POSITIVE PSYCHOLOGY IN GAME DESIGN:
CREATING ENGAGING COMMUNITY-FOCUSED GAME-BASED INTERVENTIONS

MATTHEW LEE, MS, RN
Matthew Lee, RN
Fulbright Scholar in Psychology
Chair, IGDA Serious Games
@alfheimwanderer
serious@igda.org
• Facilitates the development of engaging, evidence-based digital games to help teens thrive
• Leverages the core principles of positive psychology in designing interventions
• Takes a community health approach
Game design? Positive Psychology? What’s the connection?
The diagram illustrates the relationship between Mechanics, Dynamics, and Aesthetics in the context of game design. The process begins with the designer, who generates the Mechanics component. These components include:

**Components** (e.g., Points, Badges, Avatars, Virtual Goods, Leaderboards)

**Controls** (e.g., Task Timers, User Turns, Skill Tests)

**Courses** (e.g., Quests, Levels, Groups)

The Mechanics then influence the Dynamics, which can be described as follows:

- Context
- Constraints
- Choices
- Chance
- Consequences
- Completion
- Continuation
- Competition
- Cooperation

The Dynamics then evolve into the Aesthetics, offering a range of elements to enhance user experience:

- Challenge
- Commendation
- Confidence
- Cognizance
- Creativity
- Contribution
- Community
- Compliance

The diagram also highlights the narrative progression from Embedded Narrative, through Emergent Narrative, to Interpreted Narrative, indicating a dynamic and evolving process in game design.
GAME DESIGN INVOLVES...

LEVEL UP!

Flow
Progression
Engagement
Enjoyment
Coherence
Hopes
Fears
Wants
Motivation
Immersion
Expectations

Mechanics, Dynamics, and Aesthetics
POSITIVE PSYCHOLOGY

• A branch of psychology that focuses on growth and experiences, not illness

• Examines:
  • Why experiences are engaging
  • Human emotions and strengths
  • Why communities grow and thrive

Positive Psychology = The science of happiness
GAME DESIGN: A LIGHT-FINGERED DISCIPLINE

• “Because game design is an emerging discipline, we often borrow from other areas of knowledge — from mathematics and cognitive science; from semiotics and cultural studies. We may not borrow in the most orthodox manner, but we do so in the service of helping to establish a field of game design proper.” (Sutton-Smith, 1971)

• Examples:
  • The Magic Circle (Huizinga, 1938)
  • “Newtonian Engagement” (Pihl, 2013)
  • Cognitive Flow (Csikszentmihalyi, 1996)
  • Need Satisfaction (Rigby & Ryan, 2007)
“All play moves and has its being within a play-ground marked off beforehand either materially or ideally, deliberately or as a matter of course. Just as there is no formal difference between play and ritual, so the 'consecrated spot' cannot be formally distinguished from the play-ground.... All are temporary worlds within the ordinary world, dedicated to the performance of an act apart” (Huizinga, 1938).
Newtonian Engagement

A player who is engaged remains so unless acted upon by an outside force
Sense of Coherence

Core component of salutogenic theory (Antonovsky, 1987), related to confidence and control in the face of challenges and stressful situations
Flow (thatgamecompany, 2006)
A heavily-researched framework that theorizes that player engagement can be measured by a game’s ability satisfy the needs defined by Self-Determination Theory (Deci & Ryan, 2001)

- Competence
- Autonomy
- Relatedness

Studies showed that need satisfaction was more predictive of long-term player retention and satisfaction with a game than mere enjoyment (Ryan et al, 2006)
PERMA: THE FIVE PILLARS OF WELL-BEING

- **Positive Emotions**
  - Self-Determination Theory of Intrinsic Motivation (Deci & Ryan, 2000)
  - Salutogenesis (Antonovsky, 1987)

- **Engagement**
  - Flow Theory (Csikszentmihalyi, 1990)
  - Learned Optimism (Seligman, 1991)
  - Strength Based Approach

- **Relationships**
  - Social Identity Theory (Tajfel & Turner, 1986)
  - Mindfulness

- **Meaning**
  - Self-Determination Theory of Intrinsic Motivation
  - Salutogenesis (Antonovsky, 1987)
  - Maslowe’s Hierarchy of Needs

- **Accomplishments**
  - Self-Determination Theory of Intrinsic Motivation (Deci & Ryan, 2000)
PERMA & GAME DESIGN

• **Positive Emotions**
  - The value of fun
  - Reward Systems

• **Engagement**
  - Immersion & Flow
  - Balancing Difficulty and Skill

• **Relationships**
  - Social Systems
  - Feedback and Progression
  - Risk vs Reward
  - Ludo-narrative integration & consistency

• **Meaning**
  - Meaningful Choice & Consequences
  - Empathy-focused games
  - Personal Investment

• **Accomplishments**
  - Character / Player Growth
  - Achievements
Right, but...why is this important?
Global gameplaying population in 2015 = 1.5 billion people (EEDAR, 2015)

25% of all humans on Earth!
Global gameplaying population in 2020 = 4.5 billion people (EEDAR, 2015)

50% of all humans on Earth!
Serious Games

Games which have something other than “entertainment, enjoyment or fun as their primary purpose” (Michael & Chen, 2005)
A BRIEF HISTORY OF SERIOUS PLAY

- **Renaissance: Serio Ludere** - “to play seriously”
  - Referred to literature that dealt with complex / weighty issues in a lighthearted fashion (Djaouti, Alvarez, Jessel, & Rampnoux, 2011)

- 18th Century: A Century of Play
  - Gerhard Tersteegen’s *Pious Lottery* – *Gamification of Religion*
  - C.P.E. Bach’s *A Method for Making Six Bars of Double Counterpoint at the Octave Without Knowing the Rules*
  - Maximillian Stadler’s *Table for composing minuets and trios to infinity, by playing with two dice*
  - Wolfgang Schwarzkopf’s *Playground of rare Sciences*

*(The notion of Play as therapeutic or as an integral part of society is far older than this, going back to Aristotle!)*
GAMES AS...

Interactive Training

Therapy

Documentaries

Tools for Research

Explorations of Public Policy

Simulations

Augmented Learning

Theatre

Cultural Exploration

Literature

Art

Tangential Learning
> Wait this one out.
> Volunteer to go first.
Pesky gNATs

Transforming adolescent mental health interventions through technology

**Pesky gNATs**

Pesky gNATs is designed to help mental health professionals deliver CBT interventions to young people. It combines gaming and mobile technology with the highest quality psychological content to support evidence-based interventions with young people aged 9-17.

**Availability and training**

The Pesky gNATs software is designed for use by mental health professionals who work with young people. The professional version of the Pesky gNATs software costs £150. Before using the software we also recommend that you complete our online training, which is available for free to all mental health professionals registered for Pesky gNATs.

Please complete our registration process to request access to the Pesky gNATs software and online training.

Register here
But what about community-focused interventions?
(i.e. How do we create effective psychology-driven serious games for use outside the classroom or clinician’s office?)
SPARX (SMART, POSITIVE, ACTIVE, REALISTIC X-FACTOR THOUGHTS!)

• **What**: A web-based program aimed at teens with depression, anxiety or stress

• **How**: Cognitive-Behavioral therapy, with modules taking the form of “levels” in a role playing game

• **Who**: University of Auckland, 2009

• **Significance**: Showed that therapy delivered via a game *could* be as effective as going to a mental health professional under certain circumstances
“Our biggest risk is that we will not find a way to get Sparx to young people and that would be a shame after all this work, and given that there is such a need.”

Professor Sally Merry
University of Auckland
Cure Kids Duke Family Chair in Child and Adolescent Mental Health
SPARX – A FLASH IN THE PAN

• Marketed as “The Video Game for Depression”

• Was available online in USA and Canada, for an access fee of $30 USD/month

• Lacked a clear understanding of...
  • ...the audience SPARX was best suited for
  • ...how to adapt SPARX to that audience’s expectations
  • ...how to market in a way that minimized stigma

• A game? Or a tool? Who was the intended buyer?
PROBLEMATIC ASSUMPTIONS

- **Assumption:** Games are implicitly engaging
- **Fact:** Games are only engaging when designed to be

- **Assumption:** SPARX’s main competition was conventional therapy
- **Fact:** SPARX competed against games for attention and $$$ - and lost

- **Assumption:** Clinical success translates to commercial success
- **Fact:** Clinical studies have limitations that need to be addressed during commercialization (e.g. the adolescents involved were already seeking help)
COMMON ISSUES IN SERIOUS GAMES

• Clinical/Educational purpose > Gameplay (the trivialization of “fun”)

• Engagement disrupted by repetitive assessment, lack of choice, and lack of challenge

• Failing to understand expectations of End User, as opposed to the Buyer/Client

• The lack of a common language for collaboration and development
• **What**: A biofeedback-enhanced first-person horror adventure game that helps players learn techniques to manage stress and anxiety

• **How**: Consumer-grade Physiological and/or Emotional Biofeedback sensors (from heart rate monitors to webcams) detect elevations in psychological arousal and facial reaction data

• **Who**: Flying Mollusk, 2015

• **Available on**: PC (Windows/Mac), Oculus Rift/Xbox One
“Nevermind’s goal is to create an unforgettable gameplay experience that also teaches players how to be more aware of their internal responses to stressful situations.”

Erin Reynolds
Creative Director, Flying Mollusk
JOURNEY

- **What**: An third-person adventure game / interactive parable in which one experiences the passage of a person’s journey through life and momentary interactions with others

- **How**: Interactive music, self-guided exploration, limited multiplayer interaction

- **Who**: thatgamecompany, 2012

- **Significance**: Widely acclaimed as 2012 Game of the Year; brought the notion of games as meaningful, enriching experiences to public awareness
SUCCESSFUL GAMES

• ...use mechanics to produce memorable experiences

• ...are crafted with player engagement in mind

• ...use the principles of Need Satisfaction and Coherence to promote immersion

• ...are created by developers aware of a player’s expectations and likely responses
GAMES ARE SYSTEMS, NOT MAGIC BULLETS
NO GAME IS AN ISLAND UNTO ITSELF
Mechanics
- Components (e.g., Points, Badges, Avatars, Virtual Goods, Leaderboards)
- Controls (e.g., Task Timers, User Turns, Skill Tests)
- Courses (e.g., Quests, Levels, Groups)

Dynamics
- Context
- Constraints
- Choices
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Embedded Narrative
Emergent Narrative
Interpreted Narrative
Four Categories Players Fall Into:

- **Achievers**, goal-driven players who like concrete measures of success (e.g. "points", levels, equipment, achievements, etc)
- **Explorers**, players who enjoy looking around, discovering more about the world and how it works
- **Socializers**, who consider the game not the end but the means to interact and create friendships with other players – and sometimes, well-crafted NPCs
- **Killers**, players who find satisfaction in competing with / defeating other players
A LINGUA FRANCA FOR SERIOUS PLAY

• The principles of Positive Psychology = de facto standard for good design, but Serious Play has yet to acknowledge this, with applications...
  • ...focusing on clinical/educational purpose at expense of user engagement
  • ...trivializing fun, and being unable to recognize limitations of traditional approaches
  • ...failing to understand games as experiences

• Concerns from developers/designers often dismissed when couched in the language of “gameplay” or “fun” – even if what is meant is need satisfaction or engagement

• Collaboration often impaired by field-specific jargon or unspoken assumptions
POSITIVE PSYCHOLOGY AS A LINGUA FRANCA

• Language of positive psychology understood and respected in business, academia, education, and healthcare, the usual markets for applications of serious play

• Game Industry is placing ever increasing value on User Experience Researchers and Psychologists, given value of engagement and coherence in design

• Salutogenesis and psychology now being applied to architecture and other design fields

• Needs to be taught early on – or made accessible as a resource – before language drift sets in
FURTHER WORK NEEDED ON...

• Studying the communities serious games are designed for, in order to better understand user stories and scenarios

• Bridging the buyer / end user disconnect in priorities, messaging, and interests, especially in the case of client-funded games

• Working on a new *economic* model for funding public-facing serious games — monetization is key to longevity and impact, but must be carefully designed
  • Client-funded models do not provide for maintenance and updates
  • Advertising problematic, since uncurated content can detract from experience
As temporary worlds, games operate within a “magic circle” separating them from the outside world. But the boundary is porous. It "cannot be sealed completely; people are crossing it all the time in both directions, carrying their behavioral assumptions and attitudes with them" (Castronova, 2005).
EVERYTHING CHANGES;
AVATARS; PLACES; STYLES;
BUT THE HEART REMAINS

@alfheimwanderer
serious@igda.org