Values at Play:
Integrating Human Values in Games

Curriculum & Teaching Guide

Contact information:

212.998.5118

jonathan.belman@gmail.com (Program Assistant)

www.valuesatplay.org

Summary

The Values at Play (VAP) project was conceived with the intent of investigating how video game designers consciously and unconsciously embed social values into video games through narratives and game mechanics. This curriculum, a corollary of the research project, will introduce designers to a systematic method for *discovering, analyzing,* and *integrating* values into their design work.

Project objectives

1. To develop and support design practices that intentionally include social, moral, and political values, alongside traditional goals such as playability and usability, in the set of criteria by which video games are conceived, constructed, and judged

2. To foster skills associated with critical reflection (or, the ability to examine one's assumptions and presuppositions) as designers approach design problems and implement solutions in the form of game elements through an iterative game design process

The VAP curriculum at a glance (or, what we're asking of you…)

This is a *4-week unit* (that's only a suggestion—you should feel free to pace it as needed) that introduces students to the concept of values becoming embedded in games through choices that design teams make about rules, mechanics, and narrative throughout the iterative design process. *Following are the major components:*

1. An on-line survey that your students will complete before the unit begins

2. Readings and class activities that introduce and reinforce the concept of values becoming embedded in games

3. On-line design journals for your students to reflect on their experiences

4. A game prototype (paper for less advanced students, functional for experienced classes) as a final project for the unit

5. A second on-line survey completed at the end of the unit

Have fun!

Table of Contents

Unit overview

Unit overview and related materials

The teaching guide is divided into 5 sections:

1. ***Weekly lesson plans:*** There are **4 lesson plans,** corresponding to each of the classes that will lead to the final project. Each contains the following subsections:

   - *Class overview:* Provides you with a brief overview of the content and activities that should be covered during that class.

   - *Focusing questions:* These address the "essential ideas" for the class and may help you frame the content. You might choose to share these questions with your students in order to provide them with a reference for analyzing the day's readings and activities.

   - *Class activity:* Each class will have an activity in which students will have the opportunity to practice some aspect of the Values at Play methodology. These activities should be performed in groups in order to give your students the opportunity to dialogue and engage in critique with one another.

   - *Readings for next class:* A list of the articles that are to be read for the next class (the titles are hyperlinked if you are using this material on-line)

     o **About the readings:** We've included readings on design and design heuristics for those who may be less familiar with these concepts. While we realize that some of you are teaching classes in which your students are already acquainted with an iterative design framework, your students may still find them useful

     o **Essential readings, which focus on values in design, are marked with an asterisk (*)—please require your students to read these.**

   - *Assignment for next class:* The activity that groups will work on before the next class

   - *Design journal prompts for out of class activities:* These questions are posted to guide your students' journal entries for each class. If students are working in groups, they should still post to their own journals. You may opt to have students respond to one another's posts in order to encourage an on-line dialogue, though it is not necessary for our research purposes.

2. ***Teaching materials:*** Additional materials that you might need for the classes are included in this section. <mark>**You can access all of the documents associated with this unit from the Values at Play web site. http://www.valuesatplay.org/research.html**</mark>

3. ***Reading summaries:*** We have included summaries that highlight the major themes for each of the weekly readings. All of the readings are available for download as pdfs from the Values at Play web site: http://www.valuesatplay.org/research.html#readings

4. ***Research materials:*** This section contains all of the materials that you will need in order to have your students complete the data collection component of the class, including:

   - Verbal instructions that you can give your students regarding their participation in this research project

   - Consent forms that you will need to print, ask those who volunteer to participate to sign, and return to us

5. ***References:*** All of the readings cited in this guide are listed in this section. Additionally, we have provided links to additional materials that you may find interesting and useful.

Scope of the unit

The Values at Play unit consists of 4 classes and should take approximately 1 month to complete (this could be longer if yours is a programming-intensive course). A brief synopsis follows:

Week 1: *In-class:* Students complete the pre-class, on-line survey; introduction to core concepts; breaking into groups and brainstorming values with values cards activity (description under Week 1 lesson plan); *For next week:* Students will create a video clip containing a segment from a video game that reflects a particular value

Week 2: *In-class:* Review readings; review videos from the values cards activity; students break out into groups and brainstorm games based on a limited set of values; begin paper prototyping the best of the designs; *For next week:* Students continue work on their designs

Week 3: *In-class:* Review readings; finalize prototypes; play testing; *For next week:* Students continue to work on their designs

Week 4: *In-class:* Review readings; implementing the game design; verifying values; play testing; information on submitting final prototypes to the on-line game repository; students complete the post-class survey

Working in groups

Though it isn't necessary, we encourage you to have your students work in groups as they are completing their projects for this unit. Part of the opportunity to engage in critical analysis of their designs will arise from their interactions with one another as they contribute their own perspectives and question one another about their motives and opinions as they work on their game prototypes.

- **Suggested reading on working in groups:** If your students are not used to working in design teams and you are considering asking them to do so, you might want to have them read Tom Erickson's "Lingua Franca's for Design: Sacred Places and Pattern Languages": http://www.visi.com/~snowfall/LinguaFranca_DIS2000.html

Data collection

Your students' feedback is vital to the success of our research project, as we will analyze their work and writings during your class in order to understand their experiences learning the Values at Play framework. To that end, we have developed **two on-line surveys** (one conducted before the class and the other after) and have created **on-line design journals (as wikis; more about these below)** in order for your students to record their reflections and experiences during the class. We've also created weekly "prompts," or questions, around which to frame their journal entries, but they should not limit themselves to them. Please encourage them to be copious! If they are working as members of a group, we would still like for them to post individually to the blogs in order to analyze as wide a variety of experiences as possible.

The Contest!

One motivator for your students in this unit may be the *Values at Play Game Contest,* with two final submission dates each year during the research period: the next dates are January 1st and July 1st, 2008. We would love for your students to submit working game prototypes! It may also help for them to know that the first place prize is an Apple iphone (or an equivalent gift certificate)…We will begin accepting submissions for the contest on October 1st, 2007 and will e-mail you instructions for submitting the games to our repository.

Thank you for your willingness to explore new ways of considering social values in video games! We will keep you apprised of our research findings over the next few years, as well as continue to foster a community of those interested in this topic. We hope that you'll find it as exciting as we do and that, along with your students, you might consider some new ways of looking at values in game design!

Week I

Before this class

Before the beginning of the first class (at least one week before), you should contact your students in order to ask them to complete the following readings:

1. * Weber, R.N. (1997). Manufacturing gender in commercial and military cockpit design. *Science, Technology, & Human Values, 22*(2), 235–253. http://www.valuesatplay.org/classreadings/weber_cockpit_design.pdf

2. * "Manhunt 2 Banned in UK" (Gamespot, June 19, 2007): http://www.gamespot.com/news/6172704.html

3. * "Saving the World, One Video Game at a Time" (New York Times, July 23, 2006): http://www.nytimes.com/2006/07/23/arts/23thom.html?ex=1185076800&en=2365cab8f8972ab8&ei=5070

4. * "Shock, Anger over Columbine Video Game" (Washington Post, May 20, 2006): http://www.washingtonpost.com/wp-dyn/content/article/2006/05/19/AR2006051901979.html

   a. Link to *Super Columbine Massacre* download: http://www.columbinegame.com/

   b. Link to Artist's Statement about *Super Columbine Massacre:* http://www.columbinegame.com/statement.htm

Suggested reading: Gonzalo Frasca's (2004) "Videogames of the oppressed" is an excellent introduction to the topic of games as tools for consciousness raising and for addressing social issues: http://www.electronicbookreview.com/thread/firstperson/Boalian

Some background for instructors

- **The "VAP Quick Reference," beginning on page 33, is a useful summary of the 3 phases of the Values at Play methodology:** *Discovery, Translation,* **and** *Verification.* **It's also available on-line:** http://www.valuesatplay.org/classreadings/vapquickref.pdf

- For a comprehensive overview of the Values at Play research project, including a detailed description of the methodology, you may wish to read Flanagan, Howe, and Nissenbaum (2006), "Values in design: Theory and practice":

   http://www.nyu.edu/projects/nissenbaum/papers/Nissenbaum-VID.4-25.pdf

- For additional background on teaching the concept of social values to those in technically-oriented fields, you might want to read Friedman and Kahn's (1994) "Educating computer scientists: Linking the social and the technical":

   http://www.valuesatplay.org/classreadings/friedman_kahn.pdf

- For additional background on the *Grow-a-game!* exercise that you will be implementing in the first class, you may want to read "A method for discovering values in digital games" (Flanagan, Nissenbaum, Belman, & Diamond, forthcoming): http://www.valuesatplay.org/classreadings/method_digra2007.pdf

First steps (to complete BEFORE the first class of the unit)

Consent forms and recruitment letters

<mark>We need your students' written permission in order for them to take part in this study.</mark> Please clarify that their participation is voluntary and that the study will not affect their grades in any way. We've provided printed copies of the consent forms, but if you need additional copies you'll find them in the *Research and data collection* section of this guide. They're also available on-line: http://www.valuesatplay.org/research.html. **You'll need 2 copies of each of these forms** for your students—one is to be signed and returned to you (and eventually mailed to us), the other is theirs:

1. Consent form for the Steinhardt School of Education
2. Consent form for Hunter College
3. *For New York City classes only:* Students in New York City will be participating in a focus group at the end of the unit and they will need to sign the "Hunter College Video Recording Release Form"

Students should also be given 1 copy of each of the following to retain for their own records:

1. Steinhardt School of Education recruitment letter
2. Hunter College recruitment letter

On-line survey

After signing the consent forms, please ask your students to complete the on-line, pre-class survey: it can be accessed at the following URL (this should take about 20 minutes): http://www.surveymonkey.com/s.aspx?sm=zmNY3yeAtCz2VxAj5Zdr6w_3d_3d

Students may also complete the survey as a pdf form, accessible at http://www.valuesatplay.org/research.html#researchmaterials if they are unable to access it through SurveyMonkey.

Oral statement

You will find a "Faculty Oral Statement" in the *Research and data collection* section on p. 38. You may choose to use this as a script for introducing the research project to your students, as it contains a summary of the participation requirements.

Class 1 overview

In this class, your students will become familiar with the idea of values embedded in games. Use the readings that you assigned before the class in order to begin a discussion about how (and if) values can become embedded in games by game designers. Rachel Weber's "Manufacturing gender in commercial and military cockpit design" is a good way to explore how social biases can become incorporated into system design. Are there corollaries in game design? How are values around issues such as gender equity and the roles that are attributed to femininity and masculinity reflected in technology design? Who is responsible for values becoming embedded in technologies? How do video games come to reinforce (if they do) stereotypes and biases? Can your students provide examples of video games and games that represent particular social values or designers' assumptions about "how the world should be represented"?

The articles from the New York Times, the Washington Post, and Gamespot (as well as the links to *Super Columbine Massacre)* are provided in order to generate discussion around the various meanings that games can hold. With so much discussion around video games (not only for commercial entertainment games, but for "serious games," as well), it's clear that game narratives and mechanics do express social values. Further, the decisions that designers make about constraints and affordances within a game world do permit or inhibit activities that are in keeping with or in contrast to the values of a broader community.

As a class activity, your students will use a set of Grow-a-game! cards to choose a value or values and then explore them within the context of a commercially produced video game. For next week, they will upload a video that shows an in-game example of the value(s) in action.

Focusing questions

"If games can't communicate ideas, then why does he care who buys them?"

(From: http://www.penny-arcade.com/comic/2002/04/26)

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1. The cartoon above refers to a ruling by Judge Stephen Limbaugh, Sr. in 2002 that video games do not convey ideas and therefore do not enjoy constitutional rights. Do video games convey ideas and values? If so, how?

2. Do games embody designers' perspectives on social values? If so, how?

3. How do players perceive values as being embedded in games? Are they conscious of them?

Class activity

Using the Grow-a-game! cards

The *Grow-a-game!* cards are designed to stimulate thinking about how social values, as understood and expressed by designers, come to be represented in mechanics and other game elements. An overview of the cards is available on pages 31–32. Students should break out into small groups; provide each group with a deck of cards—this is a two-card exercise.

1. Groups should decide how long the brainstorming for each round will last (we recommend 5 minutes)

2. Shuffle the cards

3. Each player should draw a Goal card and an Action card and privately brainstorm a game that addresses the value on the Goal card using the mechanic from the Action card until time runs out

4. Players take turns explaining the game they have imagined

5. After all of the players have explained their games, they can vote for their favorite by giving the designer a Vote card

6. After three rounds, the player with the most vote cards wins

At the end of the activity, each group should report out on one of the games that they have discussed. They should discuss how the value(s) is embedded in narrative, rules, or mechanics (or some combination of the three). Do the other groups agree that the value is represented?

Readings for next class

1. * Flanagan, M. & Nissenbaum, H. (2007). A game design methodology to incorporate social activist themes. *Proceedings of CHI 2007.* New York: ACM Press, 181–190. http://www.valuesatplay.org/classreadings/VAP-CHIfinal06Sub.pdf

2. * Friedman, B. & Nissenbaum, H. (1996). Bias in computer systems. *ACM Transactions on Information Systems, 14*(3), 330–347. http://epl.scu.edu:16080/~stsvalues/readings/biasincomputers.pdf

3. * The *Discovery* section of the *VAP Quick Reference* (pp. 1–2): http://www.valuesatplay.org/classreadings/vapquickref.pdf

4. Zimmerman, E. (2003). Play as research: The iterative design process. http://www.ericzimmerman.com/texts/Iterative_Design.htm

Suggested reading: If your students are unfamiliar with the concepts of constraints and affordances, you may wish to refer them to Donald Norman's, *The Design of Everyday Things*. You could also have them look at the following page on his web site: http://www.jnd.org/dn.mss/affordances_and.html.

Assignment for next class

Draw 2 Goal cards from a *Grow-a-game!* deck and tell students that they are to select one of the values and, individually, find an example of a commercial video game that represents the value. Students will create a short video clip (using a video camera, they might narrate as they film an example from the game) that documents the value in a game—you'll find an example here: http://www.youtube.com/v/hRq81IZzp14. If you have a large number of students, you may want xto have them complete this assignment with the groups that they were working with during class.

Design journal prompts for out-of-class activities

1. What was the experience of using the *Grow-a-game!* cards like? Was it difficult to brainstorm values in the game that you selected with the values cards? How so?

2. Using the cards, how was it to try to use the mechanic to represent the value?

3. What was it like to explore values in games with group members? Did any emotions come up (for you or anyone else) as you spoke about games and values?

4. For the out-of-class video activity:

   a. How difficult was it for you to discover an example of this value in a game? Have you ever done anything like this before (analyze game elements for value content)?

   b. Do you think that others might see this value represented in the game?

   c. Do you think that the game's designer(s) thought consciously about the value being reflected in the game?

   d. How did you make the connection between game elements (narrative, rules, or mechanics) and the value?

   - **The design journals can be accessed on-line at:**

     http://www.valuesatplay.org/research.html#designjournals

   - **We are using private wikis for the journals—your students will find instructions for using them once they access the wikis from the link above**

After this class

In addition to any printed surveys that you may have (you'll only have these if students were unable to complete the survey on-line), please place the signed consent forms (there should be 2 copies for each of your students: one for Hunter College, the other for NYU) into the stamped envelope that we have provided and mail it off at your earliest convenience. Thank you!

Class 2 overview

Begin this class by reviewing the videos that individual students or groups have uploaded. Each student (or group) should take a few minutes to discuss the game and how it represents the value(s) that they selected from the values card deck. Do other groups agree or disagree that the game elements represent this value? Are there alternative views?

The readings are intended to introduce students to the Values at Play methodology, to the concept of bias becoming embedded in computer systems, and to the iterative game design process. They tie together by addressing systematic methods for game design, specifically around the issue of social values becoming embedded in game elements. Your students should begin to become comfortable with identifying values that will be represented in their game designs, as well as with an iterative process through which they reflect critically on their designs, paying attention to assumptions and decisions that they have made about representation, rules, and mechanics. This week, they will begin using the *Discovery* phase of the methodology.

The groups will break out and, following the Values at Play methodology, begin brainstorming games that represent a value that they have chosen. The groups should sketch at least three different games and then begin paper prototyping the best of the three.

Focusing questions

1. Using the Values at Play methodology, how can you systematically begin to explore and discover values to represent in video games?
2. How can you ensure that every step of the design process is focused on the chosen value?

Class activity

Ask your students break out into small groups—these groups are going to be working together for the remainder of this unit, so they should ensure that there aren't conflicts that can't be resolved. If you do not typically have your students working in groups, then they should work individually as they ordinarily do. Following the Values at Play methodology, they should begin brainstorming games that represent a value that they have chosen. Group members can use the values cards to help them choose a value, or they may agree upon a value on their own. Each group member should sketch out at least one idea for a game. After agreeing upon the design that they all want to pursue,

they should begin to flesh out the design and begin paper prototyping. You should circulate among the groups, raising issues about values representation and offering suggestions and critiques.

Readings for next class

1. * Belman, J. (2007). Game reviews.
   http://www.valuesatplay.org/classreadings/jbgamereviews.pdf

2. * Winner, L. (1988). Do artifacts have politics? In L. Winner, *The whale and the reactor: A search for limits in an age of high technology.* Chicago: The University of Chicago Press. pp. 19–39. http://epl.scu.edu:16080/~stsvalues/readings/Winner.pdf

3. * The *Translation* section of the *VAP Quick Reference* (pp. 2–4):
   http://www.valuesatplay.org/classreadings/vapquickref.pdf

4. Desurvire, H., Caplan, M., & Toth, J. A. (2004). Using heuristics to improve the playability of games. CHI 2004, Vienna, Austria:
   http://www.valuesatplay.org/classreadings/desurvirePlayabilityHeurist.pdf

5. Orr, M. (2005). User-centered design. http://linuxgazette.net/116/orr.html

   A note about this week's reading: We have included the Belman game reviews in order to expose students to one possible interpretation of how values are embodied in and represented by particular commercial games. We are not suggesting that these are the *only* interpretations. Rather, they should introduce students to a mode of analyzing games for social values based on an individual's subjective perspective, as well as a commentary on the behaviors that are afforded and constrained by a game's mechanics.

Assignment for next class

Students should continue to paper prototype their designs throughout the week, respond to the journal prompts, and post their experiences of the design process using this methodology.

Design journal prompts for out-of-class activities

1. How challenging was it to discover the value that you are using for your prototype? How did you settle upon the value? What makes this value important to you? To society?

2. Values in games can arise from many sources: narrative, character representation and backgrounds, the game environment, mechanics (constraints and affordances), and underlying rules, to name a few. Which elements of your game design will represent the value that you have chosen? Why have you chosen these elements?

3. How have stakeholder values been appraised and integrated into your design?

Class 3 overview

This week, your students will continue working on their prototypes, focusing on translating the values that they have identified into game mechanics, rules, and narrative. The *Translation* segment of the Values at Play framework involves operationalizing abstract concepts such as social values into identifiable features of a game. Game elements may support or oppose a particular value through representation or by constraining/affording certain player behaviors.

This week's readings continue the discussion of values embodied in technological artifacts with Winner's "Do artifacts have politics?" This idea is contrasted with one that is often accepted without question, namely, that technology is neutral and promotes or obstructs values only through its uses by individuals. The other readings focus on user-centered design and using heuristics in order to evaluate game playability. Students (or groups) should consider how to include values into the heuristics by which they evaluate their games for playability. Questions to ask might include:

1. What is the value on which we are focusing?
2. Do the game elements that we have identified as representing the value do so?
3. Have design changes over a number of iterations introduced any bias or taken the game design away from addressing the value?

Focusing questions

1. How are values in video games operationalized?
2. Using an iterative design process, how can designers ensure that game elements continue to represent the value?

Class activity

Students should begin finalizing their paper prototypes and, if there is time, begin implementation. Design work includes finalizing game mechanics in order to support the se;ected value.

Time permitting (and you might require groups to do this out of class), students should invite members of other groups to begin play testing their prototypes. They may choose to use the heuristics included in the Desurvire, Caplan, and Toth (2004) article in order to evaluate the game's playability.

Readings for next class

1. * Latour, B. (1994). Where are the missing masses? Sociology of a door. In Wiebe Bijker and John Law (Eds*.) Shaping technology/Building society: Studies in sociotechnical change.* Cambridge, MA: MIT Press, 225–259. http://www.bruno-latour.fr/articles/article/050.html

2. * The *Verification* section of the *VAP Quick Reference* (pp. 4–5): http://www.valuesatplay.org/classreadings/vapquickref.pdf

3. Sweetser, P. & Wyeth, P. (2005) GameFlow: a model for evaluating player enjoyment in games. *ACM Computers in entertainment, 3*(3), 1–24. http://www.valuesatplay.org/classreadings/Sweetser.pdf

Assignment for next class

The groups should continue to paper prototype their designs throughout the week, respond to the blog prompts, and post their experiences of the design process.

Additionally, you may want to have groups evaluate one another's design documents, focusing on values translation. Each group should post the documentation that they have to date on-line so that other groups can evaluate and comment on the design. If you do have your students critique one another's design documents from a values perspective, please have them post those critiques to their journals so that we can evaluate them.

Design journal prompts for out-of-class activities

1. How has your value been operationalized?

2. Were there any disputes among group members while trying to determine how to represent your value in the game? How did the disputes arise? How were they resolved?

Final steps

For this class, you'll need to ensure that your students have a computer that has Internet access in order to complete the on-line post-class survey.

Your students can access the on-line, post-class survey at:

http://www.surveymonkey.com/s.aspx?sm=Ko0HPpbSsDtl05c3dj6zdQ_3d_3d

Please ensure that your students have enough time at the end of the class in order to complete the on-line survey. **Students should use the same user name that they created for the pre-class survey.** If they are unable to access SurveyMonkey, they may also complete the survey via a pdf, located at: http://www.valuesatplay.org/research.html#researchmaterials

Class 4 overview

In the final class, the groups should continue to finalize prototypes and to play test their games.

The article by Latour (1994) is the final reading around the issue of social values becoming embedded in artifacts. It is not an easy article to read, but it is an excellent conceptual discussion of how social values influence design—you may never look at a hydraulic door closer the same way again. Latour writes, "I will call…the behavior imposed back onto the human by non-humans prescription. Prescription is the moral and ethical dimension of mechanisms" (p. 3) and suggests that human behavior associated with the affordances of a technology is a reflection of underlying social values. Is this true for video games, as well? If so, how can game designers become conscious of the behaviors that they are "prescribing" for their players and what meanings might those prescriptions have for designers and players?

Finally, the article by Sweetser, et al. (2005) provides another set of heuristics with which your students may evaluate their designs.

Focusing questions

1. How can you verify that the value that you have selected has been represented in your game design?

Class activity

Groups should continue with their design iterations and play testing. They should also be play testing one another's prototypes and providing critique and suggestions.

Readings for next class

N/A

Assignment for next class

Completing the prototypes.

- Please ensure that your students upload their final game prototypes to their design journals so that we can evaluate them at the end of the unit.

- Deadlines are obviously yours to set, but **please remind your students to post their final prototypes to their journals regardless of how long it is between the final class and their final document**

Design journal prompts for out-of-class activities

1. How did your group handle conflicts around values representation in the game?
2. How did your group respond to critiques from other groups? Did you need to reconsider and design elements for values representation?
3. Write about your overall experience in this unit. What was it like to focus on embedding values as you designed a video game? What were the most challenging aspects of considering how to represent values? What were the most enjoyable aspects?
4. Have your thoughts or attitudes about the concept of values becoming embedded in video games changed at all since the beginning of the unit? If so, how? If not, why not?

Submitting game prototypes

For those students who would like to participate in our game contest, we will forward you instructions for submitting working games to our on-line game repository.

After this class

For New York City students only: We will contact students in order to arrange for the date and location of the focus group. Food and beverages will be provided.

References

Class Readings

Desurvire, H., Caplan, M., & Toth, J. A. (2004). Using heuristics to improve the playability of games. CHI 2004, Vienna, Austria.

Flanagan, M. & Nissenbaum, H. (2007). A game design methodology to incorporate social activist themes. *Proceedings of CHI 2007.* New York: ACM Press, 181–190.

Friedman, B. & Nissenbaum, H. (1996). Bias in computer systems. *ACM Transactions on Information Systems, 14*(3), 330–347.

Latour, B. (1994). Where are the missing masses? Sociology of a door. In W. Bijker and J. Law (Eds*.) Shaping technology/Building society: Studies in sociotechnical change.* Cambridge, MA: MIT Press, 225–259.

Orr, M. (2005). User-centered design. http://linuxgazette.net/116/orr.html

Sweetser, P. & Wyeth, P. (2005) GameFlow: a model for evaluating player enjoyment in games. *ACM Computers in entertainment, 3*(3), 1–24.

Weber, R.N. (1997). Manufacturing gender in commercial and military cockpit design. *Science, Technology, & Human Values, 22*(2), 235–253.

Winner, L. (1988). Do artifacts have politics? In L. Winner, *The whale and the reactor: A search for limits in an age of high technology.* Chicago: The University of Chicago Press. pp. 19–39.

Zimmerman, E. (2003). Play as research: The iterative design process. http://www.ericzimmerman.com/texts/Iterative_Design.htm

Additional suggested reading

Flanagan, M., Howe, D., & Nissenbaum, H. (2006). Values in design: Theory and practice. In Jeroen van den Hoven & John Weckert (Eds.), *Information Technology and Moral Philosophy.* Cambridge: Cambridge University Press, forthcoming.

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Crawford, C. (1982). *The art of computer game design.* www.vancouver.wsu.edu/fac/peabody/game-book/Coverpage.html

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Friedman, B. & Kahn, P.H. (1994). Educating computer scientists: Linking the social and the technical. *Communications of the ACM, 37*(1), 65–70.

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Reading Summaries

Reading summaries

Preliminary readings

Weber, Manufacturing gender in commercial and military cockpit design

- Weber's article compares the treatment of sex as an ergonomic consideration within military and commercial cockpit design and suggests that cockpits have precluded greater numbers of women from flying planes due to their physical dimensions

- Asks the questions: How are cockpits designed to accommodate women's bodies? When is a particular flight deck "gender neutral" and when is male bias embodied in the actual design?

- Weber suggests that, "Cockpit design specifications have protected what has traditionally been a male occupation…Although technology certainly is not the only 'cause' of exclusion and segregation, biased aircraft act as symbolic markers, used to delineate the boundaries between men's and women's social space" (p. 241).

- She concludes that the design specifications for ergonomics, based on statistical means and medians, come to reflect the assumptions of those who standardize the specifications. As specifications become concrete in terms of actual design dimensions, gender norms and biases become embedded in a technology. But given political momentum and critical awareness, specifications can be redrawn to be made more inclusive.

Manhunt 2 Banned in the UK

- Discusses the game's banning in the UK; says a member of the British Board of Film Classification: "*Manhunt 2* is distinguishable from recent high-end video games by its unremitting bleakness and callousness of tone in an overall game context which constantly encourages visceral killing with exceptionally little alleviation or distancing. There is sustained and cumulative casual sadism in the way in which these killings are committed, and encouraged, in the game."

Saving the World, One Video Game at a Time

- Discussion of serious games, including *Peacemaker, September 12th,* and *A Force More Powerful,* with a focus on how games can lead players to consider complex systems from multiple perspectives; asks a very interesting question: "Does the act of playing a game inherently trivialize things?"

Shock, Anger over Columbine Video Game

■ A summary of the controversy surrounding the production of *Super Columbine Massacre*

Week 1 reading summaries

Flanagan & Nissenbaum, *A game design methodology to incorporate social activist themes*

■ The paper introduces the concept of human values in video game design and suggests that game designers who are interested in exploring values associated with social activism may employ a systematic methodology for expressing values in video games.

■ Several key questions are asked:

  o How can values be consistently and systematically integrated into the design of software systems? How close can one get to making values investigations in the context of technical design scientifically rigorous? Is it possible to construct a viable set of general software design principles that could lead to the integration of values across a variety of design tasks, and in particular, games?

■ The Values at Play framework borrows from other methods for including social values in technology, including participatory design, value-sensitive design, reflective practice, and critical technical practice.

■ The VAP framework comprises 3 components to foster the integration of values in the design process: *Discovery, Translation,* and *Verification*

  o *Discovery:* the activity in which the designer identifies the value relevant to the project

  o *Translation:* the activity in which the designer "translates" values into game architecture via rules, mechanics, and narrative

  o *Verification:* the activity in which the designer verifies that the values have been realized in the game

■ The rest of this paper uses the experience of Rapunsel, a video game for teaching girls to learn computer programming skills conceived by Flanagan, in order to illustrate the three phases of the method and how they emerged during the iterative design process

Friedman & Nissenbaum, *Bias in computer systems*

■ Friedman and Nissenbaum argue that bias can become embedded in systems in multiple ways, including algorithmically (e.g., search functionality eliminates certain returns based

on certain criteria) and through design (e.g., interface design favors certain search returns by placing "above the fold" or on the first screen)

- They suggest three categories of bias:

  - *Preexisting bias,* with its roots in social institutions, practices, and attitudes;

  - *Technical bias,* which arises from technical constraints or considerations;

  - *Emergent bias,* which arises within the context of specific use scenarios

- The authors suggest that rapid prototyping, field testing, and formative evaluations are useful methods for detecting bias in design

The Discovery section of the VAP Quick Reference (pp. 1–2)

- The question that drives Discovery is, "What values are relevant to, inspire, or inform a particular design endeavor?"

- To guide the process of Discovery, a useful heuristic is to consider likely sources of values in relation to a system under construction:

  - Values expressed in the functional definition of a system

  - Values emerge through the specification of design features

  - Evaluation of the stakeholders and how their values influence the system

Zimmerman, Play as research: The iterative design process

- "Iterative design is a design methodology based on a cyclic process of prototyping, testing, analyzing, and refining a work in progress. In iterative design, interaction with the designed system is used as a form of research for informing and evolving a project, as successive versions, or *iterations* of a design are implemented."

- Recommends frequent play testing of design iterations by as broad an audience as possible in order to make adjustments to the game as the design process continues

- Uses the design of *SiSSYFiGHT 2000, Loop,* and *LEGO Junkbot* as examples of this process

Week 2 reading summaries

Belman, Game reviews

- Reviews a number of games (including *Ico, Crackdown,* and *Left Behind*) in order to provide students with examples of game analyses from a values perspective

- Discusses values as they manifest through game mechanics and narrative

Winner, Do artifacts have politics

- "The theory of technological politics draws attention to the momentum of large-scale sociotechnical systems, to the response of modern societies to certain technological imperatives, and to the ways human ends are powerfully transformed as they are adapted to technical means."

- Article suggests that there are 2 ways in which artifacts can contain political properties:

  - First, the design of a specific technical device becomes a way of settling an issue in the affairs of a particular community

  - Second, cases of what are "inherently political technologies," man-made systems that appear to require or to be strongly compatible with particular kinds of political relationships

- *As an example of the first* (technical arrangements and social order), Winner uses the example of Robert Moses' bridges over the Long Island parkways—the bridges were purposively built too low in order to prevent buses from passing beneath them (lower-income people at the time tended to ride buses, while the middle and upper classes drove cars, which easily fit underneath the bridges)

  - "Many of his [Robert Moses] monumental structures of concrete and steel embody a systematic social inequality, a way of engineering relationships among people that, after a time, became just another part of the landscape."

- Technologies can be used in ways that enhance the power, authority, and privilege of some over others: "Consciously or unconsciously, deliberately or inadvertently, societies choose structures for technologies that influence how people are going to work, communicate, travel, consume, and so forth over a very long time."

- *As an example of the second* (or, inherently political technologies), Winner uses the example of nuclear energy: nuclear energy is so dangerous that it necessitates a "military-industrial elite" in order to maintain the infrastructure and to ensure that there are no security breaches

- Some technologies are inflexible (such as nuclear power plants) and require certain systems to support them—without those systems, the technology cannot exist

- Certain devices and systems are almost invariably linked to ways of organizing power and authority: "…the issue has to do with ways in which choices about technology have important consequences for the form and quality of human associations."

The Translation section of the VAP Quick Reference (pp. 2–4)

- In *Translation,* designers begin to embed values within the design of the game through rules, mechanics, and narrative

- We refer to the process of concretizing values as "operationalization"

    o In this phase designers implement the values through a variety of methods, including brainstorming and paper prototyping

    o Within design teams, conflict often arises as to how values should be implemented; we look on these conflicts as an opportunity to consider multiple perspectives and to examine each designer's assumptions and intentions

    o Conflicts may be resolved through redesign, compromise, and trade-offs

Desurvire, Caplan, & Toth, Using heuristics to improve the playability of games

- Introduces heuristics for evaluating playability of computer, video, and board games

- Four heuristic categories:

    o Game play: the set of problems a user must face in order to win the game

    o Game story: all plot and character development

    o Game mechanics: programming that provides the structure by which units interact with the environment

    o Game usability: addresses the interface and the elements the user utilizes in order to interact with the game

Orr, User-centered design

- Brief article on user-centered design: "Usability testing is based on the premise that it will happen whether planned or not. Either the developers will do it in their labs, or the customers will do it after they've bought the product. The latter leads to frustrated and angry users, and an expensive redesign down the road."

- Provides suggestions for evaluating usability from the user's perspective:

    o Identifying and observing users

    o Identify user goals for the system

    o Run usability tests

Week 3 reading summaries

Latour, Where are the missing masses? Sociology of a door.

- Latour analyzes hydraulic door closers in order to illustrate how technological devices can shape human actions

- "The non-humans take over the selective attitudes of those who engineered them"; that is, the design of an artifact reflects the conscious and unconscious assumptions of those who design them

    o In the discussion of the hydraulic door closer, Latour suggests that anybody who is not particulary strong will be unable to open the door—thus, the designer has "discriminated" against those too weak to open the door

    o In order to resolve the "weakness issue," designers might eliminate the hydraulic door closer so that the door is easy to push. But without the door pusher, the door will now slam shut behind whomever opens it, thus necessitating a previous knowledge about doors without hydraulic door pushers in order to avoid getting hit in the face. Latour says, "I will call…the behavior imposed back onto the human by non-humans prescription. Prescription is the moral and ethical dimension of mechanisms."

- The affordances and constraints of design enable some kinds of behaviors while prohibiting others, which may have profound (and often unintended) effects upon a society

The Verification section of the VAP Quick Reference (pp. 4–5)

- The function of the verification cycle is to ensure—to the greatest degree possible—that the design team has successfully implemented the values identified throughout the discovery process.

- Techniques for engaging in verification include: internal testing among the desing team, user testing, surveys and user interviews

- End-user surveys, field observations, case studies, and ethnographic techniques may be employed in order to conduct empirical investigations into users' perceptions of system values.

Sweetser & Wyeth, GameFlow: a model for evaluating player enjoyment in games.

- Introduces a new model—GameFlow—as a heuristic in order to assess playability

- The model consists of 8 elements: Concentration, challenge, skills control, clear goals, feedback, immersion, and social interaction

- The model is based on Csikszentmihalyi's theory of optimal experience, or "flow," which is based on the balance between the level of challenge and the user's skill for any given task

- Article maps playability elements from general games literature to the flow model:

  - The game: A task that can be completed

  - Concentration: Ability to concentrate on the task

  - Challenge player skills: Perceived skills should match challenges and both must exceed a certain threshold

  - Control: Allowed to exercise a sense of control over actions

  - Clear goals: The task has clear goals

  - Feedback: The task provides immediate feedback

  - Immersion: A deep but effortless involvement and a reduced concern for self and sense of time

  - Social interaction: N/A

- Article provides identifiable criteria for each of the elements above

Teaching Materials

Background to the curriculum

Games as value-laden artifacts

> *No idea is more provocative in controversies about technology and society than the notion that technical things have political qualities. At issue is the claim that the machines, structures, and systems of modern material culture can be accurately judged not only for their contributions to efficiency and productivity and their positive and negative environmental side effects, but also for the ways in which they can embody specific forms of power and authority.*
>
> —Langdon Winner, *Do Artifacts Have Politics?*
>
> *Games provide high graphic, dynamic "worlds in a box," but these worlds are not full representations of reality; they are stripped-down worlds, with limited opportunities for interaction…The game designers' choices, particularly of what to strip away from a world, can be read as ideological when considered in relation to other systems.*
>
> —Kurt Squire, *From Content to Context: Videogames as Designed Experience*

As human-produced technological artifacts, video games reflect and embody the implicit assumptions and presuppositions of those who design and develop them. As with other categories of games, video games are essentially systems of rules that lead to emergent behaviors associated with play. Crawford (1982) defined a game as "a closed formal system that subjectively represents a subset of reality." More comprehensively, Salen and Zimmerman (2004) characterized games as "system[s] in which players engage in an artificial conflict, defined by rules, that result in a quantifiable outcome" (p. 80). Through devising narratives, rules, and mechanics, game designers determine the set of possible behaviors and outcomes that may occur within the boundaries of a game system, boundaries that are growing more expansive given the increasingly social and networked nature of many video games. Further, designers are in a position to influence, however tentatively, the kinds of interpretations that players might make of symbols and representations within a game through their decisions about iconography, player interactivity, narrative structure, and objectives, to name a few of the factors that shape game play. Each element within a game's design is influenced by the designer's unique and subjective position within the world: Personal and professional experiences, attitudes, beliefs, and past and present social milieus all contribute to the designer's vision and implementation of a game system. If we frame game construction as a design problem to be discovered, articulated, and solved, then the designer's solution(s) to that problem, expressed in the form of game elements, will be informed by her or his position toward that problem. Thus, as human-manufactured artifacts, video games reify some manifestation of the

designer's attitudes and beliefs about the qualities of the world and about the social relationships that human society comprises.

This curriculum is designed to "trouble" video game designers. That is, we intend for designers to explore the "disorienting dilemmas" (Mezirow, 1990, p. 14) and "uncertainties, discrepancies and dissatisfactions" (Boud & Walker, 1998, p. 192) that can lead to critical reflection as they analyze existing commercial video games for "value content" and as they create prototypes for their own games based on a set of social values. Through the activities in this unit, your students will be encouraged to question their assumptions, consider the perspectives of various stakeholders (including players), and to explore multiple solutions to design problems with the intent of exploring new methods for embodying and representing social values in video games. As video games become an increasingly powerful and pervasive medium for entertainment, communication, and for effecting change in broader society, the Values at Play methodology is a tool for aiding designers to become conscious of the multiple meanings that games might represent for their audiences and to create games that systematically foster social values.

Our work urges designers and producers to include values among the criteria by which the quality of a given technology is judged, to strive actively for a world whose technologies are effective, efficient, safe, attractive, and easy to use, but also promote the values to which the surrounding societies and cultures subscribe. These values might include liberty, justice, inclusion, equality, privacy, security, creativity, trust, and personal autonomy. The eventual outcome of this intervention is to foster a greater attunement to values among designers, as well as a change in design practices in order to realize values-relevant goals in game design.

grow-a-game!

Explanation, Instructions, & Templates

The grow-a-game cards are a game design tool developed by Tiltfactor Lab as part of the Values at Play research project. They can be used a number of ways, depending on the size of the group using them and the group's design experience. While the cards can be used within the structure of a formal game, they can also be used to stimulate discussion or to provide constraints for brainstorming sessions. The cards can facilitate analysis of the values present in video games, or they can be used for imagining modifications to existing games or for designing entirely new games.

Description of Cards

There are six card categories in the grow-a-game cards: ACTIONS, CHALLENGES, GAMES, GOALS, WILDCARDS, & VOTES. With the exception of Wildcards, each category has a different color & symbol; the cards have an icon on one side and text on the other. Challenge, Game, & Goal cards all have brief explanations underneath their titles in case the player is unfamiliar with the topic. The cards focus on social values, but they are applicable in a variety of design tasks. Start discussion with the Goals cards, then brainstorm new games with the additional constraints.

Actions (Hammer): These are game mechanics, or the actions that a player performs within the game. Mechanics are geared towards socially conscious actions, including: trading, creating and subverting.

Challenges (Column): Social issues and conflicts are represented on the Challenge Cards. These include: sexism, pollution and addiction.

Games (Chess Board): Example games, from classic board games to modern first-person shooters, are presented in this card category. These cards trigger dialogue about values by inspiring players to analyze and modify popular existing games. Sample games include: Scrabble, Pac-Man and Quake.

Goals (Tree): Goals cards have ideals that might set the context for a more just and sustainable society. Goals include: generosity, peace and autonomy.

Votes (Thumbs Up): After each design round, players can give vote cards to the players with the best ideas. The player with the most cards at the game's end wins!

Wildcards: In every category of card there are Wildcards to provide some flexibility to the more structured exercises. Rather than relying on the ideas presented on the grow-a-game cards, players can decide to use their own actions, challenges, games and goals. These may or may not be used in exercises, depending on the group experience and dynamics.

grow-a-game!

To create the cards, simply print the graphic on the one side, corresponding category text on the other. For wildcards, print out sheets with the graphic on one side and wildcard on the other instead of the category text. Use cardstock. You can also simply print the graphic for the category on one side and write in your own text on the other to expand the cards' scope. A guillotine-type paper cutter can be used to divide the sheets.

1 or more players / 10-30 minutes

One Card: The simplest use of the cards is as a discussion prompt or analysis tool (ex. see Flanagan et al "A Method for Discovering Values in Digital Games" 2007). Any of the card categories can be used individually, but we recommend "Goal" cards as these explicitly present values for discussion.
1. Shuffle the cards
2. Participants each draw a card from the deck and either discuss which existing game or mechanic in a game they believe embodies the goal.

Teams of 4-8 / 30-60 minutes

Two Cards: With 2 cards, groups move from discussion to begin brainstorming and designing games. If the players use Game cards & Goal cards (for ex), they can imagine modifications to existing games that would include the goal. Using two cards provides an additional design constraint. Groups can decide to collectively add constraints or make the exercise into a game prototype.
1. Decide which 2 card categories will be used and how long brainstorming will last
2. Shuffle cards
3. Each player draws from both card piles and privately brainstorms until time runs out.
4. Players take turns explaining to the group the game they imagined
5. If a player passes, he may use a wildcard the next round
6. After all the players have explained their games, they vote for their favorites by each presenting a vote card to the player with the best idea
7. After three rounds, the player with the most vote cards wins!

Teams of 4-8 / 1 hour +

Three and Four Cards: Moving beyond 2 cards, the games become significantly more difficult to imagine, but the effort can produce unique and interesting game ideas. The more cards used, the more brainstorming time will be needed. Long, thoughtful silences can be broken by manic torrents of creative game ideas. 3 & 4-card games are similar to the two-card games, but with additional design constraints and longer brainstorming. Wildcards can be used to provide players some flexibility if the chosen constraints prove too challenging. Players could even act out their ideas in "design charades" as a fun variation!

Conclusion: grow-a-game is particularly useful because of its adaptability. These games are simply suggestions that have worked to varying degrees with different groups in different settings. Even with instructions, however, groups may choose to use the cards in their own ways. The goal is to design unique, fun, "values-conscious" or socially responsible games and there are myriad ways the cards can be used to facilitate that process.

VAP Quick Reference

The Values at Play Framework: A (Semi-) Quick Reference

The Values at Play (VAP) methodology for incorporating values in the context of system design is characterized by three analytically distinct activities: *Discovery, Translation,* and *Verification.* These are pursued in tandem, the results of each iteratively affecting successive versions of the system.

Discovery

The question that drives Discovery is what values are relevant to, inspire, or inform a particular design endeavor? The outcome is a list of values, explicit recognition of design aspirations that often remain implicit, or sometimes entirely unrecognized. These lists may include values abstractly construed, such as privacy, autonomy, tolerance, security, cooperation, sociality, equality, trust, and creativity, or values more specifically construed, such as freedom of expression, gender equity, environmental conservation, and racial diversity. Although the VAP methodology recommends a stable heuristic to guide the process of Discovery, the process is likely to yield lists that are highly variable from one project to the next.

To guide the process of Discovery, a useful heuristic is to consider likely sources of values in relation to a system under construction. The three below do not necessarily exhaust all possibilities:

Values expressed in the functional definition of a system

What phrase or sentence answers the question: What are you designing/building? In some cases, values form an essential part of the answer, on par with or even more important than other functional dimensions or features. Thus, designers might declare, "This is a privacy-preserving database," or "This is a game to promote environmental conservation."

Values emerge through the specification of design features

Even when values are not inherent to functional design, they may emerge as important factors when the myriad characteristics of a system underdetermined by core functional requirements are settled. In deciding, for example, how users are to gain access to a system (a website, database, information repository), designers might discover that one design option promotes security, another user-autonomy, a third ownership rights. In designing the reward structure for a multi-player game, designers might find that one approach ("zero sum") promotes competition, another encourages

interactivity and cooperation, a third supports independence. The important thing for designers to notice is that seemingly routine and gritty decisions may be a source of values in design.

Stakeholders

A variety of individuals or social groups, whose values directly or indirectly inform system design, have a stake in a project's outcome. The VAP methodology recommends that designers give as full and explicit an account of potential stakeholders whose preferences, expectations, and interests my serve as sources of values in design. Several key parties emerge across many projects:

> *Designers:* Designers and members of design teams bring to the table understandings, preferences, and expectations, shaped by factors such as education, culture, and socio-economic origins. "Where is the team coming from?" is a difficult but necessary part of reflection in the creative design environment. This reflection may reveal values commitments of differing strengths, from absolute to negotiable, that ultimately shape design outcomes.

> *Users or consumers:* Systems may be shaped by values assumed by designers to be important to potential users or buyers. Alternatively they may be directly influenced by requirements laid down explicitly by users or indirectly expressed through marketplace dynamics.

> *Enterprises:* Designers might be swayed by enterprises —institutions, companies, and governmental agencies, for example—mediating the successful uptake of systems in design. In the case of educational games, for example, designers might be influenced not only by preferences, expectations, and interests of players themselves, but by entities such as schools or school districts, which are the likely intermediaries.

Translation

In Discovery, the charge is to uncover values relevant to a system; in translation, the charge is selectively to "embed" these values in its design. According to the VAP approach, Translation comprises three sub-activities: Operationalization, Implementation, and Resolving Value-Conflicts.

Operationalization

In order to make values practically accessible in the context of design, it is necessary to render them in concrete and specific terms. Members of design teams might, for example, be firmly committed to justice and agree that justice is relevant to a particular design project. But in order to move from this point to the design table, they still have work to do articulating what justice means in the context of their project. Does it mean that the system should be equally accessible to all—old and young, male and female, rich and poor, skilled and unskilled? If not, is discrimination is necessary, then

what is a just basis for discrimination? Fortunately, designers need not address all these issues from scratch but may find help in prior work on the conceptual analysis and application of values to concrete problems.

Implementation

The heart of design, implementation involves the transformation of ideas, intentions, requirements, and concepts into concrete specifications through a variety of formal and informal techniques, such as brainstorming, "body storming," paper prototyping, reference to past work, etc. Implementation, here, is the move from operationalized values concepts to system features. Our designers (above) having, say, committed to justice operationalized as equal access by both young and old, might take particular care to render text and images clearly enough to accommodate a range of visual acuity and physical dexterity. And even so, this value need not fully determine design: one team might insist on large print for all, while another might offer configurable screen-appearance with easy-to-use controls. Importantly, designers should maintain vigilance for the influence of values on design at all levels, from overarching design themes down to gritty details..

Resolution of Conflict

In conscientious design, as in life, we encounter values' conflicts. Intent on promoting two or more values, designers may find that all cannot be simultaneously satisfied but one or more, only at the expense of others. Examples of particularly intractable conflicts that we have witnessed in the area of software design are those between security and ease-of-use, access to information and private property, privacy and transparency.

There are no across-the-board answers to resolving values conflicts, in design, as in life, but the VAP approach offers three strategies designers might consider when facing such conflicts.

Dissolving conflict through redesign: Where material constraints imposed by a particular design idea make it impossible to realize two (or more) values, a redesign might alleviate the problem. For example, security might conflict with ease-of-use when it calls on users to master complex entry requirements, such as, hard-to-remember passwords. Redesign that utilizes a reliable biometric might dissolve this conflict, offering security and ease-of-use.

Resolving conflict via compromise: When dissolving conflict is impossible, designers might accept that a degree of deference to competing values is better than nothing. In trying to resolve security with ease-of-use, creating the possibility of a system's "remembering" login attributes satisfies both values, though at a compromised level.

Resolving conflict through trade-offs: After careful consideration, designers prioritize conflicting values and adopt a design that promotes one (or more) over another (or others.)

Thus, in certain circumstances designers conclude that security is the pre-eminent value and develop access controls in which ease-of-use is traded off in favor of security.

Verification

The function of the verification cycle is to ensure—to the greatest degree possible—that the design team has successfully implemented the values identified throughout the discovery process. Significant questions in this process might include: Do system features afford activities that support identified values? Does the overall system design adequately represent the values in question?

Similar to techniques employed in software usability testing, verification activities for values are intended to provide a method for confirming that individual features and the overall system design maps to the values. These techniques may include (but are not limited to): internal testing among the design team, user-testing in controlled environments, formal and informal interviews and surveys, the use of prototypes, and traditional quality assurance measures such as automated and regression-oriented testing. Further, end-user surveys, field observations, case studies, and ethnographic techniques may be employed in order to conduct empirical investigations into users' perceptions of system values. Although these may be conducted using whole systems, the VAP approach recommends continuous engagement with verification on focused prototypes.

Summary

Three analytically distinct activities comprise the VAP method: *Discovery,* in which a list is compiled of values relevant to a project; *Translation,* in which values are operationalized and implemented in material features; and *Verification,* in which designs are assessed for successful inclusion of values

VAP and the iterative cycle

Although analytically distinct, the VAP activities of discovery, translation, and verification can co-occur for the duration of a system's design; results from each are iteratively fed back into successive versions. Discovery is not restricted to the early phases of a project, but, according to this conception, is likely to crop up continuously throughout, revealing new values as the system evolves through translation and verification activities. Similarly, verification is not reserved for the capstone, but according to this conception, is recommended as a check from early efforts onward, feeding continuously and dynamically back into discovery and translation. And so on.

Research Materials

DEPARTMENT OF CULTURE AND COMMUNICATION

Faculty Oral Statement

Researchers at New York University and Hunter College are conducting an investigation into the way in which different goals, beliefs, and attitudes are integrated into the design of computer games.

The goal of the research is to develop a toolkit that helps game designers make more diverse and innovative kinds of games. The study is part of a research project funded by the National Science Foundation and is led by Dr. Helen Nissenbaum, a philosopher and ethicist at New York University, and Dr. Mary Flanagan, an artist and designer at the Tiltfactor Lab, Hunter College, City University of New York.

This research project involves the study of how game makers think about games and the creation of new games. I've been asked to share this project with you due to your interest in game design, and by virtue of the fact that you are enrolled in this class.

Your participation in the study is completely voluntary and in no way affects your grades for this or any other class. Again, you don't have to participate in this project in any way.

If you do opt to be a part of the study, you'll maintain a design journal throughout the duration of the class in order to record and reflect on your experiences with learning the methodology that we learn during this unit. Your class grade is in no way affected by the journal—you can contribute as much or as little (though I think the researchers hope for the former) as you like and it will not affect your grade in any way.

By participating, you'll also be agreeing to allow the researchers to use the game prototypes that you've developed for this class in further research. Specifically, they will analyze the games that you produce in order to determine whether people perceive the values that you have built into the game. They'll also show the games to players who don't have backgrounds in design in order to see how they perceive the values.

I'll hand out a recruitment letter from the research team that has a more detailed description of this study. If you agree to participate, I'll also give you a consent form to fill out that I will then send to the research team at NYU and Hunter College. You'll have a copy of all of these materials for your own records.

You can contact the researchers or Jonathan Belman (jonathan.belman@gmail.com), the graduate research assistant with any questions. They'd be happy to answer.

NYUSteinhardt
Steinhardt School of Culture, Education, and Human Development

DEPARTMENT OF CULTURE AND COMMUNICATION

Consent Form

You have been invited to take part in a research study about whether values can be consistently and systematically integrated into the video game design process. Dr. Helen Nissenbaum, a faculty member of the Department of Culture and Communication, Steinhardt School of Education, New York University and Dr. Mary Flanagan, a faculty member of the Department of Film and Media Studies, Hunter College, City University of New York, will lead this study.

You must be at least age 18 in order to participate in this study.

If you agree to be in this study, you will be asked to do the following:

1. **Complete a survey about your background (age, gender, education, game playing experience, etc.) at the beginning of the class and at the end of the class;**

2. **Maintain an on-line blog throughout the duration of the class;**

3. **Submit a game prototype for evaluation by the research team at the end of the class;**

4. **Participate in a two-hour focus group at the end of the class.**

Your interviews during the focus group will be videotaped. You may review these tapes and request that all or any portion of the tapes that includes your participation be destroyed.

The amount of time that you participate in this study will be determined by the amount of time that you spend posting to your blog, which should not exceed two hours per week over the course of the class. The focus group will last for two hours and will occur after the completion of the course.

There are no known risks associated with your participation in this research beyond those of everyday life. This research may help the investigators understand whether values can be consistently and systematically integrated into the video game design process. To your benefit, you may have the opportunity (if you choose, by giving us your consent) to have design students at other education institutions view the game prototype that you design for this class.

Confidentiality of your research records will be strictly maintained by assigning self-generated user names to each participant so that data is never directly linked to individual identity. Additionally, your blog will be viewable only by members of your class and by the research team at New York University and Hunter College; all others will be forbidden to access the blog.

Your responses during the focus group will be kept confidential by the researchers, but the researcher cannot guarantee that others in the group will do the same.

DEPARTMENT OF CULTURE AND COMMUNICATION

Participation in this study is voluntary. You may refuse to participate or withdraw at any time without penalty. For interviews, questionnaires, or surveys, you have the right to skip or not answer any questions you prefer not to answer.

Nonparticipation or withdrawal will not affect your grades or academic standing. You may withdraw from this study at any time without any penalty.

If there is anything about the study or your participation that is unclear or that you do not understand, if you have questions or wish to report a research-related problem, you may contact Dr. Helen Nissenbaum at 212.998.5251 (e-mail: hfn1@nyu.edu), New York University, 239 Greene St., East Building, 7th Floor, New York, NY 10003, or Dr. Mary Flanagan at 646.642.6408 (email: mary.flanagan@hunter.cuny.edu), Hunter College, 695 Park Avenue Room 433HN, New York, NY 10021.

For questions about your rights as a research participant, you may contact the University Committee on Activities Involving Human Subjects, New York University, 15 Washington Place, #1-A, New York, New York, 10003, at human.subjects@nyu.edu or 212.998.4808.

By signing below, you certify that you are at least age 18.

You have received a copy of this consent document to keep.
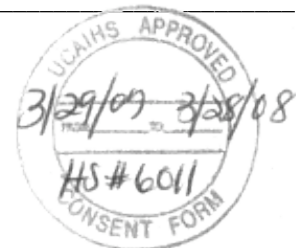
Agreement to Participate

Your name (printed): _____

Your signature: _____

Today's date: _____

Your date of birth: _____

NYUSteinhardt
Steinhardt School of Culture, Education, and Human Development

DEPARTMENT OF CULTURE AND COMMUNICATION

Recruitment letter

Helen Nissenbaum, Professor

239 Greene St, 7th floor

New York NY 10003

212.998.5807

September 2007

Dear Participant:

An exciting new research project has begun at New York University and Hunter College in the area of game design, and we'd like to invite you to participate. The study, "Values at Play: Integrating Social Factors into Design," considers the ways in which different goals, beliefs, and attitudes are integrated into the design of computer games as people create them.

The goal of this collaboration is to develop a Toolkit that helps game designers make more diverse and innovative kinds of games. Our primary goal is to develop the best Toolkit we possibly can to put game design in context. The study is part of a research project funded by the National Science Foundation. The project is led by Dr. Helen Nissenbaum, a philosopher and ethicist at New York University and Dr. Mary Flanagan, an artist and designer at the Tiltfactor Lab, Hunter College, City University of New York.

This research project involves the study of how game designers think about video games and how they approach the process of designing them. You have been selected due to your interest in game design and by virtue of your enrollment in a video game design or video game-related class.

We will conduct the study with approximately 100 university students at the following institutions: New York University, Hunter College (CUNY), Georgia Institute of Technology, University of Southern California, and University of California Santa Cruz. Our evaluation begins with the establishment of a baseline regarding your pre-existing knowledge, attitudes, and intentions regarding social values such as equity and fairness and social values as they are represented in video games. Using an on-line survey, we will ask about demographic information such as age, ethnicity, and level of education, in addition to asking you a few questions about your previous experience with video games. The survey will present you with a hypothetical design scenario and ask you to think about how you might respond to the situation. You will be given approximately thirty minutes for the initial survey during the first class and thirty minutes for a survey after the study.

DEPARTMENT OF CULTURE AND COMMUNICATION

During the class, you will be asked to maintain an on-line design journal (a blog) that is accessible only to members of your class (including the instructor) and members of the research team. We will provide you with a series of questions that relate directly to the design methodology to which you will be introduced in this course. You should feel free to write as much or as little as you choose in this blog. **Your class grade is in no way contingent upon your participation in this project, so you are free to express yourself in any way you choose using the journal and we encourage you to do so.**

Upon completing the class, we will ask you to participate in a two-hour focus group to discuss your experiences during the class. We will videotape the interviews to expedite data collection. You will have the right to review all or any portion of the tape and request that it be destroyed.

In our study, we will avoid the use of ethnic/racial analyses of data if there is a possibility that the identity of a subject's responses could be discerned either by the subject or by other members of the community. Because the study invites many participants across institutions, we will only report ethnicity information if fewer than 30% of the participants are of an ethnic minority from one site to ensure subject privacy; if the sample includes fewer than 30% individuals from an ethnic minority, we will not report the research results in that category in any way affiliated with the institution at which it was collected to protect participant identity.

All of the information obtained from you will be kept in strict confidence. Names and other identifying information will be deleted prior to data analysis and will not be included in any published reports. The only people who will have access to your data are members of the Hunter College/New York University research team. No personal identifiers will/can be linked to the data. All materials will be kept in a locked file cabinet in the researcher's locked office, 7th floor of 239 Greene Street (Dr. Nissenbaum's office) to which only the principle investigators have access. The researchers will keep the data for three years. After that, all materials will be destroyed.

Your participation in the study is completely voluntary. Only the researchers and your professor will know that you participated in the study. You can withdraw at any point from the study with no negative consequences whatsoever. We are aware of no risks associated with your participation in the study beyond those in everyday life. Your professor will know which students are participating in the study, and you may discontinue participation at any time without penalty or loss of benefits or services to which you are entitled. You do not have to answer any question that makes you uncomfortable. If you decide not to be in the study at any time, there will be no effects on your

DEPARTMENT OF CULTURE AND COMMUNICATION

grades. To your benefit, you may become well versed in an emerging aspect of the game design field through participating. Further, should you give us your permission, you will have the opportunity for game design students at other research institutions to view the game prototypes that you develop in this class.

We believe that this research will lead to improvements in game design and game design education. If you wish to learn about the results of the study once it is completed, Professors Nisssenbaum and Flanagan will give this information upon request. The research will inform the development of Toolkit, and academic articles may be written about the results. The development of this software is for research purposes, and is unlikely to have economic consequences.

We hope that you will agree to participate in the study by signing the attached consent form and returning it to your instructor as soon as possible. If you have questions about the study, you can contact the researchers: Professor Flanagan at 646.642.6408 (e-mail mary.flanagan@hunter.cuny.edu) or Professor Nissenbaum at 212.998.5251 (e-mail: hfn1@nyu.edu). You should contact the NYU Office of Human Subjects (UCAIHS) 212.998.4808, if you have questions regarding your rights as a subject or if you feel you have experienced a research-related injury.

Thank you very much for your time and cooperation and we look forward to your participation!

Sincerely,

Helen Nissenbaum, New York University

Mary Flanagan, Hunter College, City University of New York

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The City University of New York

Consent Form

You have been invited to take part in a research study about whether values can be consistently and systematically integrated into the video game design process. Dr. Helen Nissenbaum, a faculty member of the Department of Culture and Communication, Steinhardt School of Education, New York University and Dr. Mary Flanagan, a faculty member of the Department of Film and Media Studies, Hunter College, City University of New York, will lead this study.

You must be at least age 18 in order to participate in this study.

If you agree to be in this study, you will be asked to do the following:

1. **Complete a survey about your background (age, gender, education, game playing experience, etc.) at the beginning of the class and at the end of the class;**

2. **Maintain an on-line blog throughout the duration of the class;**

3. **Submit a game prototype for evaluation by the research team at the end of the class;**

4. **Participate in a two-hour focus group at the end of the class.**

Approximately 100 undergraduate and graduate students will participate in this study, all of whom will have been recruited based on their enrollment in a video game design or video games-related class.

Your interviews during the focus group will be videotaped. You may review these tapes and request that all or any portion of the tapes that includes your participation be destroyed. You will have the right to review all or any portion of the tape and request that it be destroyed. The focus group will be held in an office at Hunter College. All of the videotaped material will be maintained in a secure database to which only the researchers and you will have access via passwords. You will be able to access your material (but not that of other participants) at any time and can elect to withdraw your agreement to have your video footage analyzed and discussed at your discretion. If you choose to have your footage removed, we will immediately remove the entire taped segment from the database and rely on the printed transcript in order to analyze and discuss the material from the group. The original footage, on videotape, will be kept in a locked file cabinet in the faculty member's office. To protect the privacy of the group members, please refrain from speaking to others about what is said within the group. As members of your focus groups will know what you said, confidentiality cannot be guaranteed.

The amount of time that you participate in this study will be determined by the amount of time that you spend posting to your blog, which should not exceed two hours per week over the course of the class. The focus group will last for two hours and will occur after the completion of the course.

There are no known risks associated with your participation in this research beyond those of everyday life. This research may help the investigators understand whether values can be consistently and systematically integrated into the video game design process. To your benefit, you may have the opportunity (if you choose, by giving us your consent) to have design students at other education institutions view the game prototype that you design for this class.

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You may contact the Hunter College IRB Office at 212.650.3053, if you have questions regarding your rights as a subject or if you feel you have been harmed as a result of your participation in this research.

By signing below, you certify that you are at least age 18.

You have received a copy of this consent document to keep.

Agreement to Participate

I have read (or have had read to me) the contents of this consent form and have been encouraged to ask questions. I have received answers to my questions. I give my consent to participate in this study. I have received (or will receive) a copy of this form for my records and future reference.

Your name (printed): ....

Your signature: ....

Today's date: ....

Your date of birth: ....

Researcher's name (printed): ....

Researcher's signature: ....

Today's date: ....

HUNTER

The City University of New York

Mary Flanagan, Associate Professor
Director, Tiltfactor Laboratory

Department of Film and Media Studies

School of Arts and Sciences

Hunter College, City University of New York

695 Park Avenue, 482 North Building

New York, NY 10021

Phone: 212.650.3219

September 2007

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Thank you very much for your time and cooperation and we look forward to your participation!

Sincerely,

Helen Nissenbaum, New York University

Mary Flanagan, Hunter College, City University of New York

HUNTER

The City University of New York

Hunter College Video Recording Release Form

Protocol #: HC-030711177

Researchers: Dr. Mary Flanagan, Dr. Helen Nissenbaum

Title: Values at Play—Integrating Social Factors into Design

The videotapes can be studied by the research team for use in the research project.   Initials: _____

The videotapes can be shown to subjects in other experiments.   Initials: _____

The videotapes can be shown at meetings of scientists interested in the study of video game design, education, and values in technological systems.   Initials: _____

The videotapes can be shown in classrooms to students.   Initials: _____

The videotapes can be shown in public presentations to non-scientific groups.   Initials: _____

The videotapes can be shown on television and aired on the radio.   Initials: _____

I have read the above description and give my consent for the use of videotapes as indicated above. I have also been given a separate consent form.

Participant's Name: _____   Signature: _____   Date: _____

Researcher's Name: _____   Signature: _____   Date: _____