



# BRMI

## CONFERENCE 2018

# SCIENCE OF PLAY

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# SCIENCE OF PLAY

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# PLAYING IS VITAL

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**WE NEED TO HAVE A SERIOUS  
CONVERSATION ABOUT PLAY AND  
PLAYFULNESS**

# Definition of Play

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1. Activity done for its own sake/ **PLAY is NOT OUTCOME ORIENTED**
2. Voluntary and pleasurable
3. Is activity that engages body mind and spirit
4. Takes you out of time
5. Children are the experts, and playing is hardwired for entire life

# Play Deprivation Studies

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- Stuart Brown, MD a young psychiatrist in Texas was appointed to a
- Panel of experts created by Governor Connally after the first mass shooting occurred in August 1966

Charles Whitman a 23 year old student in architectural engineering shooting rampage killing 14 people and wounding 41 others on campus UT, Austin.

- Earlier that day he had killed his wife of 2 years and his devoted mother.
- This was the first mass shooting of this magnitude in USA.

# Early Research on Human Play

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The Governor appointed a panel of toxicologists, physiologists, psychiatrists and psychologists to do a broad based in depth evaluation of Charles Whitman to investigate his motivation with the intention of preventing recurrences

## Early Research on Human Play

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As Texas Monthly's Pamela Colloff [wrote](#), the shooting  
*“ushered in the notion that any group of people,  
anywhere – even walking around a university campus on a  
summer day – could be killed at random by a stranger.”*

# Play Research in Humans

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## Past History:

- Raised in an intact family active in the Catholic church and Boy Scouts
- Was the youngest child ever to earn his Eagle Scout badge at the age of 12
- Was academically gifted and very successful in school
- No history of substance abuse, no previous history of behavioral or academic difficulty



# Play Deprivation

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- Dr Brown interviewed neighbors and classmates of the Whitman's
- Charles was a friendly, bright, hard working
- Multiple people interviewed detailed that Charles was forbidden to play by his strict father
- Initially being forbidden from playing seemed like a quirky detail

# History of Play Research

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Dr Brown went on to interview over 6000 males who had committed first degree homicide between 1968-2013

- He developed and implemented specific questions about opportunities for rough and tumble play and other kinds of free play from birth to age 21
- The most consistent comorbidity for homicidal criminals is play deprivation
- Abuse, neglect and socioeconomic factors involved as well but correlation is indirect

# Functions of Play

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- Develops intrinsic interests and competencies
- Early childhood free play will identify a child's talents, innate strengths and natural tendencies

# History of Research

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Stuart Brown, MD developed a questionnaire about childhood play

- Research began in 1966 and is ongoing
- Generations of American children since Baby Boomers have fewer opportunities for play

# Functions of Play

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- Cultivates An Individual's Most Complex Behavior
- Generates Joy
- Explores Rules And Roles
- Determines Our Interpersonal Relationships Of Social and Cultural Engagement
- Decreases Aggression, Increases Resiliency
- Cultivates Our Ability To Cooperate, Problem Solve
- Increases Youthful Wellbeing And Length Of Life

# Rich Data on Play

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- Play is hardwired into the brains of all mammals
- The urge to play is embedded in all humans and has been refined by nature over 100,000 years
- Playing is as important as sleeping and dreaming
- **Is a factor in the evolution of brain structures and functions as well as personality , talent and spirituality**
- Data from neurobiology, cognitive psychology as well as evolutionary and molecular biology describes the critical importance of play

# PLAY Center of the Brain

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- PLAY circuitry links the thalamus to the frontal cortex
  - Children universally engage in rough and tumble play from preschool to pre adolescence which correlates with the period for maximal cerebellar growth and development
- PLAY fosters cortical synaptogenesis
  - Synaptogenesis (neuroplasticity) continues throughout adulthood in humans
  - Human brains are biologically designed for play which should continue until the end of life

# Brain and Play

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In mammals, species with larger brains compared to body size played more often.

- Active play stimulates BDNF (brain derived neurotrophic factor) in the amygdala (emotional center) and in the dorsolateral prefrontal cortex (executive decision making)



# Types of Play

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- Rough and tumble play
- Solitary (Independent) Play...
- Onlooker Play
- Parallel Play...
- Associative Play...
- Cooperative Play...
- Dramatic/Fantasy Play

# Active/Rough and Tumble Play

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- Rough and tumble play is essential for developing social skills and resiliency for 3-12 year olds
- Is **noisy**, **anarchic**, **chaotic** and requires **vigorous**, **whole body activity**
- Requires safe space and includes **diving**, **hitting**, **spinning**, **tumbling** **wrestling**, **squealing** and constant verbal and non verbal negotiations
- Is spontaneous and **JOYFUL** and **COOPERATIVE**

Children require regular opportunity for rough and tumble play

# Rough and Tumble Play

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- Reduces aggressive behavior
- Increases resilience
- Increases stress tolerance and tolerance of others
- Cultivates empathy and healthy self esteem
- Curtails bullying
- Creates permanent neural networks

AND... often seems risky and necessary to well meaning adults

# Play vs Combat or Competition

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- Rough and tumble play requires a certain amount of risk taking
- Rough and tumble play does not result in “winning” or domination
- Rough and tumble play is naturally cooperative and joyful
- Healthy competitive and combative play requires a wise and unbiased coach, love of the game, personal best ,and joy in teamwork/cooperation

# Children Have Stopped Playing

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- On average kids 8-18 spend 53 hours a week on media
  - > 7 but < 8 hours a day everyday (Kaiser Family Foundation)
- 21 % of American children report that they play outdoors on a regular basis
  - Nature Deficit Disorder
  - 50 % of parents believe that children cannot play outside unsupervised until they are 14

# Why Have We Stopped Playing?

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- Increased emphasis towards risk reduction safety regulations
- Liability/ insurance / Risk reduction
- Helicopter parenting
- Screen time

# Risk Taking

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- Is a vital component for child's play
- Playful risk taking is essential for healthy adulthood
- Society has become risk averse
- Society has become averse to “wasting time”
- We all live in a world that is separate from access to the natural world

# Healthy Play Requires Risk Taking

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- Kids are natural risk takers
- Kids have a natural ability to modulate risk taking behavior
- Children are no longer allowed to take risks
- Excessive focus on eliminating all risk from childhood fosters rigidity, impairs creativity and problem solving
- Increases bullying and violence



# Diagnosis

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**Nature deficit disorder** is a phrase coined by Richard Louv in his 2005 book *Last Child in the Woods* meaning that human beings, especially children, are spending less time outdoors resulting in a wide range of behavioral problems.

# Play

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- Is self organizing, self perpetuating and emergent
- Playfulness is wisdom
- Playfulness identifies and promotes natural talents
- We are designed for neuroplasticity
- Long fulfilled life requires a balance between Doing and Being
- Playing does not mean being irresponsible

# Incorporating Play

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- Most of us are play deprived in our daily lives
- Many of us were play deprived as children in the name of professional success, academic prowess and because DOING is rewarded while BEING is a waste of precious time
- Play deprivation in childhood cultivates narcissism, isolation, intolerance and aggression

# Effects of Play Deprivation

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- Decreases ability to recognize and diffuse negative emotions
- Increases narcissism, a fragile defensive self esteem which leads to bullies and being bullied
- Shifts a developing world view from interdependence to independence and eventually to isolation
- Decreases sense of personal safety and promotes lack of trust

# Function of Play

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- Communication Skills
- Resiliency
- Flexibility / ability to “roll with the punches”
- Empathy
- Interpersonal Connection
- Creative problem solving

These skills continue to develop and evolve throughout adulthood...

# Adult Play

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Many Adults did not have an opportunity for free play in childhood.

- Include in your history open ended inquiry into opportunity to play
- Questions focus on recollections of each type of play from preschool to present

# Adult Play Deprivation

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- Limited by enormous pressure for academic achievement
- accumulation of material and fiscal wealth
- Decreased access to natural world
- Preceded by childhood play deprivation
- Self consciousness
- Lack of community

# Where to Go From Here

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- National Institute of Play
- Join or **CREATE** adult play groups which include movement activity
- Play time is not wasted time
- **GET SERIOUS ABOUT PLAY**



# Resources

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- **National Institute of Play** - [nationalinstituteofplay.org](http://nationalinstituteofplay.org)
- **American Journal of Play** - [Journalofplay.org](http://Journalofplay.org)
- [Allianceforchildhood.org](http://Allianceforchildhood.org)
- **Playgrounds for Adults - the Dirty Dozen of Fun**
- [Childrenandnature.org](http://Childrenandnature.org)
- [Somersetoutdoorplay.org.uk](http://Somersetoutdoorplay.org.uk)