | Required | Required |
| Spawn <input checked="" type="checkbox"/> | Spawn <input checked="" type="checkbox"/> | Spawn <input checked="" type="checkbox"/> | Spawn |
| Lifetime <input checked="" type="checkbox"/> | Lifetime <input checked="" type="checkbox"/> | Lifetime <input checked="" type="checkbox"/> | Lifetime |
| Initial Size <input checked="" type="checkbox"/> | Initial Size <input checked="" type="checkbox"/> | Initial Size <input checked="" type="checkbox"/> | Initial Size |
| Color Over Life <input checked="" type="checkbox"/> | Initial Velocity <input checked="" type="checkbox"/> | Color Over Life <input checked="" type="checkbox"/> | Color Over Life |
| Init Mesh Rotation <input checked="" type="checkbox"/> | Color Over Life <input checked="" type="checkbox"/> | Init Mesh Rotation <input checked="" type="checkbox"/> | Init Mesh Rotatio |
| Dynamic <input checked="" type="checkbox"/> | Initial Rotation <input checked="" type="checkbox"/> | Dynamic <input checked="" type="checkbox"/> | Dynamic |
| Size By Life <input checked="" type="checkbox"/> | Dynamic <input checked="" type="checkbox"/> | | |
| | Sphere <input checked="" type="checkbox"/> | | |
| | Size By Life <input checked="" type="checkbox"/> | | |

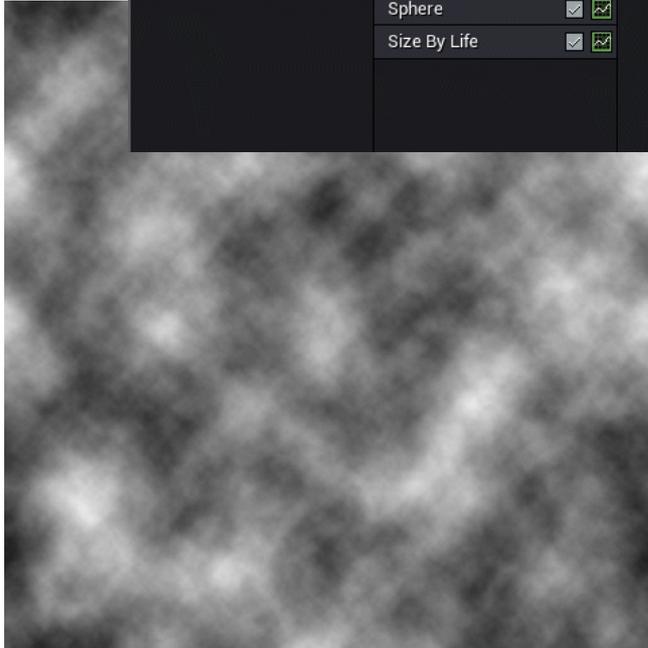
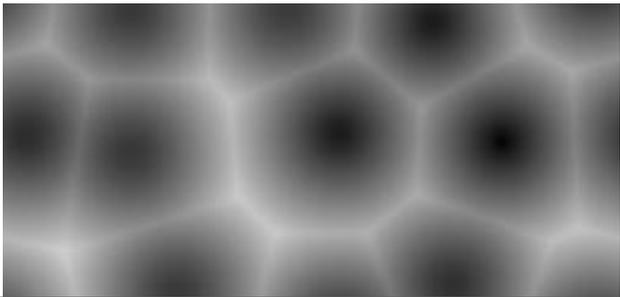


TEXT IS HARD





| Mesh Data | Required | Required | Required | Required |
|--------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Spawn | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Lifetime | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Initial Size | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Color Over Life | <input checked="" type="checkbox"/> | Initial Velocity | <input checked="" type="checkbox"/> | Color Over Life |
| Init Mesh Rotation | <input checked="" type="checkbox"/> | Color Over Life | <input checked="" type="checkbox"/> | Init Mesh Rotation |
| Dynamic | <input checked="" type="checkbox"/> | Initial Rotation | <input checked="" type="checkbox"/> | Dynamic |
| Size By Life | <input checked="" type="checkbox"/> | Dynamic | <input checked="" type="checkbox"/> | Size By Life |
| | | Sphere | <input checked="" type="checkbox"/> | |
| | | Size By Life | <input checked="" type="checkbox"/> | |

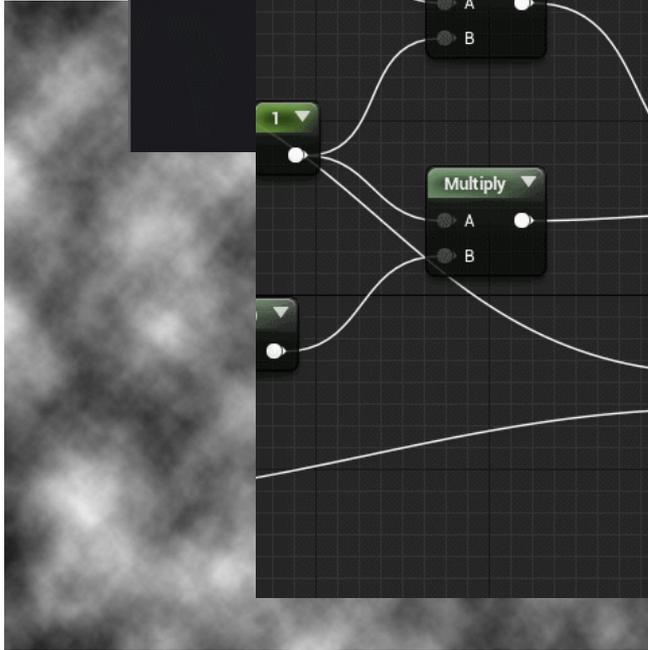
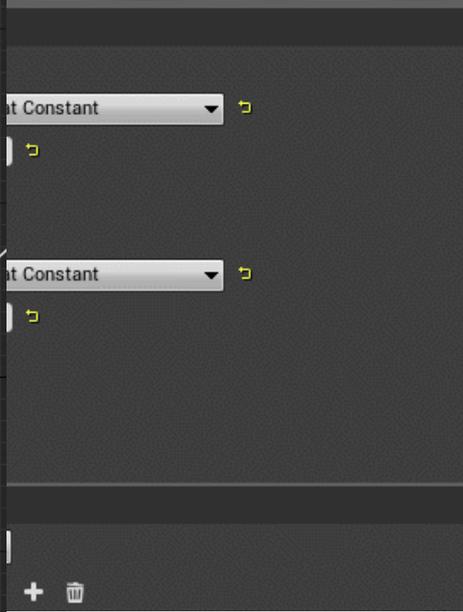
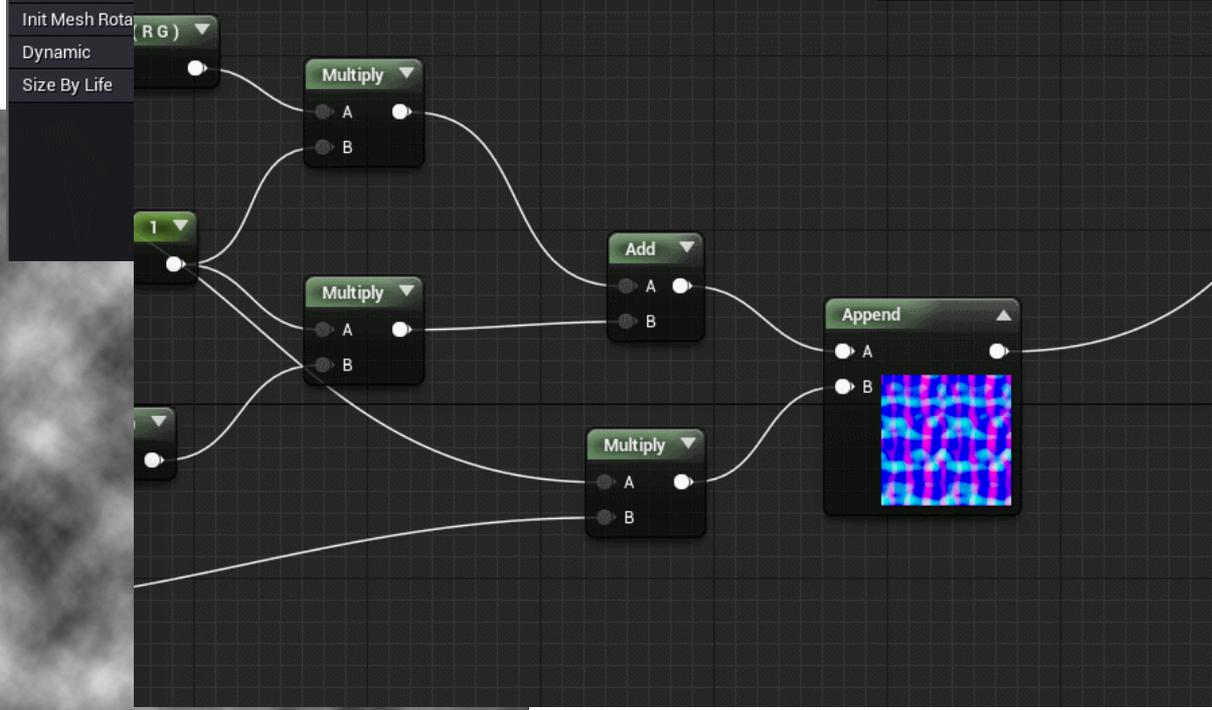
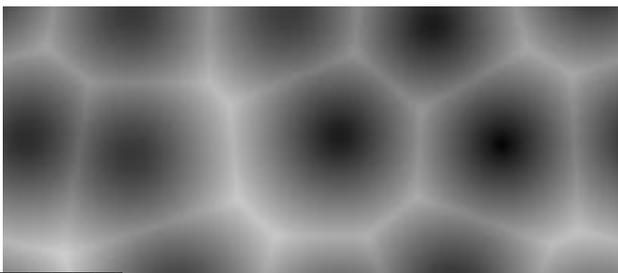


Spawn

- Rate
 - Distribution
 - Constant: 20.0
 - Can be Baked:
 - Rate Scale
 - Distribution
 - Constant: 1.0
 - Can be Baked:
 - Apply Global Spawn Rate Scale:
 - Process Spawn Rate:
- Burst
 - Particle Burst Method: Instant
 - Burst List: 0 Array elements



| Mesh Data | Mesh Data | Mesh Data | Mesh Data |
|-----------------|------------------|-----------------|-----------------|
| Required | Required | Required | Required |
| Spawn | Spawn | Spawn | Spawn |
| Lifetime | Lifetime | Lifetime | Lifetime |
| Initial Size | Initial Size | Initial Size | Initial Size |
| Color Over Life | Initial Velocity | Color Over Life | Color Over Life |





| Mesh Data | Mesh Data | Mesh Data |
|-----------------|------------------|-----------------|
| Required | Required | Required |
| Spawn | Spawn | Spawn |
| Lifetime | Lifetime | Lifetime |
| Initial Size | Initial Size | Initial Size |
| Color Over Life | Initial Velocity | Color Over Life |
| Init Mesh Rota | | |
| Dynamic | | |
| Size By Life | | |

RG

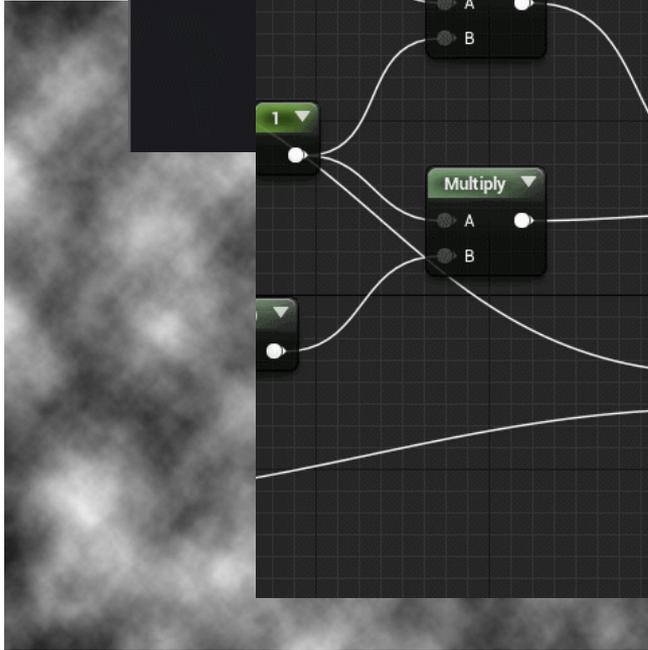
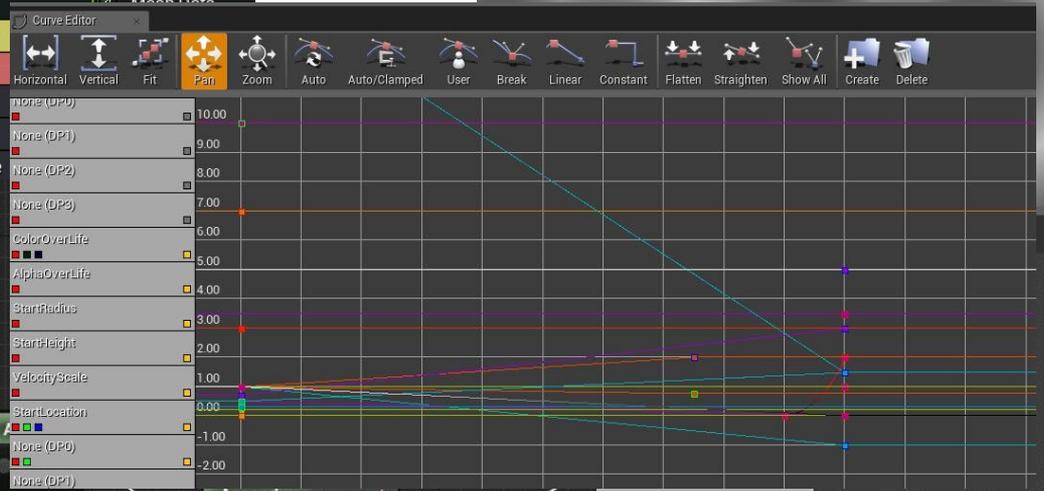
Multiply

Multiply

Multiply

Multiply

Append





Perspective Shader Complexity Show

Mesh Data

Required

Spawn

Lifetime

Initial Size

Color Over Life

Init Mesh Ro

Dynamic

Size By L

Editor

500

10"

0.25

4

0

Good

Bad

P.S

MaxShaderComplexityCount=2000

Extremely bad

us

Mesh Data

Editor

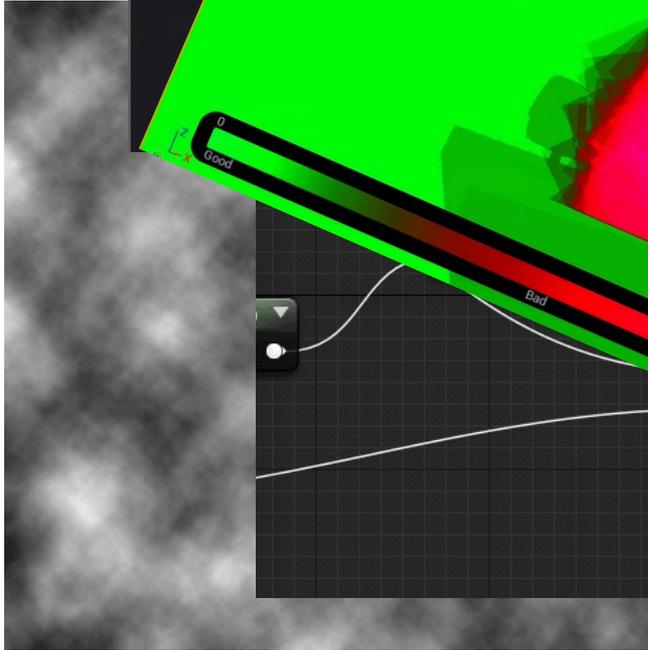
Plan Zoom Auto Auto/Clamped User Break Linear Constant Flatten Straighten Show All Create Delete

500

10"

0.25

4



FPS: 12

Mesh Data

Required

Spawn

Lifetime

Initial Size

Color Over Life

Init Mesh Ro

Dynamic

Size By L

Perspective Shader Complexity Show

Mesh Data Editor



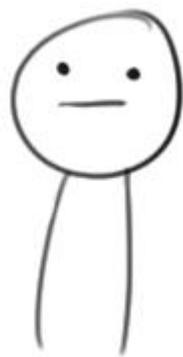
MaxShaderComplexityCount=2000
Extremely bad



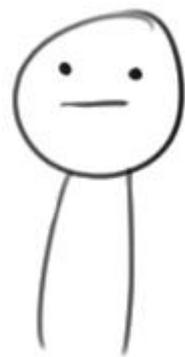
How to keep track of a million pieces?

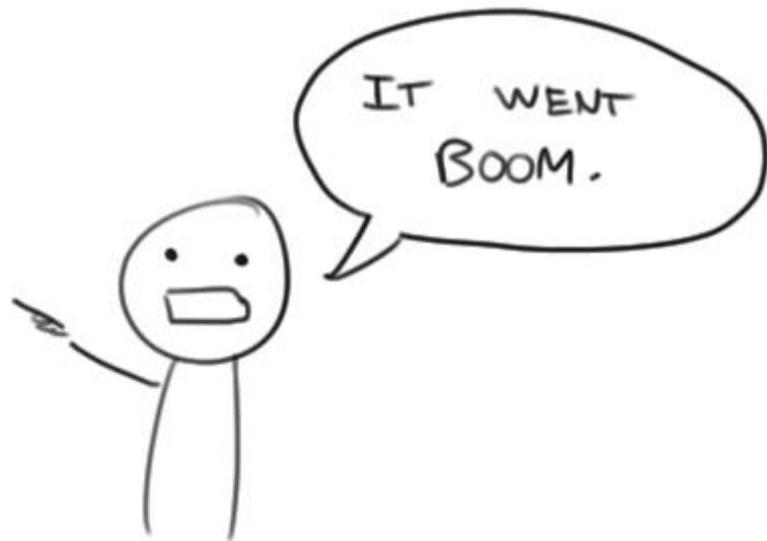


VFX is STORYTELLING









IT WENT
BOOM.



VFX is STORYTELLING

Help keep a vision of the **whole**.

THIS TALK

- A **tool box** for thinking more creatively about vfx
 - 4 tools
 - “Motivate Your Magic”
 - “Story Structure for VFX”
 - “Exaggerating the Juice”
 - “Study Everything”

THIS TALK

- A **tool box** for thinking more creatively about vfx
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 - “Motivate Your Magic”
 - “Story Structure for VFX”
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- A framework to see yourself as an active participant in **creative problem solving** on your project

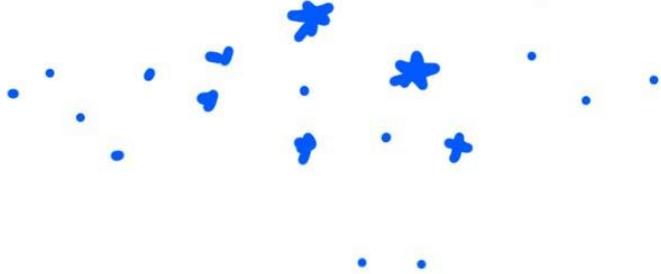
THIS TALK

- A **tool box** for thinking more creatively about vfx
 - 4 tools
 - “Motivate Your Magic”
 - “Story Structure for VFX”
 - “Exaggerating the Juice”
 - “Study Everything”
- A framework to see yourself as an active participant in **creative problem solving** on your project
- Lots of **GIFs**

CW: body horror

Tool 1

MOTIVATE
YOUR
MAGIC

A collection of small blue decorative elements, including stars and dots, arranged in a scattered pattern below the word 'MAGIC'.

KNOW how your VFX *work* in relation
the game world.

BE SPECIFIC

That's not just a challenge!



That's not just a challenge!

It's an **OPPORTUNITY.**



ABSTRACT RULES



CONCRETE WORLD



ABSTRACT RULES

**“LUDO-NARRATIVE
DISSONANCE”**

CONCRETE WORLD



ABSTRACT RULES



CONCRETE WORLD



ABSTRACT RULES

VFX

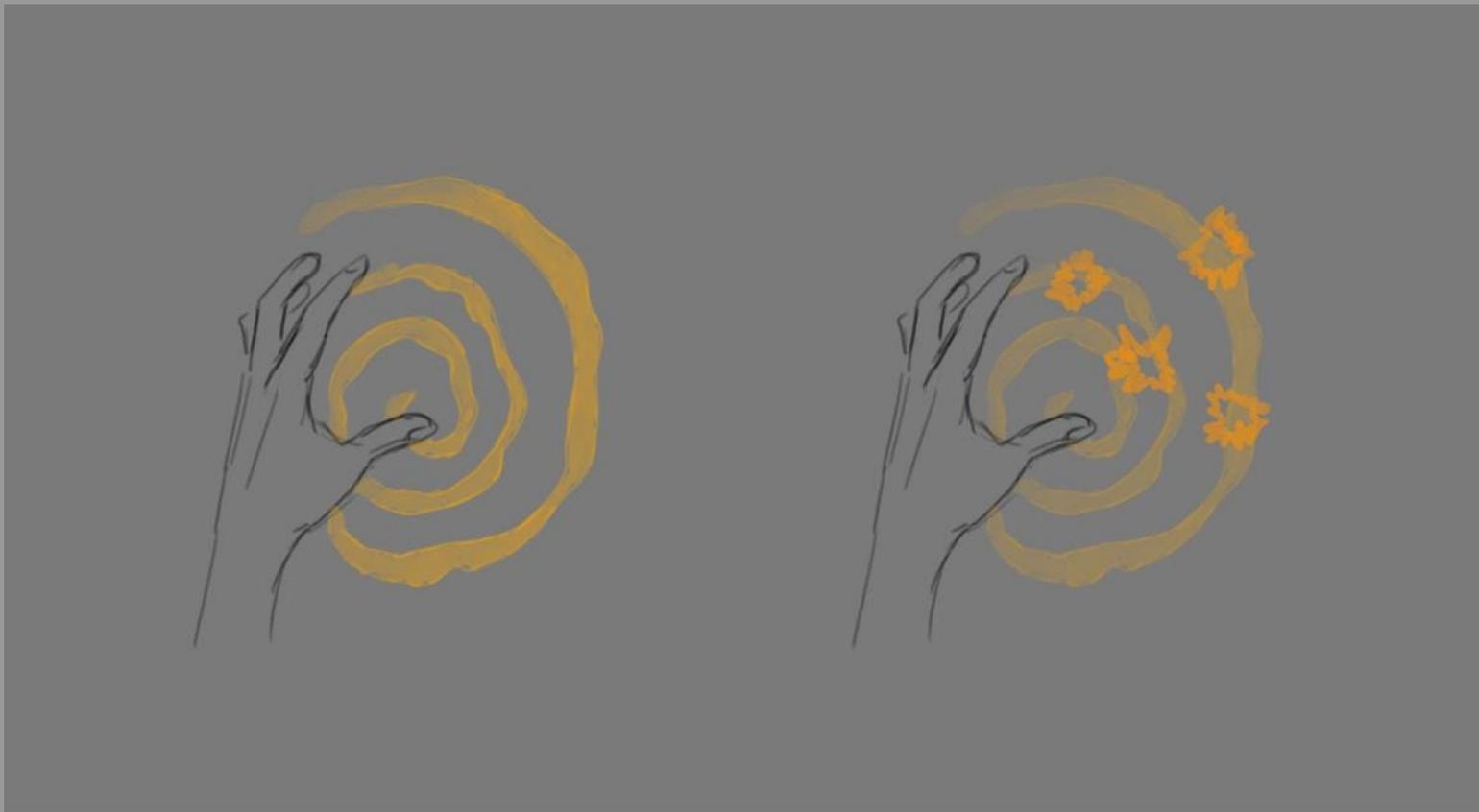
CONCRETE WORLD

Case study: **“Return to Sender”**

Problem introduction:

Problem introduction:

Make **ABSTRACT** damage reduction
into a **CONCRETE** thematic.



Two common problems:

“color shapes” and “lazy symbolism”



ABSTRACT RULES

VFX

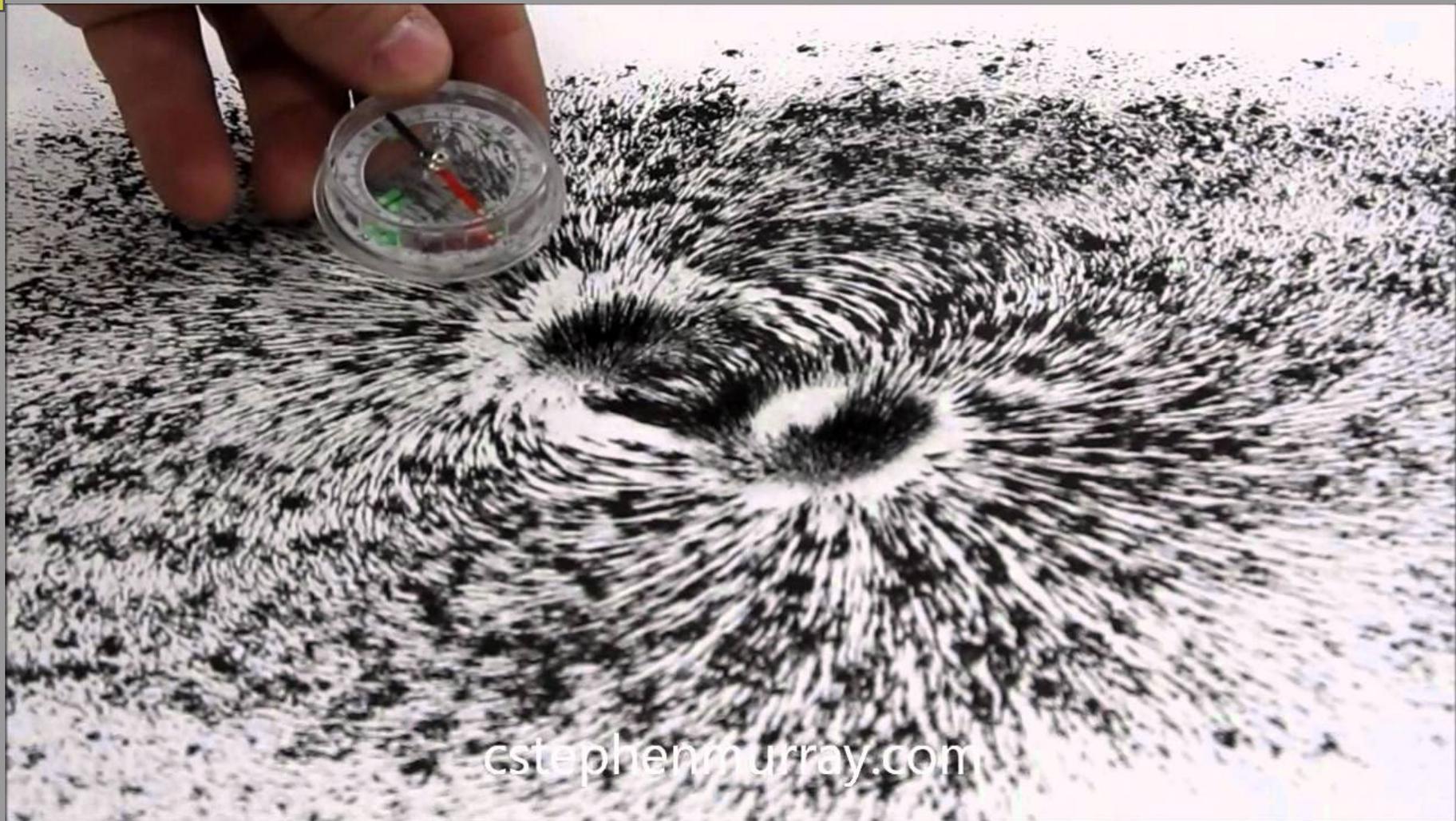
CONCRETE WORLD



VFX Art Direction in *Bioshock: Infinite*:

Power *without* “magic”

Defensive shield *without magic*.



cstephenmurray.com







Case Study: **“Possession”**

Problem Introduction:

Problem Introduction:

How to *physically ground* a ghost?

ECTOPLASM

PERIOD REFERENCE

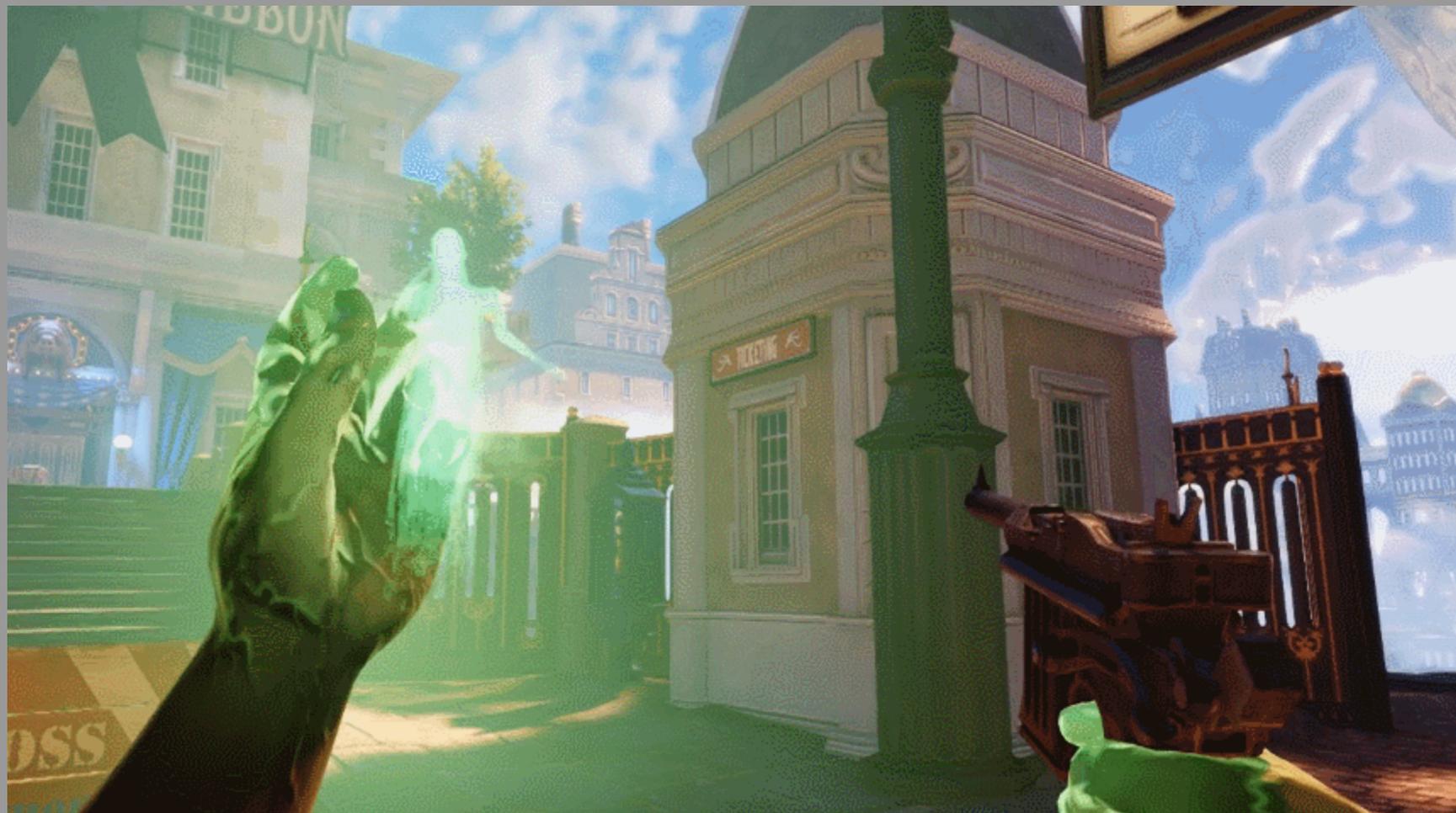




MORE RECENT REFERENCE









BUT:

Even a single lick of flame
deserves **specificity**.















KCCI.com
KCCI





SUBSCRIBE

Other media: *How to Train Your Dragon*













Being **SPECIFIC** creates room for

SUBTLE *yet CLEAR* **DISTINCTIONS**



SUBTLE DISTINCTIONS are useful for
COMMUNICATING STUFF.



SUBTLE DISTINCTIONS are useful for
COMMUNICATING **STORY.**



SUBTLE DISTINCTIONS are useful for
COMMUNICATING CHARACTER.



SUBTLE DISTINCTIONS are useful for
COMMUNICATING GAMEPLAY.

VAGUE is BORING

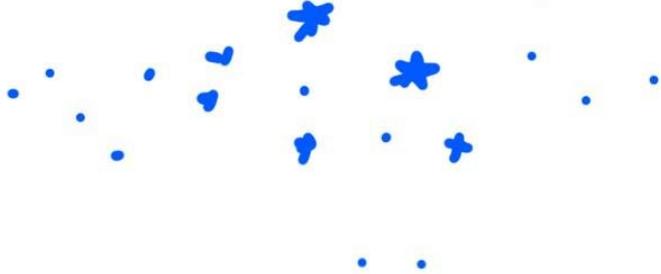
VAGUE is *not just* **BORING**



VAGUE is *not just* **BORING**
VAGUE is also **CONFUSING**

So BE SPECIFIC.

MOTIVATE
YOUR
MAGIC

A collection of small blue decorative elements, including stars and dots, arranged in a scattered pattern below the word 'MAGIC'.

Tool 2

Story Structure

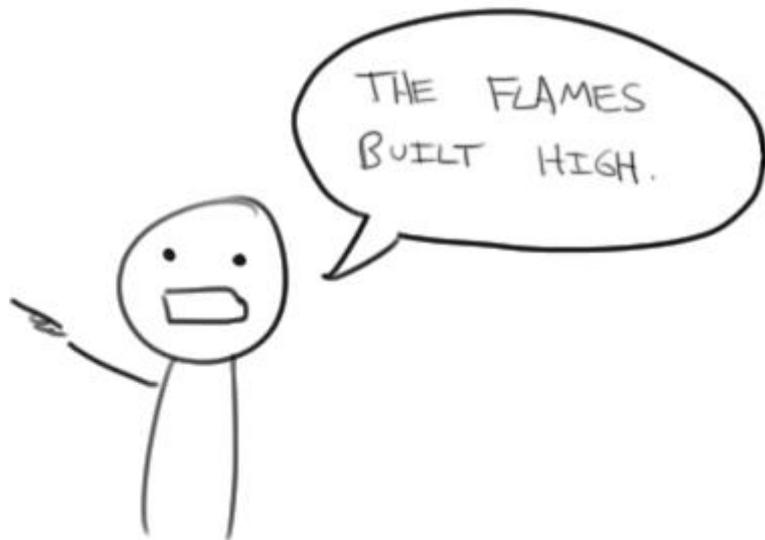
FOR **VFX**





Beginning, Middle, End





THE FLAMES
BUILT HIGH.

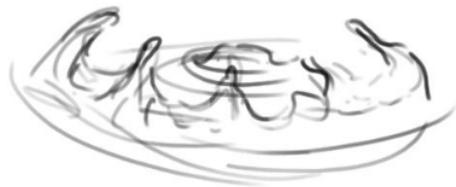


THE FLAMES
DIED AS THE
FUEL EXPIRED.





Enter Stage, Perform, Exit Stage





Anticipation, Action, Aftermath



Thinking in terms of story structure
also helps us ***be specific.***

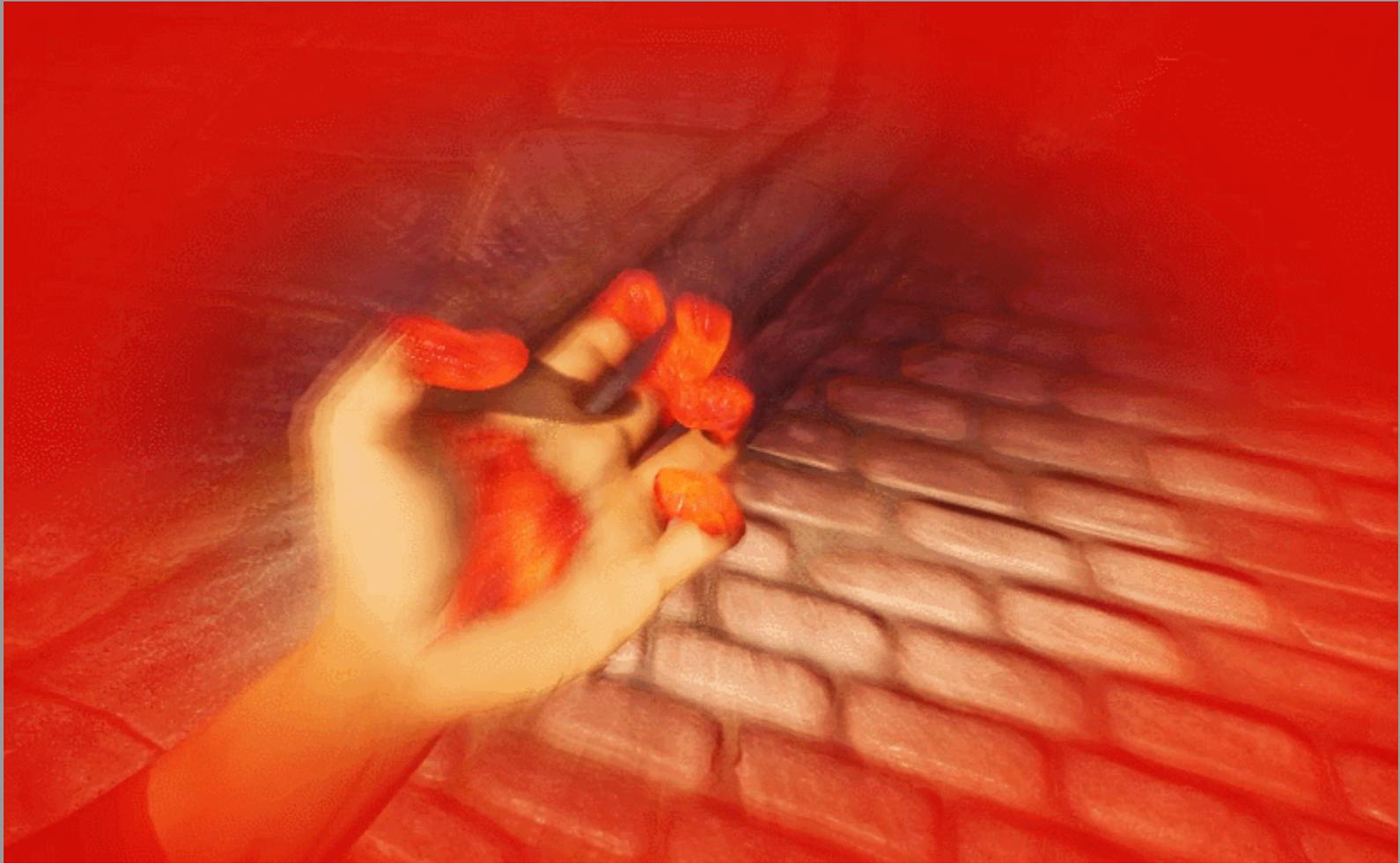
The **STORY** of what is **HAPPENING**

Case Study: **Devil's Kiss** intro

Case Study: **Devil's Kiss** intro

STORY BEATS



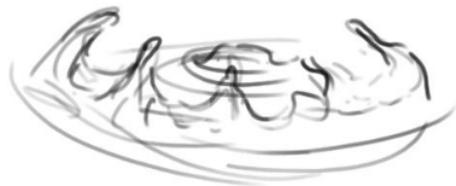






BUT:

Even in a single **puff of dust**
or **splash of water**
there is a multipart story.



ELEMENTAL MAGIC

The Art of Special Effects Animation



Joseph Gilland

Foreword by Michel Gagne



In other words, **KEY POSES**

In other words, **KEY POSES**

Anchors to organize your thinking.



SKETCHING = THINKING





SKETCHING = THINKING

Story Structure

FOR **VFX**

Tool 3

**EXAGGERATING
THE**

'JUICE'

Classic animation principle of
EXAGGERATION:

Classic animation principle of
EXAGGERATION:

SELECTIVE EMPHASIS

Case Study: **Handcannon**

Howcast.com



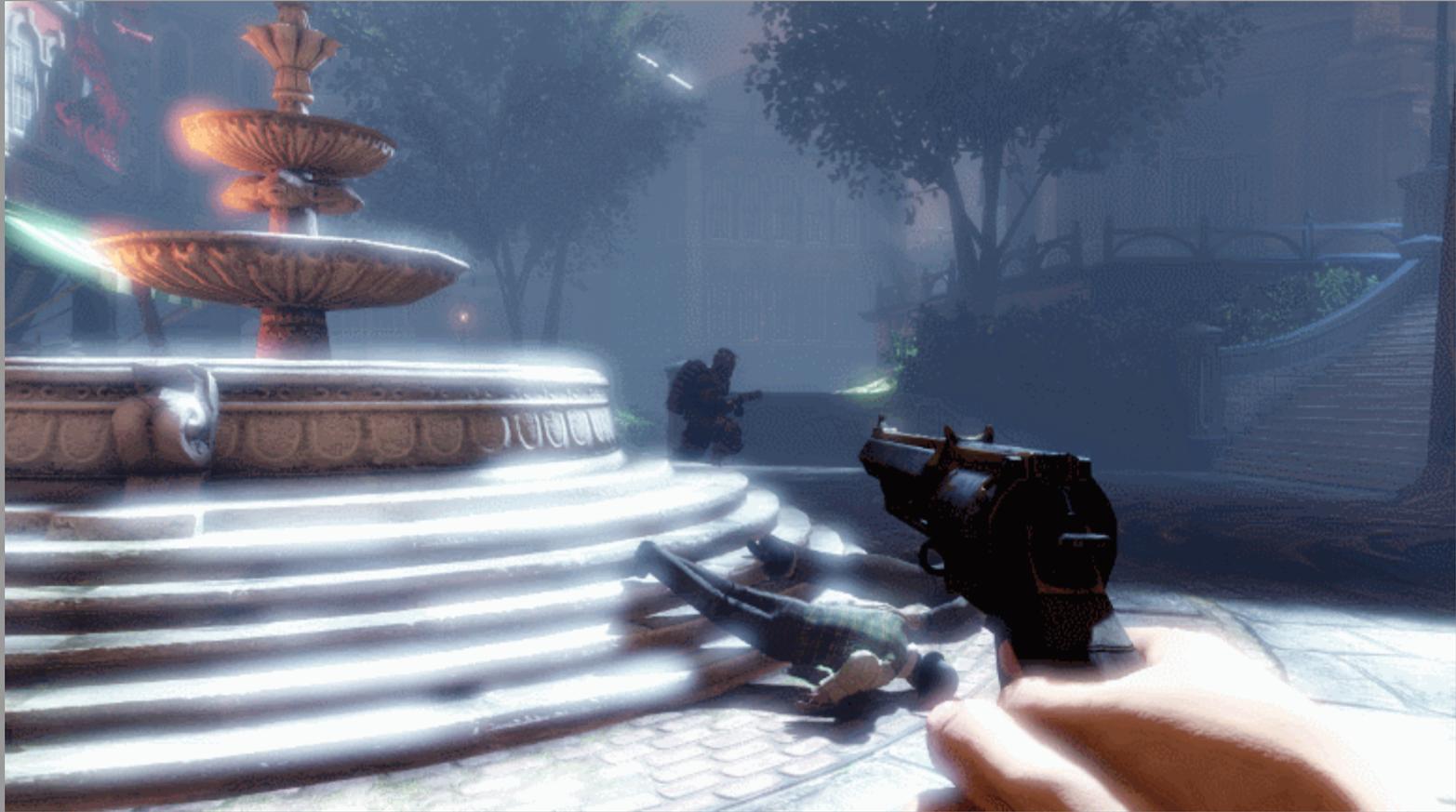










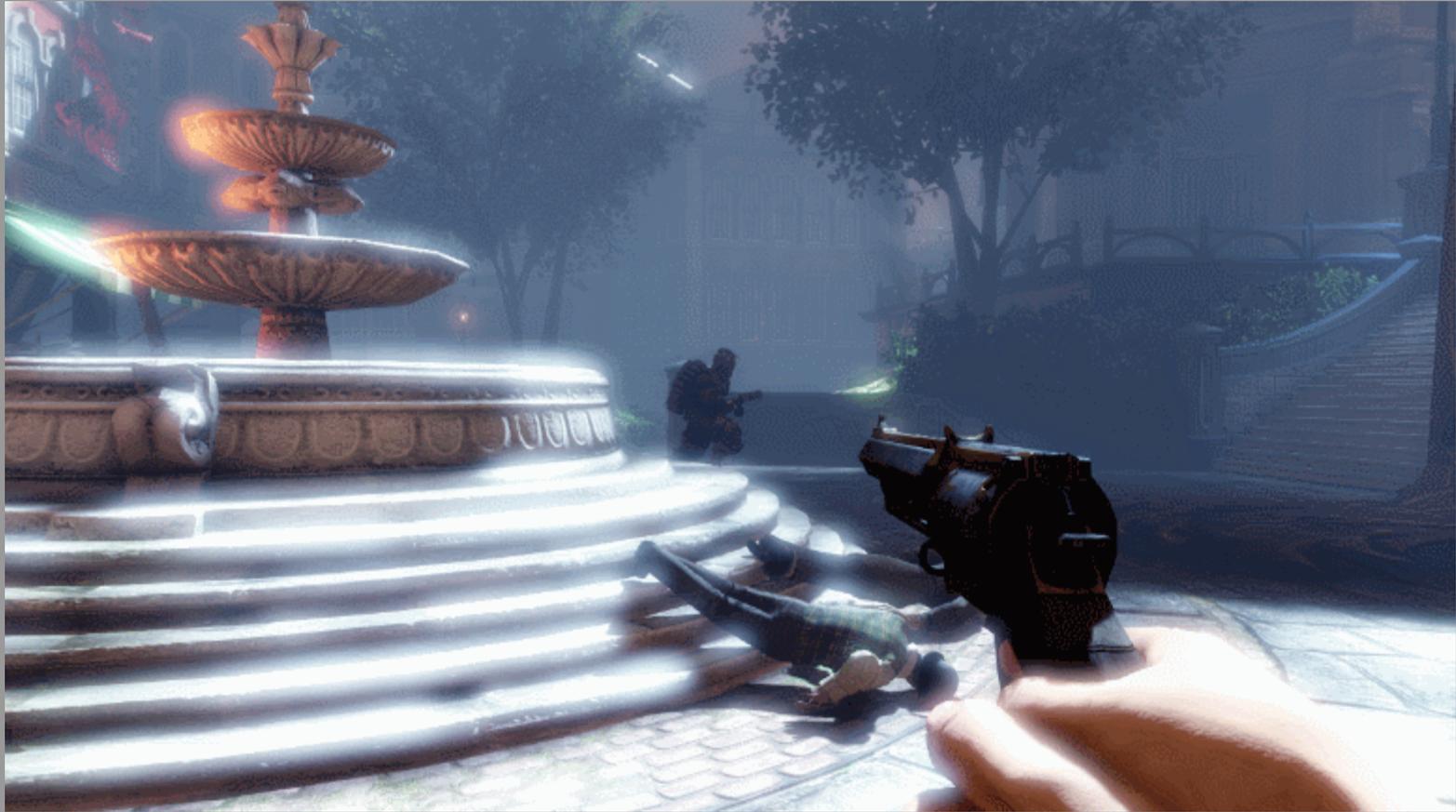




PADDYWHACKER HAND CANNON







BUT:

Even a single puff of dust is ripe for
exaggeration

Even a single puff of dust is ripe for
exaggeration

WE choose what shapes to *emphasize*.

Exaggeration can also be related to
SHAPE LANGUAGE



What you choose to exaggerate
contributes to TONE.

[ie: why Bioshock vfx emphasize body
horror]

There's always room for exaggeration,
Even in realism.

**EXAGGERATING
THE**

'JUICE'

Tool 4

STUDY



EVERYTHING

VFX is **INTERDISCIPLINARY**

KEEP STUDYING ART, 3D + 2D

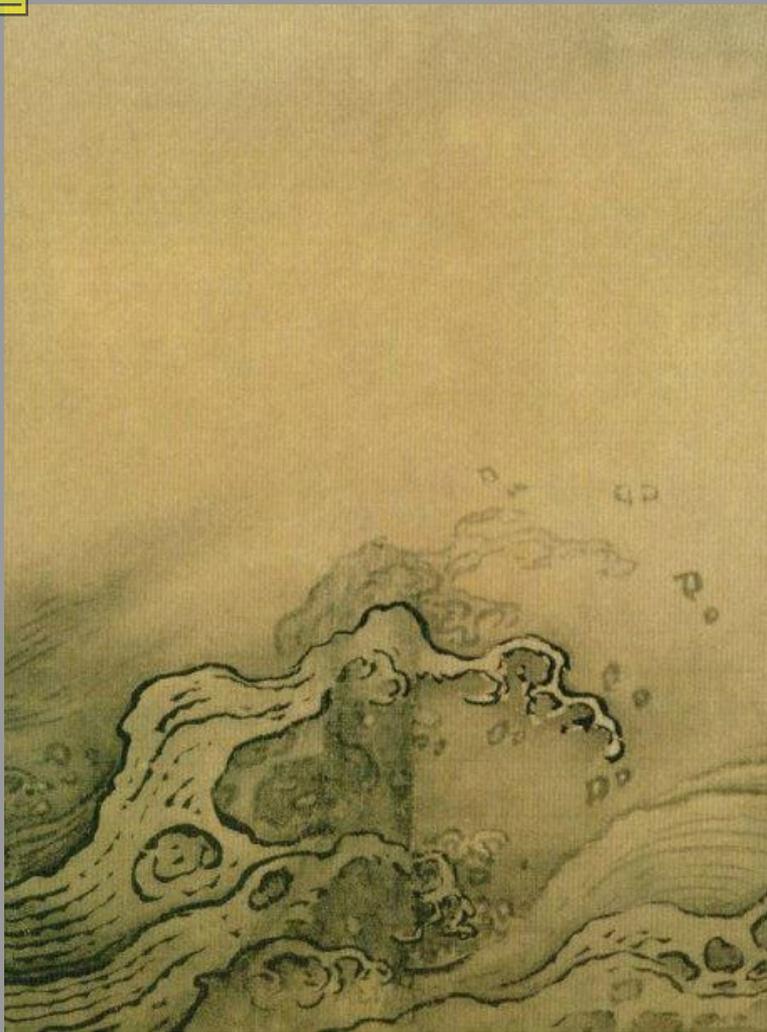
Communication *inside the team.*

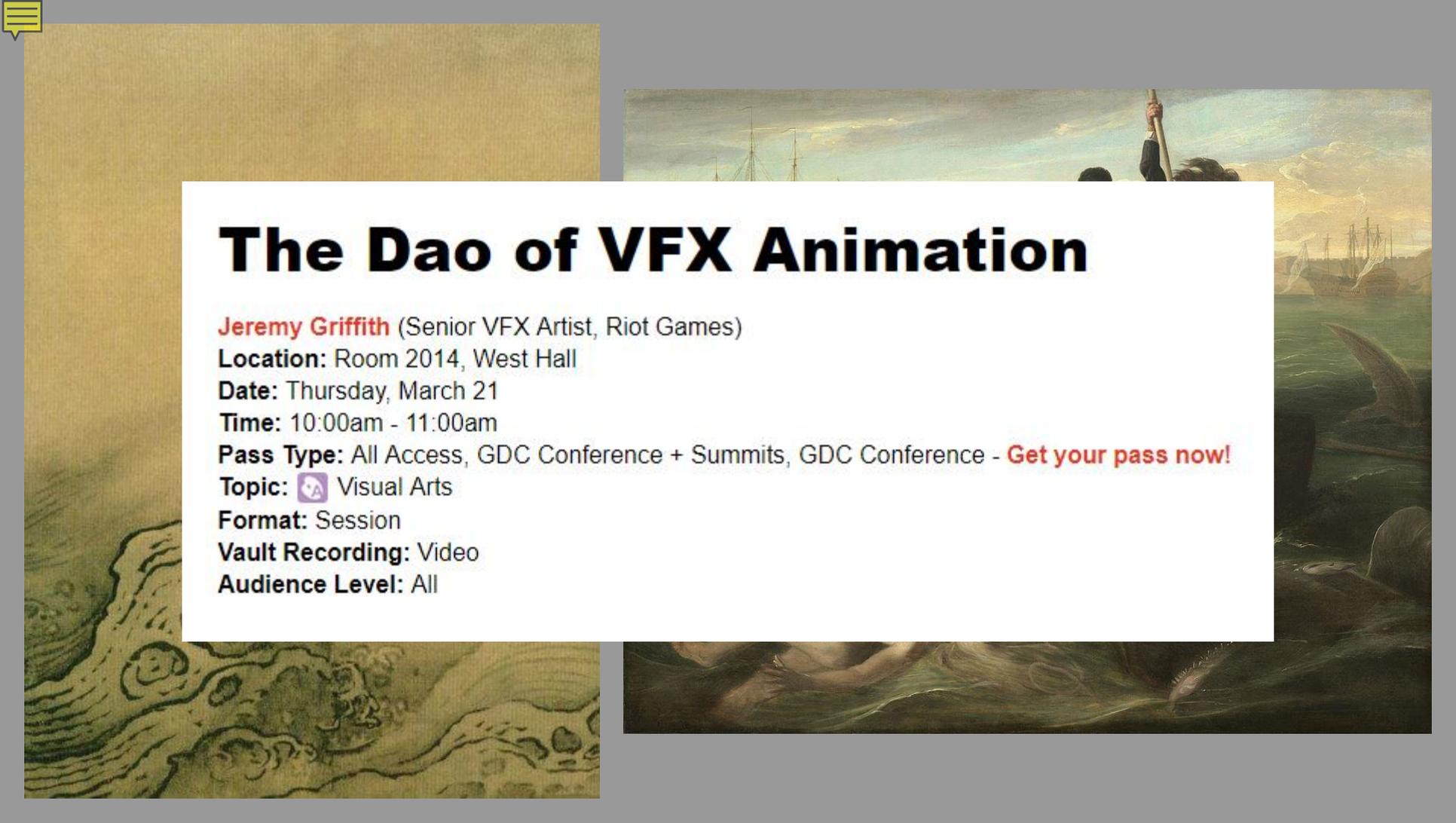
STUDY **ART HISTORY**

An entire human history of
VISUAL LANGUAGE

An entire human history of
VISUAL LANGUAGE

An entire world catalogue of types of
EXAGGERATION + STYLIZATION



The background of the slide is a composite image. The top portion shows a seascape with several large sailing ships on the horizon under a cloudy sky. In the foreground, a person's hand is visible holding a wooden pole. The bottom portion of the background features a dark, swirling sea with a large, dragon-like creature with wings and a tail, possibly a sea serpent or a dragon, swimming or flying. The overall style is reminiscent of a classic oil painting.

The Dao of VFX Animation

Jeremy Griffith (Senior VFX Artist, Riot Games)

Location: Room 2014, West Hall

Date: Thursday, March 21

Time: 10:00am - 11:00am

Pass Type: All Access, GDC Conference + Summits, GDC Conference - **Get your pass now!**

Topic:  Visual Arts

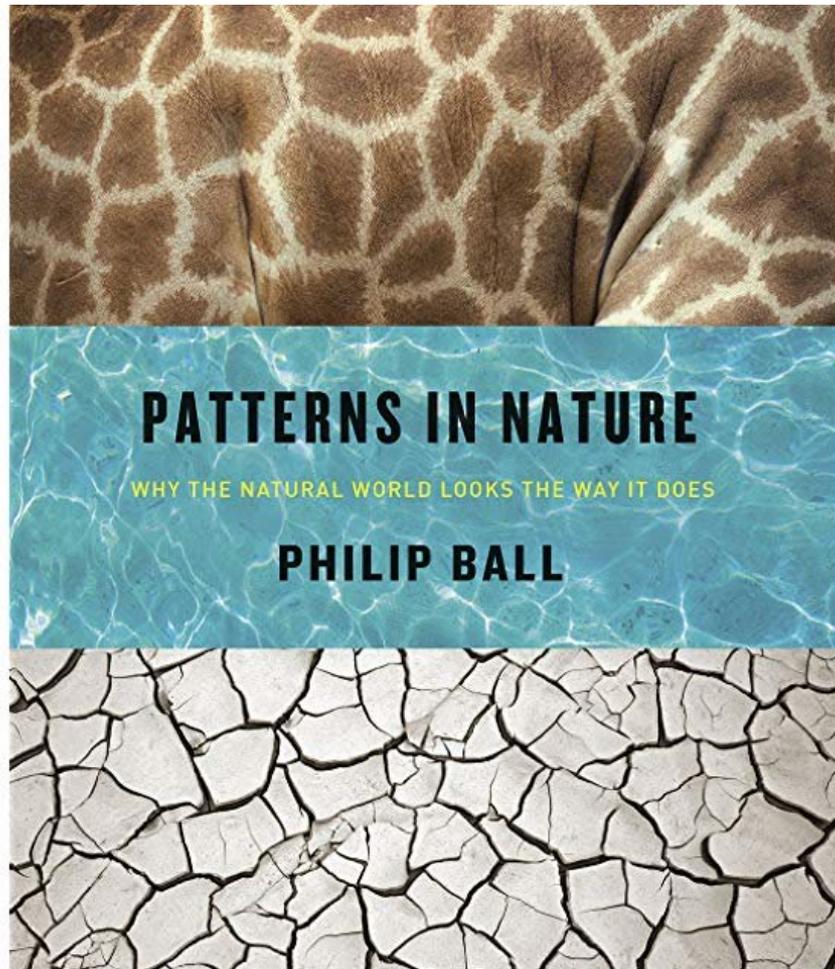
Format: Session

Vault Recording: Video

Audience Level: All

STUDY NATURE





PATTERNS IN NATURE

WHY THE NATURAL WORLD LOOKS THE WAY IT DOES

PHILIP BALL



The Dao of VFX Animation

Jeremy Griffith (Senior VFX Artist, Riot Games)

Location: Room 2014, West Hall

Date: Thursday, March 21

Time: 10:00am - 11:00am

Pass Type: All Access, GDC Conference + Summits, GDC Conference - **Get your pass now!**

Topic:  Visual Arts

Format: Session

Vault Recording: Video

Audience Level: All



Build your **VOCABULARY** of **FORM**



“Sapir-Worf Hypothesis”

Our linguistic categories influence our perceptions and thoughts.









If you **KNOW** more stuff,

If you **KNOW** more stuff,

Then you will **SEE** more stuff,

If you **KNOW** more stuff,

Then you will **SEE** more stuff,

And you will be able to **CREATE**
more *and better* stuff.

Because also...



**THE CREATIVE TANK
NEEDS FUEL.**



**DON'T STARVE YOURSELF IN FRONT
OF COMPUTER SCREENS FOR YOUR
ENTIRE LIFE.**



DON'T STARVE YOURSELF IN FRONT
OF COMPUTERS FOR YOUR ENTIRE LIFE.
BURNOUT



DON'T STARVE YOURSELF IN FRONT
OF COMPUTERS OR YOUR
BURNOUT
ENTIRE LIFE.

STUDY



EVERYTHING

Putting it all together

Case Study:
TYPES of DRAGON FIRE

Case Study:
TYPES of DRAGON FIRE

DAMAGE

SLOW

DoT

Case Study:
TYPES of DRAGON FIRE

RED
Flames

BLUE
Flames

GREEN
Flames

VAGUE

Case Study:
TYPES of DRAGON FIRE

RED
Flames
+
symbol

BLUE
Flames
+
symbol

GREEN
Flames
+
symbol

LAZY

Case Study:
TYPES of DRAGON FIRE

FIRE

ICE

ACID

BORING

DRAGON BREATH

DRAGON BREATH

DRAGON ***BODILY FUNCTIONS***



SKETCHING = THINKING

SLOW = SNEEZE

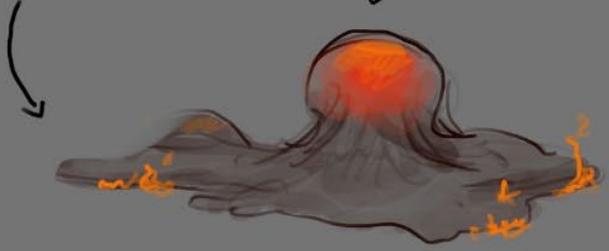


DRAGON
TAR - MUCUS



EMBERS
AT EDGE

FIRE BUBBLES
BUILD UP
FROM WITHIN



BUBBLES
BURST,
THROWING OUT
FIREBALLS

OPPORTUNITY:

Tie into dragon physiology







NOSE MOST
PROMINENT
FEATURE.



NOSTRILS LEAK
SMOKE.

WRINKLY SKIN,
STOCKY FORM.
LESS "ATHLETIC."



NOSE MOST
PROMINENT
FEATURE.



NOSTRILS LEAK
SMOKE.

WRINKLY SKIN,
STOCKY FORM.
LESS "ATHLETIC."



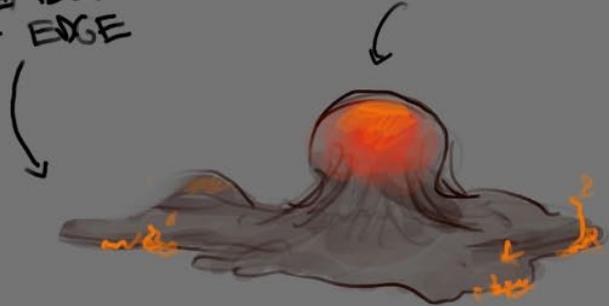
NOSTRILS LEAK
SMOKE.



W
S
L

FIRE BUBBLES
BUILD UP
FROM WITHIN

EMBERS
AT EDGE



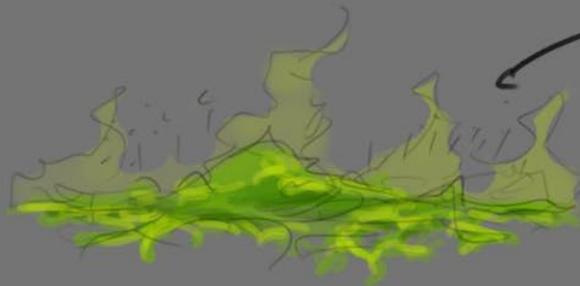
DoT = BILE



VISCOUS
BILE



CORONA
OF
FLAME



FIZZING,
BUBBLING.



OPPORTUNITY:

Tie into dragon physiology









FRONTAL
SPOUTS.

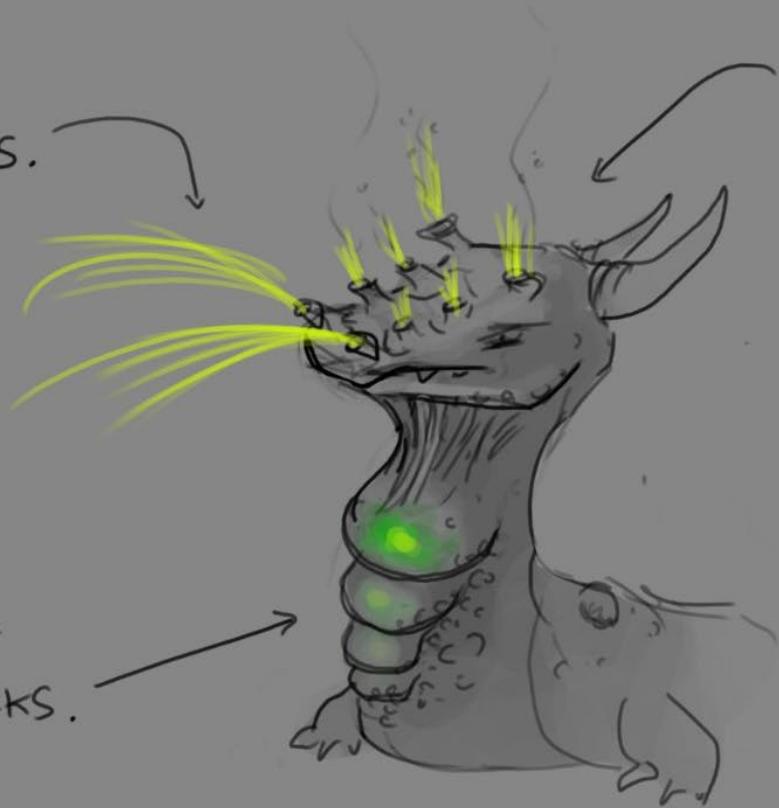
PRESSURE
RELEASE VALVES.

RIDGE OF
BILE SACKS.

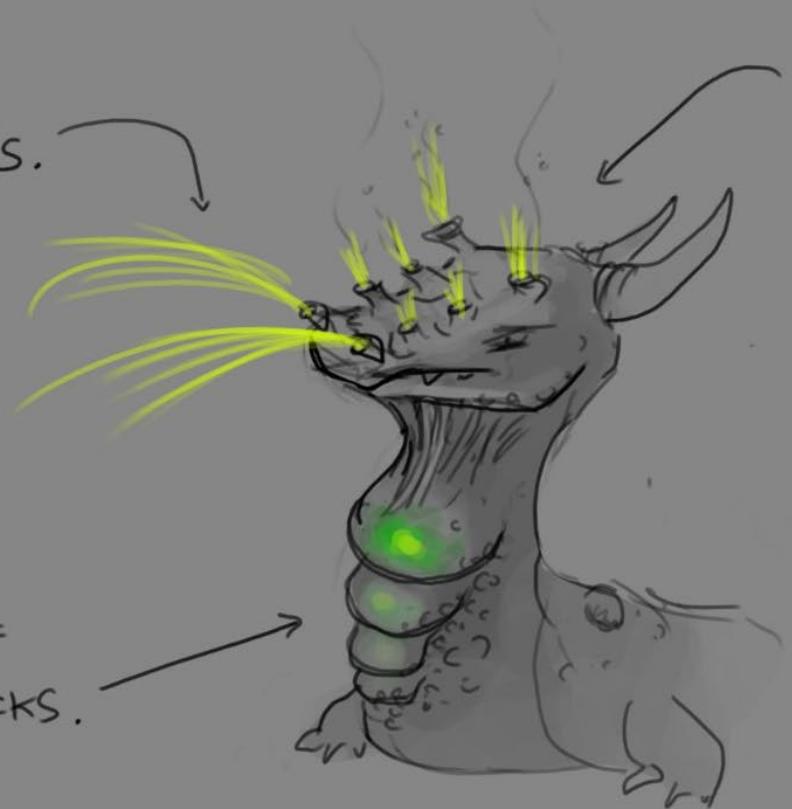


FRONTAL
SPOUTS.

PRESSURE
RELEASE VALVES.



RIDGE OF
BILE SACKS.

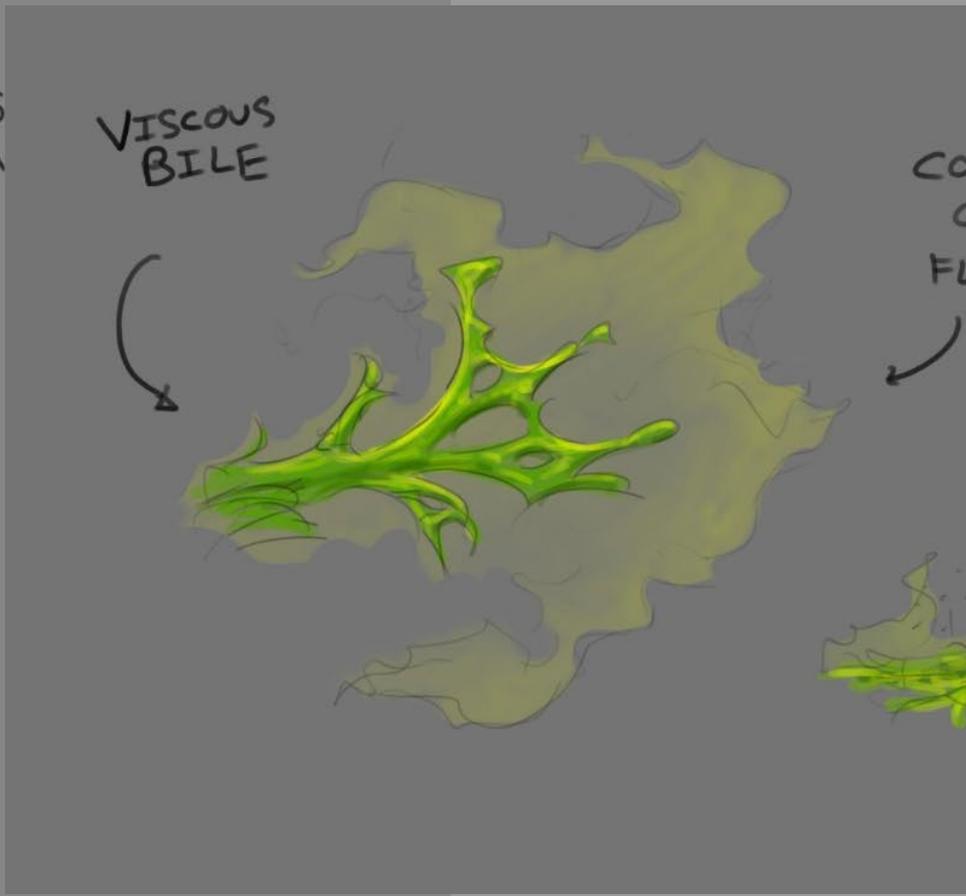


S.

KS.

PRESS
RELEA

VISCOUS
BILE



CO
FL

“Ok wait but that’s just acid.”

NO -- It's ***stomach*** acid + bile

NO -- It's *stomach* acid + bile

...which is more **SPECIFIC**

Case Study:
TYPES of DRAGON FIRE

DAMAGE

SLOW

DoT

Case Study:
TYPES of DRAGON FIRE

DAMAGE

SLOW

DoT

BREATH

TAR-SNOT

BILE-FONT

Case Study:
TYPES of DRAGON FIRE

DAMAGE

SLOW

DoT

BREATH

TAR-SNOT

BILE-FONT

UNITED by central theme of
HEAT

Case Study:
TYPES of DRAGON FIRE

FIRE

ICE

ACID

Case Study:
TYPES of DRAGON FIRE

DAMAGE

SLOW

DoT

BREATH

TAR-SNOT

BILE-FONT

UNITED by central theme of
HEAT

"But it's just magic!"

DON'T EVER SAY THAT

DON'T EVER SAY THAT

ARE YOU EVEN PAYING ATTENTION

IT'S *NEVER*

“JUST MAGIC.”

IT'S *NEVER*
“JUST MAGIC.”

It is our **job** to make it *more* than that.

CONCLUSION

ABSTRACT RULES

VFX

CONCRETE WORLD

FILL THAT GAP.

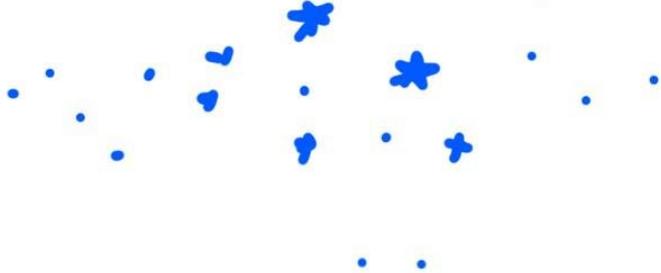
Be an active part of the **creative
problem solving** on your project.

Every effect you make has the potential
to **add clarity** to the **game rules**.

Every effect you make has the potential
to **add richness** to the **game world**.

THE **GOAL** IS **ALWAYS** **BOTH**.

MOTIVATE
YOUR
MAGIC

A decorative arrangement of blue dots and stars of varying sizes scattered below the word 'MAGIC'.

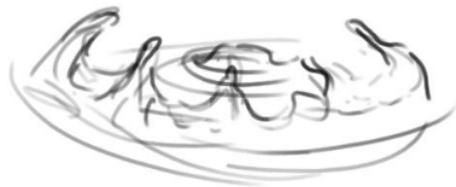
KNOW how your VFX *work* in relation
the game world.

BE SPECIFIC

Story Structure

FOR **VFX**





**EXAGGERATING
THE**

'JUICE'



STUDY



EVERYTHING



**THE CREATIVE TANK
NEEDS FUEL.**



DON'T STARVE YOURSELF IN FRONT
OF COMPUTERS OR YOUR
BURNOUT
ENTIRE LIFE.

ABSTRACT RULES

VFX

CONCRETE WORLD

ABSTRACT RULES

Be the expert

that can fill the gap.

CONCRETE WORLD

Jeremy Griffith

Senior VFX Artist, Riot Games

jrmgriffith@gmail.com

@Jarm__