From Exploitationware to Careware
Players, Scientists and Epistemic Games

Dr. Casey O’Donnell
w: www.caseyodonnell.org
t: @caseyodonnell
m: caseyod@msu.edu
CASEY O'DONNELL
PHD STUDENT
RENSSELAER POLYTECHNIC INSTITUT
1-10207
SERIOUS GAMES SUMMIT PASS
CONFERENCE
STAFF
AMERICA'S ARMY

AA 3
DEVELOPER'S DILEMMA
THE SECRET WORLD OF VIDEOGAME CREATORS

CASY O'DONNELL

The MIT Press
WHAT VIDEO GAMES HAVE TO TEACH US ABOUT LEARNING AND LITERACY

REVISED AND UPDATED EDITION

“A transformative work. Gee is the Johnny Appleseed of the serious games movement, planting seeds that are springing new growth everywhere we look.” —HENRY JENKINS, author of Convergence Culture: Where Old and New Media Collide

JAMES PAUL GEE

REALITY IS BROKEN

WHY GAMES MAKE US BETTER AND HOW THEY CAN CHANGE THE WORLD

JANE McGONIGAL
BETRAYAL
You traitorous swine.
### Level Metrics for OSY

<table>
<thead>
<tr>
<th>Counter Metrics</th>
<th>LVL_00</th>
<th>LVL_01</th>
<th>LVL_02</th>
<th>LVL_03</th>
<th>LVL_04</th>
<th>LVL_05</th>
<th>LVL_06</th>
<th>LVL_07</th>
<th>LVL_08</th>
<th>LVL_09</th>
<th>LVL_10</th>
<th>LVL_11</th>
<th>LVL_12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Started Level</td>
<td>27</td>
<td>20</td>
<td>17</td>
<td>19</td>
<td>17</td>
<td>16</td>
<td>16</td>
<td>13</td>
<td>12</td>
<td>9</td>
<td>7</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Continued</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Cregenated</td>
<td>2</td>
<td>1</td>
<td>8</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Total Deaths</td>
<td>2</td>
<td>1</td>
<td>8</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>13</td>
<td>13</td>
<td>17</td>
<td>17</td>
<td>19</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Burst</td>
<td>8</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Death Crystal</td>
<td>2</td>
<td>1</td>
<td>7</td>
<td>2</td>
<td>9</td>
<td>17</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Burst in Pure Water</td>
<td>14</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Note: percents are measured against the views either all time or the relevant data.
Fell asleep waiting in line at the DMV

Woke up 5 minutes before my turn

At the DMV

They called my number!!
Gamers solve puzzle which stumped scientists for years and could hold key to curing AIDS

By LAURIE WHITWELL
UPDATED: 06:24 EST, 19 September 2011

Videogame players have solved a molecular puzzle that stumped scientists for years and could hold the key to finding a cure for AIDS.

A team of gamers needed just ten days to produce an answer to an enzyme riddle that had eluded experts for more than a decade.

The feat was accomplished using a collaborative online game called Foldit, which has been likened to Tetris and encourages players to fold a protein into intricate shapes.
Registration successful. You are now logged in.

Click to learn how you contribute to science by playing Foldit.

What's New

Developer Preview Release

Hey everyone,

We've just released an update to the developer preview. You can find a list of changes below:
Umbrella of Crowdsourcing

Crowdsourcing
Getting a crowd of people to help you with a task that’s typically performed by a single individual or group.

Can be divided into 4 groups:

- **Microtasks**
  - Breaking a large project into tiny, well-definable tasks for a crowd of workers to complete.
  - Great for: Data validation, research, image tagging, translation
  - Major platforms: Mturk, Microtask.com, Clickworker, Lingotek

- **Macrotasks**
  - Presenting a project to the crowd & asking them to get involved with the portions they’re knowledgeable in. Participants are empowered to determine the best course of action.
  - Great for: R&D, product innovation
  - Major Platforms: Quirky, Innocentive, Chaordix

- **Crowdfunding**
  - Asking a crowd to donate a defined amount of money for a specified cause, project, or other use within a predetermined timeframe. If your goal isn’t met, all donations are refunded.
  - Great for: Project fundraising, disaster relief, artistic support, startups, market research
  - Major platforms: Kickstarter, crowdrise, SeedUps

- **Contests**
  - Asking a crowd for work and only providing compensation to the chosen entries.
  - Great for: Logo design, business names
  - Major platforms: 99desings, crowdSPRING, Squadhelp

Crowdsourcing’s proposed taxonomy. Learn more & voice your ideas at [http://dailycrowdsource.com/taxonomy](http://dailycrowdsource.com/taxonomy)
The purpose of exploitationware
A look at exploitationware's applications and limitations.

by Gabe Zichermann | @gzicherm | Comments: 15 | 26 April 2011

Frequently couched either as a question about demographics or as a personal statement ("I don't ever play games"), exploitationware is dogged by questions of suitability of purpose, appropriateness of context, or even the semantic conflict around the use of the word "games" itself. Whether you fall into the supporter or detractor camp, it's clear that exploitationware is inspiring debate and raising questions: play vs. work, intrinsic vs. extrinsic motivation, authenticity vs. contrivance, just to name a few.

So perhaps the best place to start addressing these issues is with the basics: what can exploitationware do, why do we care, and what are its limitations.

Exploitationware's main purpose is to help people get from point A to point B in their lives — whether that's viewed through the lens of personal growth, societal improvement or marketing engagement. We all have the intrinsic desire to be the best possible people we can be, and to make the world in our image of its maximum potential. However, most of us lack the systems thinking (and discipline) required to get to that goal. What games do well is expose complex, learnable systems that users can engage with to achieve personal mastery — and thus accomplish something aspirational.

Weight Watchers is an example. If you ask someone who has successfully lost weight how he or she did it, they might answer with an emphatic "Weight Watchers!" What they don't say is "diet and exercise," which is actually what they did to lose the weight, regardless of pedagogy. Mastering the system — in this case Weight Watchers' gamey approach of points, levels, challenges, leader boards, etc. — becomes what the user most identifies with as having caused their success.

In this way, creating complex systems that can readily be mastered by users across a span of time produces a unique affinity between player and brand. If successful, it's a lifelong connection that transcends the mere exchange of cash and clicks common to most commercial connections. Good exploitationware has more in common with other complex systems in the world around us than it
CLASH is bad in protein!
Tell me more...

This is a public communication channel and may be seen by outside parties.

Migamolec: how can i solve this puzzle? I'm not getting to flip any sheet!
Migamolec: IMAGE: http://fold.it/portal/files/chatimg/frc_44657_15

Cassandraberry81997: In ppl
Truestone: hi cassandra
Cassandraberry81997: :)
## Top Groups

<table>
<thead>
<tr>
<th>RANK</th>
<th>GROUP</th>
<th>GLOBAL SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Anthropic Dreams</td>
<td>4739</td>
</tr>
<tr>
<td>#2</td>
<td>Contenders</td>
<td>4338</td>
</tr>
<tr>
<td>#3</td>
<td>Void Crushers</td>
<td>3531</td>
</tr>
<tr>
<td>#4</td>
<td>Beta Folders</td>
<td>2918</td>
</tr>
<tr>
<td>#5</td>
<td>Go Science</td>
<td>2659</td>
</tr>
<tr>
<td>#6</td>
<td>L'Alliance Francophone</td>
<td>1976</td>
</tr>
<tr>
<td>#7</td>
<td>Gargleblasters</td>
<td>1892</td>
</tr>
<tr>
<td>#8</td>
<td>Clear the Way</td>
<td>1622</td>
</tr>
<tr>
<td>#9</td>
<td>An Art That's Smart</td>
<td>1444</td>
</tr>
<tr>
<td>#10</td>
<td>Another Hour Another Point</td>
<td>1252</td>
</tr>
<tr>
<td>#11</td>
<td>Russian team</td>
<td>1176</td>
</tr>
<tr>
<td>#12</td>
<td>Team Hungary</td>
<td>951</td>
</tr>
<tr>
<td>#13</td>
<td>SETI.Germany</td>
<td>727</td>
</tr>
<tr>
<td>#14</td>
<td>Richard Dawkins Foundation</td>
<td>487</td>
</tr>
<tr>
<td>#15</td>
<td>FoldIt@Netherlands</td>
<td>268</td>
</tr>
<tr>
<td>#16</td>
<td>Repro-men</td>
<td>221</td>
</tr>
<tr>
<td>#17</td>
<td>It's over 9000!</td>
<td>176</td>
</tr>
</tbody>
</table>
PUBLICATIONS PRODUCED AS A RESULT OF THIS RESEARCH


Khatib, F; Cooper, S; Tyka, MD; Xu, KF; Makedon, I; Popovic, Z; Baker, D; Foldit Players. "Algorithm discovery by protein folding game players," PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, v.108, 2011, p. 18949. View record at Web of Science

Gilski, M; Kazmierczyk, M; Krzywda, S; Zabranska, H; Cooper, S; Popovic, Z; Khatib, F; DiMaio, F; Thompson, J; Baker, D; Pichova, I; Jaskolski, M. "High-resolution structure of a retroviral protease folded as a monomer," ACTA CRYSTALLOGRAPHICA SECTION D-BIOLOGICAL CRYSTALLOGRAPHY, v.67, 2011, p. 907. View record at Web of Science

Khatib, F; DiMaio, F; Cooper, S; Kazmierczyk, M; Gilski, M; Krzywda, S; Zabranska, H; Pichova, I; Thompson, J; Popovic, Z; Jaskolski, M; Baker, D; Foldit Contenders Grp; Foldit Void Crushers Grp. "Crystal structure of a monomeric retroviral protease solved by protein folding game players," NATURE STRUCTURAL & MOLECULAR BIOLOGY, v.18, 2011, p. 1175. View record at Web of Science

Welcome to Eterna!

You play by designing RNAs, tiny molecules at the heart of every cell.

Latest news

Closing "FMN Binding Shapes" and "Hands and Finger"
10 Jan 2013

Call for 20 player lab puzzles
10 Jan 2013

Dev chat scheduled on 6pm EST - chat log added
09 Jan 2013

Play Now! ➤

Project Combines Global Online Design Challenge With Lab Experiments

Contact: Byron Spice / 412-268-9068 / bspice@cs.cmu.edu

PITTSBURGH—An enthusiastic group of non-experts, working through an online interface and receiving feedback from lab experiments, has produced designs for RNA molecules that are consistently more successful than those generated by the best computerized design algorithms, researchers at Carnegie Mellon University and Stanford University report.

Moreover, the researchers gathered some of the best design rules and practices generated by players of the online EteRNA design challenge and, using machine learning principles, generated their own automated design algorithm, EteRNABot, which also bested prior design algorithms. Though this improved computer design tool is faster than humans, the designs it generates still don't match the quality of those of the online community, which now has more than 130,000 members.

The research will be published this week in the Proceedings of the National Academy of Sciences Online Early Edition.

"The quality of the designs produced by the online EteRNA community is just amazing and far beyond what any of us anticipated when we began this project three years ago," said Adrien Trejulie, an assistant professor of computer science and robotics at Carnegie Mellon, who leads the project with Riju Das, an assistant professor of biochemistry at Stanford, and Jeehyung Lee, a Ph.D. student in computer science at Carnegie Mellon.
Meaningful Play…
Games are Meaningful…
Games are Full of Meaning….
Games Make Meaning….
Thank You