



# The Science of Play: Unlocking Human Potential

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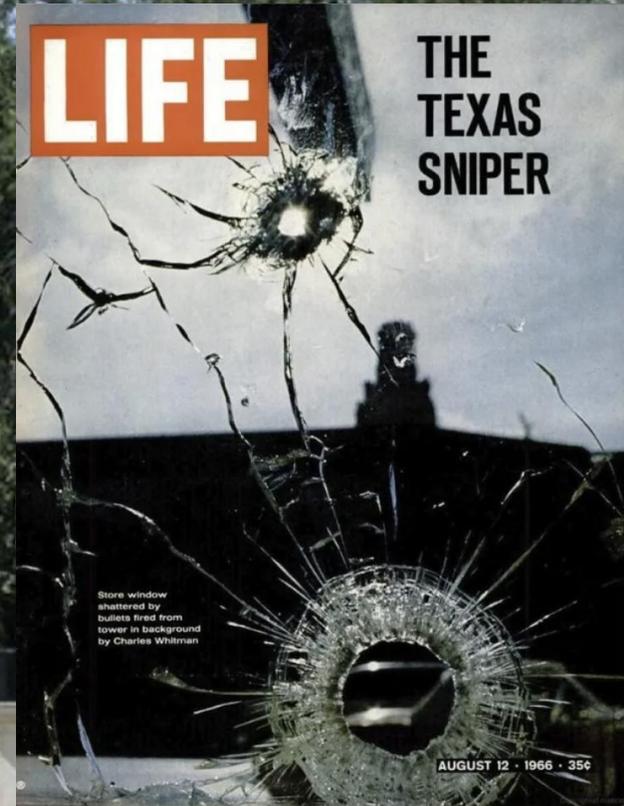
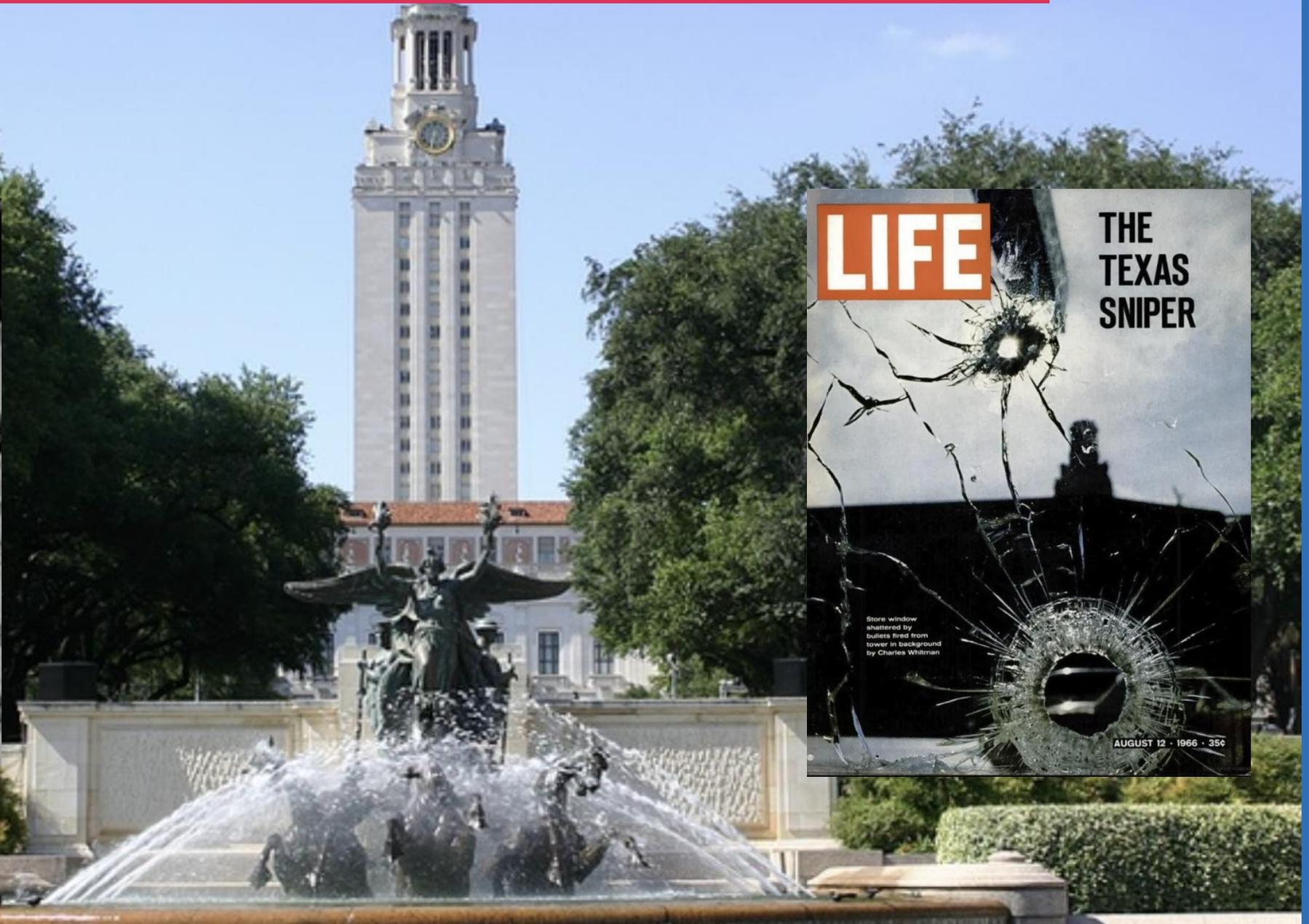
Director for Play Transformation, NIFP

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# Introduction



# Dr. Brown's Journey to Play



# The National Institute for Play



The Washington Post



Outside

Chicago Tribune



Newsweek

O  
B E I N G  
WITH  
KRISTA TIPPETT

FASTCOMPANY



The New York Times Magazine



# What is Play?

## Play State (Verb)

The act of playing

1. Altered state with no time tracking
2. Done for it's own sake (process vs. outcome)
3. Evokes pleasure (joy, glee, awe)
4. Intrinsically motivated
5. Flexible
6. Self-reinforcing



**The Weather**

*Fleeting, often changing*

## Play Trait (Adjective)

The cognitive disposition towards playfulness

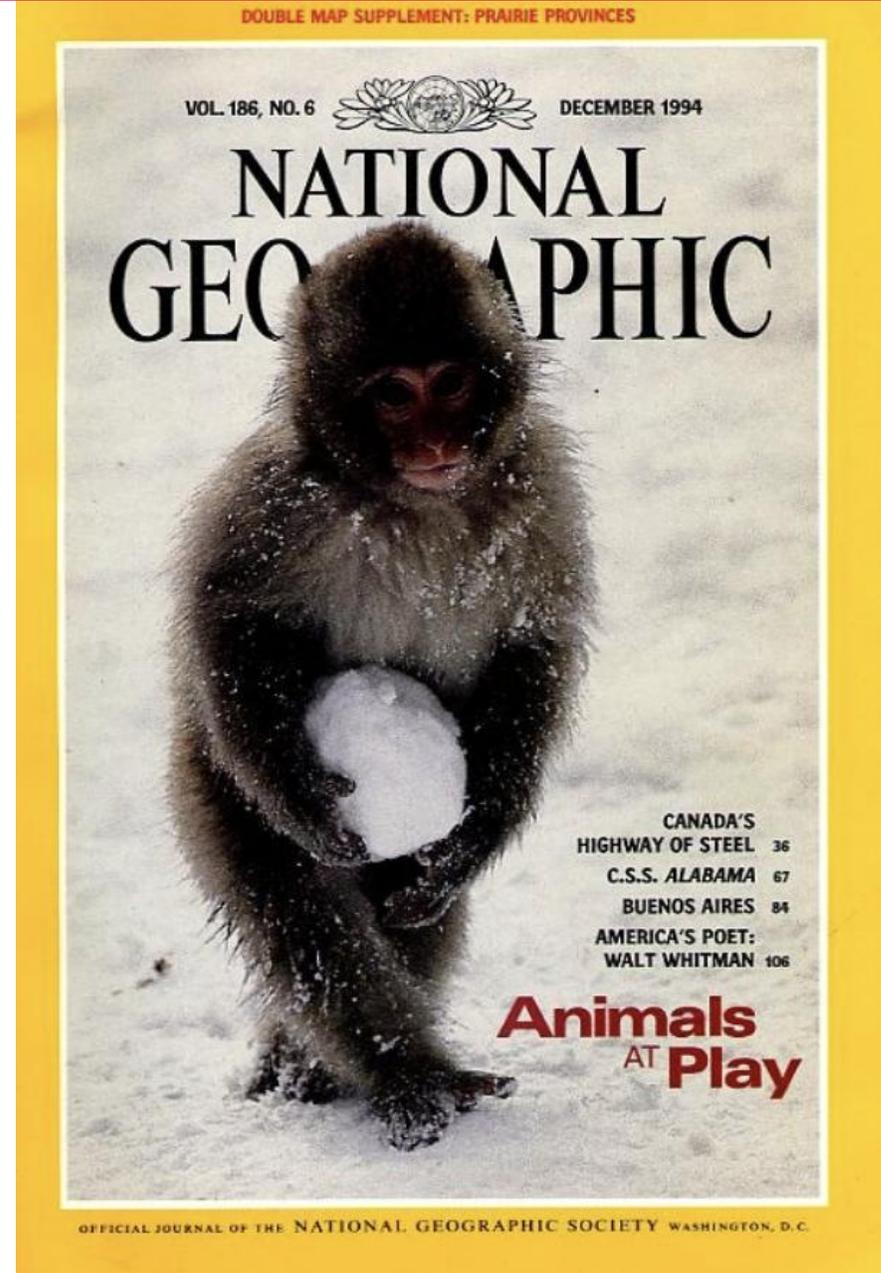
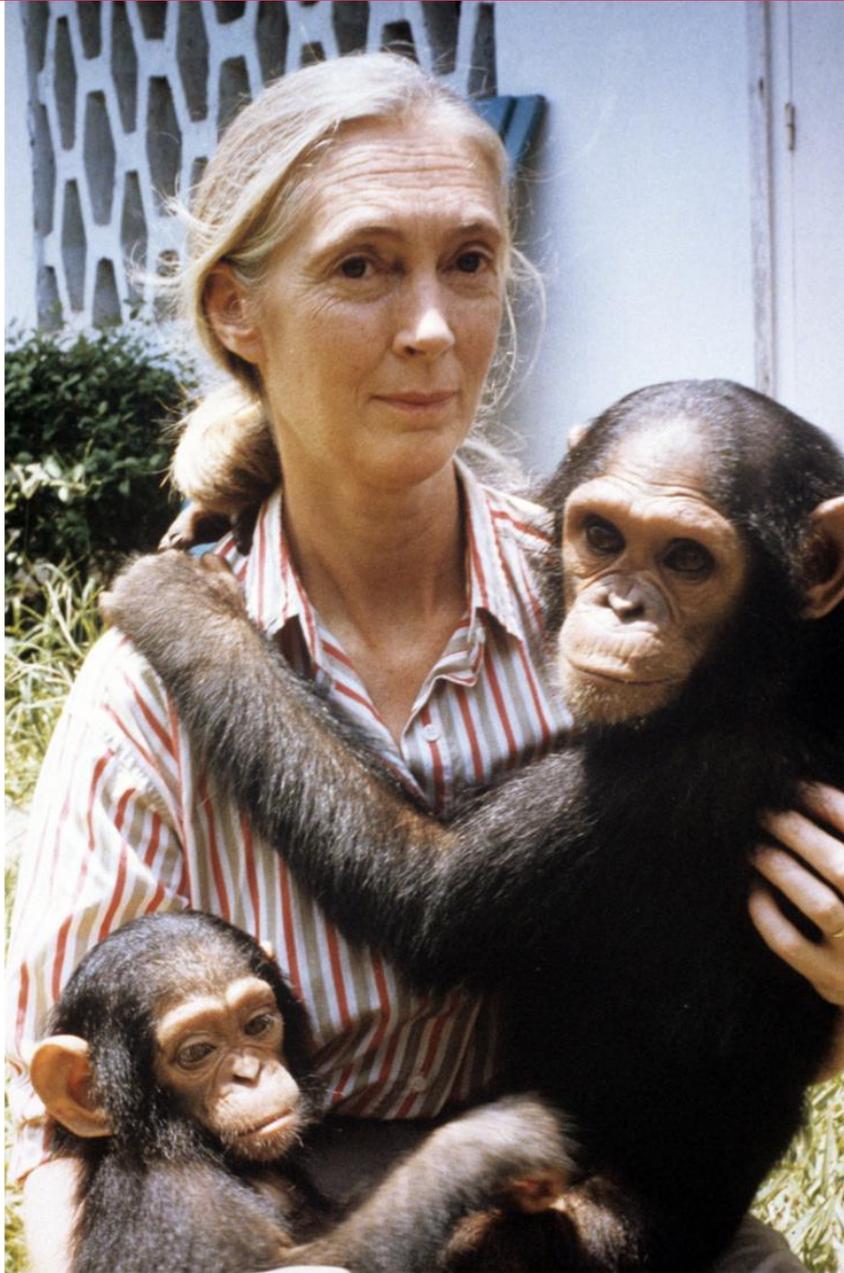
1. Optimism and curiosity
2. Creative and joyful problem-solving
3. Strong sense of self (authenticity)
4. Humor
5. Adaptability
6. Resilience



**The Climate**

*Underlying, sustained*

# Play in the Animal Kingdom



# Play in the Animal Kingdom





## Primal Emotions

SEEKING

RAGE

FEAR

LUST

CARE

PANIC

PLAY

# The Neuroscience of Play

Activated by the periaqueductal gray

Promotes neuroplasticity

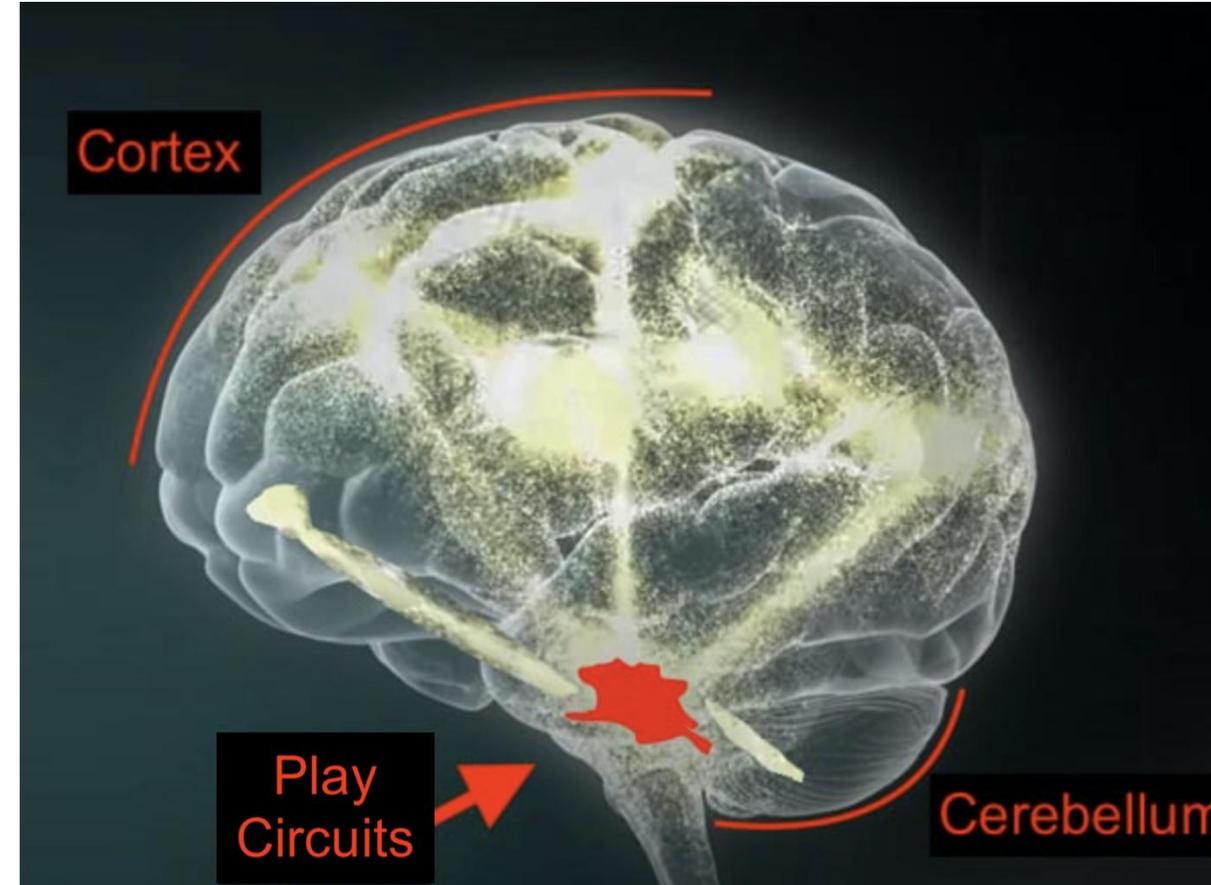
Takes pressure off the prefrontal cortex

Relaxes the amygdala

Lights up mirror neurons

Releases neurotransmitters

Communicates between brain regions



# The Elements of Play

<b>Anticipation</b>	<b>Surprise</b>	<b>Pleasure</b>	<b>Understanding</b>	<b>Strength</b>	<b>Poise</b>
interest	appreciation	satisfaction	tolerance	stamina	dignity
openness	awakening	buoyancy	empathy	vitality	grace
readiness	stimulation	gratification	knowledge	devotion	composure
expectation	excitement	joy	skill	ingenuity	ease
curiosity	discovery	happiness	insight	wit	contentment
desire	arousal	delight	mutuality	drive	fulfillment
exuberance	thrill	glee	sensitivity	passion	spontaneity
wonderment	astonishment	fun	mastery	creativity	balance

# Outcomes of Play

## Play Nourishment



### Cognitive Growth

- Creativity
- Curiosity
- Problem-solving
- Learning capacity

### Emotional Regulation

- Resilience
- Adaptability
- Stress reduction
- Confidence

### Social Competence

- Connection
- Empathy
- Collaboration
- Authenticity

### Flourishing

- Intrinsic motivation
- Engagement
- Purpose
- Productivity
- Well-being

## Play Deprivation

### Cognitive Rigidity

- Inflexibility
- Impaired executive function
- Fixed mindset
- Reduced creativity

### Emotional Disregulation

- Depression risk
- Poor impulse control
- Mood-driven behavior
- Increased anxiety

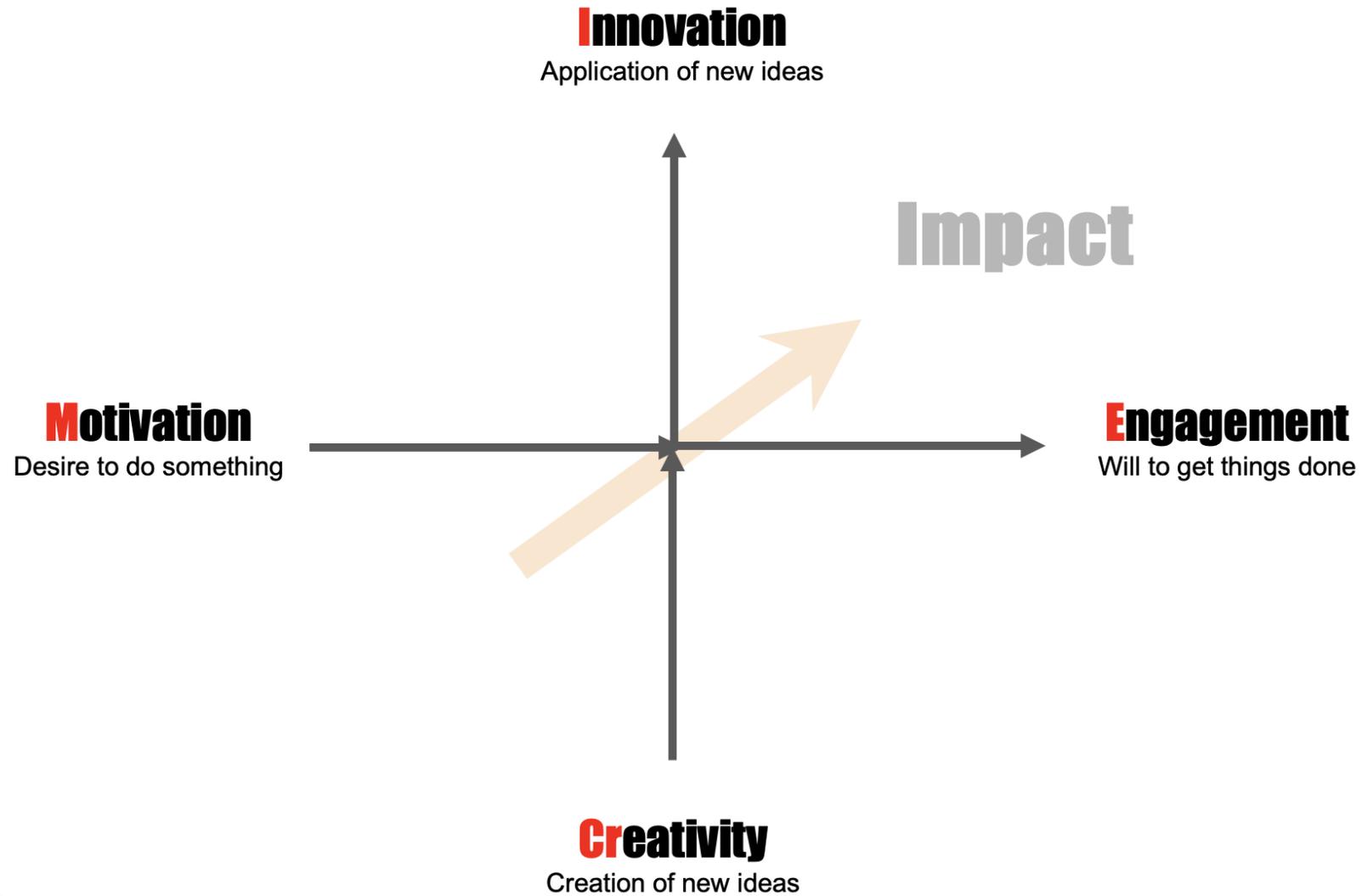
### Social Impairment

- Social withdrawal
- Difficulty reading social cues
- Lack of empathy
- Reduced collaborative capacity

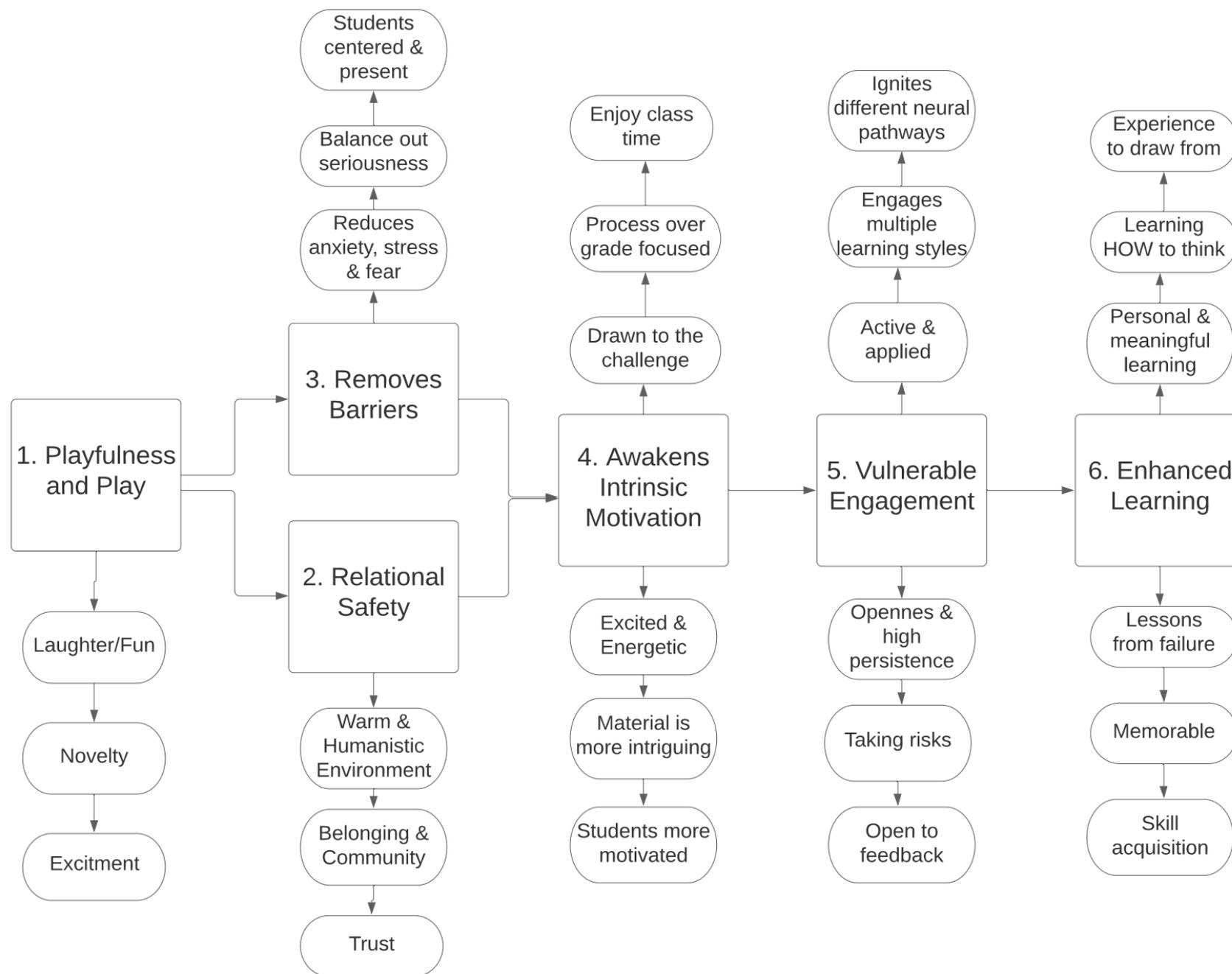
### Diminished Well-being

- Addictive predilections
- Lack of engagement and purpose
- Propensity for violence

# Outcomes of Playful Learning



Courtesy of David Thomas



# Principles of Playful Learning



Principle	Description
<b>Joyful Engagement</b>	Design for wonder, surprise, curiosity, and emotional resonance. Avoid monotony.
<b>Learner Agency</b>	Give choice, voice, and space for improvisation. Let students co-create.
<b>Purposeful Exploration</b>	Build environments where experimentation is safe and outcomes are flexible.
<b>Social Connection</b>	Prioritize collaboration, storytelling, and community-making and belonging through playful means.
<b>Iterative Process</b>	Embrace drafts, retries, and the spirit of “let’s see what happens if...”
<b>Playful Environment</b>	Create spaces that can be transformed, invite creativity, and captivate inspiration.

# Types of Play for the Classroom



<b>Type of Play</b>	<b>Example Activities</b>
<b>Constructive Play</b>	Building models, design challenges, tinkering
<b>Imaginative Play</b>	Role-playing, storytelling, simulations
<b>Social Play</b>	Collaborative work, improv, cooperative problem-solving
<b>Game-Based Play</b>	Gamified challenges, classroom quests, game board
<b>Risky Play</b>	Creative constraints, opposite questions, new rules
<b>Exploratory Play</b>	Open-ended inquiry, unstructured time, creative labs
<b>Physical Play</b>	Dance, demonstration, moving between areas of the room

- Student-led icebreakers
- Paper-airplane intro game
- The impossible question
- Handshake challenge
- Game of toss with a twist
- Intellectual escape room

- Riddle of the day
- Scavenger hunt challenge
- Magic trick opener
- Storytelling opener
- Stretching or dancing opener
- Mindfulness opener
- Play-object opener
- Emoji and meme opener

## Lead with play

The more playful YOU are, the more students will mirror you. Invite play into the classroom.

- Add fun animations and creativity to your slides
- Share the ways you play
- Celebrate mistakes
- Laugh at yourself
- Play music at the beginning or end and dance
- Assume different characters to present material or assignments

## Language matters

- Ideas = playful. Theories = highfalutin and rigid
- Explore = playful. Memorize = rigid
- Experience = playful. Lecture = boring

# Thank you



PLAY + SCIENCE = TRANSFORMATION