"Flanagan and Nissenbaum's refreshing promotion of values in game design sets a high bar for those designing game programs at a number of universities and non-profits and refuses to separate ethics from education and design."

Values at Play:
Report on Findings, Publications, Dissemination, and Future Directions

The Tiltfactor Laboratory, Dartmouth College, and NYU's Steinhardt School

The Values at Play (VAP) project is dedicated to researching, promoting and supporting the processes through which systems designers can embed humanistic values in their work. Many designers have already begun work in this area by creating "activist games" or "games for good" that teach and inspire social activism, empathy, and other values. Educational games are another aspect of this work as the goal is beyond mere entertainment. Our Values at Play team has developed the first reliable frameworks for understanding how particular elements of the design process shape the values content of software systems like games. By addressing this gap in designers' knowledge, VAP is an important part of the burgeoning science of design.

Products and Achievements

- **Values-Conscious Game Design Curriculum** – Complete teaching kits for a 2-6 week values based curriculum for the college level. This was researched
- **Values at Play Methodology** –We developed a Values at Play methodology and developed a streamlined heuristic, available online and articulated in papers.
- **Interviews with Experts** –Video interviews with game design experts, available on our project web site, help our team articulate the connection between ideas about values in games to design practices.
- **Urban Games** – Prototyping dynamic, urban social games in New York such as Massively Multiplayer Mushu and Massively Multiplayer Soba, we translated the design goal of diversity to the game rules and goals for an enacted, performative take on values integration
- **Grow a Game Cards** – A colorful, professionally produced brainstorming tool being used in top game design programs at major universities, in game design companies, and in high school programs; The second iteration comes in three different sets (Adult Beginner, Teen Beginner, Expert). Thousands of participants since 2007 have brainstormed games using these values-centered tools.
- **Vexata Board Game** – Game for middle school kids to debate and discuss human values in a systematic structure provided via the game format. Created for after school informal learning contexts. Used in The Boys and Girls Clubs of America, reaching 4,000 programs across the country.
- **Layoff Game** –Played by one million players and covered in international news, LAYOFF touches on key values in a casual online games, exploring empathy
- **Profit Seed** – A casual online game to provoke discussion and raise awareness about social values using a neutral control interface paradigm.

Findings

Our Findings

The Values at Play curriculum was implemented and assessed at leading American game design programs, including University of Southern California, Georgia Tech, University of California Santa Cruz, University of California San Diego, Rochester Institute of Technology, and Hunter College. The assessment incorporated survey-based quantitative research, post-unit focus groups, and qualitative assessment of students' design journals and work. Our findings were encouraging: By and large, students using VAP curricular materials took on a critical posture towards the clichés and assumptions of standard design practice, which led them to explore novel approaches to their work. Ultimately, they produced games their instructors considered more novel and expressive than students' typical output in standard design courses.

That we can actually foster creativity through our methodology by imposing design constraints in the addition of human values to the design process is an inspiring finding. The methodology actually fostered, rather than squelched, creative responses to design challenges. We were surprised that rather than make games more didactic or boring, by asking designers to consider values, the imposed constraints surprisingly resulted in greater creativity and robust, engaging games. In our final year, we are parsing the rich data and writing results.

Future Directions

Much work remains to be done at the intersection of human values and play. One initiative is to create game assessment cards for helping designers evaluate values after they have prototyped their work digitally. A second important direction is to create some of the games designed but not implemented in the workshops, to be able to verify that ideas translate into testable designs in most cases. We are interested in carrying out designs with MMORPG developers to explore the dynamic and social relationships games provide. We would like to reach out to big corporations to create receptivity to these ideas, to promote these works.

As we move forward we will pursue increasingly enhanced assessment of translation from broad aims in values investigation to the gritty details in how values emerge from specific applications.

Publications:

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Flanagan, "Politicising Playculture." *GAME/PLAY Exhibition Catalog*. HTTP Gallery, London 2006.

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About the Project Investigators:
Dr. Mary Flanagan is the Sherman Fairchild Distinguished Professor in Digital Humanities and she leads the Tiltfactor Laboratory at Dartmouth College. Flanagan has over 20 years of experience in software design, and has garnered over 20 international awards for this work. Flanagan created *The Adventures of Josie True,* the award winning science and mathematics environment for middle school girls (NSF 99). Known for her theories on playculture, activist design, and critical play, Flanagan has achieved international acclaim for her novel interdisciplinary work, her commitment to a theory/practice dialogue, and contributions to social justice design arenas. Flanagan's work has been supported by commissions including The British Arts Council, the National Endowment for the Humanities, the ACLS, the Robert Wood Johnson Foundation; she has been PI or co-PI on six National Science Foundation research awards. She has served on the faculty of the Salzburg Global Seminar & the White House Office of Science & Technology Policy Academic Consortium on Games for Impact. Flanagan is the Sherman Fairchild Distinguished Professor in Digital Humanities at Dartmouth College.

Flanagan with collaborator Helen Nissenbaum has broken ground by investigating how games can be redesigned to prioritize human values, proving that using humanist principles to shape software development and guide the design process is a means of innovation.

Dr. Helen Nissenbaum, Professor of Culture and Communication, Computer Science the Information Law Institute, New York University, pursues research in social, ethical, and political aspects of information and communications technology on topics such as privacy, computer security and trust, property rights, electronic publication, accountability, the use of computers in education. Nissenbaum is the author of *Privacy in Context: Technology, Policy, and the Integrity of Social Life* (Stanford University Press, 2009). She advises on The Social, Culture & Ethical Dimensions of "Big Data," with the White House Office of Science and Technology Policy, the NYU Information Law Institute and the Data & Society Research Institute.

Research Talks. Our team has given over 30 keynotes, lectures, and workshops about Values at Play, and the demand continues to grow. We have been running Grow-a-Game Workshops to design and non-

design groups at: American Educational Research Association Conference, Technology for Peace Conference, Games, Learning & Society, Games for Change, Digital Games Research Association, and the Game Developers Conference as well as:

- IEEE Intnl. Conference on Digital Game & Intelligent Toy Enhanced Learning
- Cornell University
- Duke University
- GameLab
- RPI
- South x Southwest Austin
- RISD Digital Media Program
- City University Hong Kong
- IndieCade, Culver City CA

- School of Visual Arts
- University of Wisconsin
- Bowling Green State University
- The Neuberger Museum
- CUNY Grad Center
- Mobilized Conference NYC
- Grassroots Media
- Columbia University
- U-Quebec at Montreal
- Carnegie Mellon University
- Hunter College

- Transart Institute
- Rutgers
- NYU
- Games for Change Conf.
- Vienna Games Conf.
- V2 Lab Rotterdam
- Games, Learning and Society Conf.
- University of Modena
- Computer Space, Bulgaria

About the Tiltfactor Laboratory.
Tiltfactor invents new ways of thinking about important social issues through engaging games and play. Founded and directed by leading innovator Dr. Mary Flanagan, Tiltfactor is the award-winning design studio and research laboratory that takes on problem areas of national need and creates solutions through playful design.

Our team harnesses the power of storytelling, systems thinking, and empathy in games that create powerful experiences to make positive differences in people's lives. The Tiltfactor team conducts rigorous studies that demonstrate the impact of these solutions and verify the efficacy of their methods. The group actively publishes results in scholarly journals. As trailblazers in the field of meaningful game design, Tiltfactor asks big questions about the intersections between psychology, learning, design, and technology. We are shaping not only the path of interactive design, but also 21st-century cognitive, social, and ethical skills.

GAMES PROMOTING PUBLIC HEALTH
Our health-related games foster self-care and disease prevention and promote a greater understanding of modern healthcare delivery systems. They help players think deeply about important issues such as vaccination, and the health conditions and risk factors faced by hundreds of thousands of people. The wide range of games we have created includes board games that educate the consumer, digital games that encourage vaccination, and even a physical sport: RePlay Health, which explores solutions to the American health care system cost crisis. We have worked with the Robert Wood Johnson Foundation, the Dartmouth Center for Health Care Delivery Science, the Minister of Health of Rwanda, and the Rippel Foundation.

GAMES ADDRESSING COGNITIVE BIASES
These games aim to improve communication and cooperation skills, to reduce players' prejudices and biases, and to empower local communities in collaborative decision-making. For example, *Buffalo* and *Awkward Moment*, pro-social party card games, were among the games developed as part of the National Science Foundation-funded project "Transforming Science, Technology, Engineering, and Math (STEM) for Women & Girls: Reworking Stereotypes & Bias."

CROWDSOURCING
With national libraries and museums, Tiltfactor is creating game-based engines for knowledge generation. Metadata Games is a crowdsourcing platform for humanities institutions that uses games to tag artifacts. The project is supported by an NEH Digital Implementation grant; see http://metadatagames.org/.

OUR RESEARCH

Our studies demonstrate that Tiltfactor produces meaningful games with cutting edge, empirically supported positive social and cognitive outcomes. Our randomized experimental study on *Buffalo* showed that the game significantly decreases players' prejudice and improves their understanding of the complexity of social identities. *Awkward Moment* triples players' association between women and science, and inspires greater assertiveness of response in confronting social biases. *POX* research demonstrates that a majority of players gain a nuanced understanding of herd immunity (disease prevention), and both *POX* & *ZOMBIEPOX* heighten players' perception of the value of vaccination and significantly improve systems thinking. We are actively studying the nuances between analog and digital platforms, and new games such as *Awkward Moment At Work, Luminaries, and POX: Save the Puppies* are under current study.