

Designing Games to Effect Social Change

Chris Swain

Game Innovation Lab
USC School of Cinematic Arts
Los Angeles CA 90089-2211
cswain@cinema.usc.edu

ABSTRACT

Serious games, persuasive games, news games – these are all terms used for games which let players gain an experiential understanding of real world issues through play. Many in this growing class of games deal with social causes; recent examples include *Peacemaker*, about solving Middle East peace, *The Redistricting Game*, about congressional redistricting and redistricting reform, and the online game series published by the New York Times that includes *Food Import Folly* (which is about the FDA limited inspection policy on U.S. food imports). The field has a number of good examples that let users learn about social issues, however, to date, the field is short on examples of games that achieve measurable results in the real world.

This paper addresses issues of design, theory, and activism pertaining to games about social causes. The author is an experienced designer and scholar who deals with all three of these issues in his work. Here is an outline of best practices for designing games to affect social change. Each is discussed in detail below:

1. Define intended outcomes
2. Integrate subject matter experts
3. Partner with like-minded organizations
4. Build sustainable community
5. Embrace “wicked problems”
6. Maintain journalistic integrity
7. Measure transference of knowledge
8. Make it fun

Author Keywords

Game design, games for change, persuasive games, design practice, design theory

INTRO

The following best practices are based on the author’s experience as a designer and researcher in the study of persuasion and social change. Where applicable, strategies for generating features useful to designers of games for change have been articulated. Examples from various

games in the field – including those created by the author – are cited throughout.

Define intended outcomes

Defining intended outcomes for the game at the beginning of the project will enable you to design elegant solutions to facilitate those outcomes.

Developers of games for change typically want to raise awareness of their issue and they want to stimulate interest and activism. To attain meaningful results it helps to quantify realistic intended outcomes at the beginning of the project. Examples of intended outcomes are: number of dollars donated, number of emails sent to Congress, number of news stories written, number of times players “tell a friend”, number of message board posts, number of meetup.com events generated. Defining numbers for intended outcomes during pre-production will drive the team to integrate features into the game specifically to help achieve the intended outcomes. As an example, an intended outcome for *The Redistricting Game* was to generate 5000 letters to Congress. Given that goal, the team worked to elegantly incorporate a “Write Congress” button into the game flow. Had this intended outcome not been pre-defined then the feature either a) may not have been implemented thus lessening the social impact of the game, and/or b) may have been implemented late in the production at which time it likely could have been added on as a “Frankenstein” feature – i.e. bolted on in an awkward way.

What are some more ambitious and attainable intended outcomes than the ones mentioned? One way to answer this question is to articulate the game’s “theory of change”. This is a holistic process for identifying intended outcomes that is built around a pathway of change and describes the social “interventions” that will bring about those outcomes. Each intended outcome in the pathway is associated with a specific intervention, which reveals the typically complex web of activity that is required to effect change [1].

Situated Play, Proceedings of DiGRA 2007 Conference

© 2007 Authors & Digital Games Research Association (DiGRA). Personal and educational classroom use of this paper is allowed, commercial use requires specific permission from the author.

Integrate subject matter experts

Game teams rely on the diverse skills of game designers, programmers, artists, producers, and others to create engaging entertainment applications. Games about social issues benefit from inclusion of team members with a deep understanding of such issues; these people are generically called “subject matter experts”. They should be integrated into the team from the beginning and participate directly in the system design. They should also be relied upon to playtest the game and vet it for accuracy and objectivity – game designers should avoid the mistake of learning about the issue from books alone because it is unlikely that they will truly understand a new field just by reading about it. Subject matter experts can range from a single individual to whole organizations (more on working with organizations below). As an example, *The Redistricting Game* team included a subject matter expert who is a professor of law and political science and whose research specialization is redistricting law. The team relied on his advice and the input of his network of experts from the first week of the project through to the final project launch and PR efforts.

In addition to improving the game, subject matter experts will add to the persuasiveness of the game’s message. Dr. Robert Cialdini, in his research on the psychology of persuasion, defines Authority as one of the core six “weapons of influence” [2]. Integrating subject matter experts into a design team increases a game’s persuasiveness, credibility and potential for influence.

Embrace “wicked problems”

Oftentimes social issues have parameters which are difficult to codify. Solutions to social issues are difficult to craft because well-meaning actions typically offend at least one set of stakeholders. Thus trying to solve a social problem often creates additional, potentially more entrenched problems. These problems, originally written about by Dr. Horst Rittel, are commonly referred to as “wicked problems” [3]. The incomplete, contradictory, and variable nature of wicked problems make them hard to understand and address. Cognitive science tells us that people will ignore and even act contrary to clear evidence if they are unable reconcile demonstrated truths with their underlying frames of how the world works [4]. Cognitive linguists like Dr. George Lakoff have shown how discourse on social issues is based foremost by people’s largely unconscious mental frames. Mental framing is a concept from psychology which shows that people naturally “locate, perceive, identify, and label events and occurrences, thus rendering meaning, organizing experiences, and guiding actions [5].” As an example: Lakoff challenges readers to not think of an elephant. It is impossible, however, not to think of an elephant because the word “elephant” provokes an accompanying frame and mental image [6].

So how does one address a wicked problem? Dr. Jeffrey Conklin, in his research on the subject, defines two key

things that must happen for progress to be made on a wicked problem. The first is for stakeholders to collaboratively gain a shared understanding of a problem, as opposing stakeholders usually do not even agree on what the problem is [7]. The second is for opposing stakeholders to have dialogue and a shared commitment to alleviating the problem.

Games are well-suited to communicating a shared understanding of a problem because they allow users to experiment with potential solutions in a safe setting and generate their own mental frames for how it works. This experiential framing by the user forms core beliefs about the issue. In turn, multiple users form these frames on their own and then can connect to share their opinions. Thus games are powerful for creating shared understanding of social problems.

Likewise, since the cost of failure in games is low, players may be emotionally capable of trying out different ideologies. It is safe and easy for a user to experiment on their computer and simply restart the game if they fail, whereas it is socially terrifying to take action that may cause someone to be shunned from a social group that is part of their identity. Gaining hands-on experience with differing worldviews is nearly impossible with traditional media [8].

Games offer extraordinary potential to allow users to look beyond perspectives entrenched in them by peer groups and traditional media. There is precedent for new media to overtake traditional media in terms of influence on social issues. For instance, the then-new medium of television rapidly became the most influential medium for political discourse. This change in media shifted people’s mode of understanding from word-based to one based on images. Will we see an analogous shift in influence from linear media to interactive media?

Partner with like-minded organizations

Games for change can be more effective at reaching an audience and gaining traction if associated with a larger initiative. Smart partnering with credible, like-minded organizations can be a way to maximize the impact a game may have. Furthermore, collaboration and community features in a game’s website can dramatically increase the engagement factor of interested citizens.

Though it is not immediately obvious, advocacy organizations introduce important distribution channels to games about related causes. For example, change organizations communicate regularly to thousands or even millions of self-selected individuals who are passionate about their cause. Each individual in an advocacy organizational network has family and friends and this represents incredible social capital for distribution, fundraising, and achieving other intended outcomes. With

The Redistricting Game, the team reached out to the leading advocacy groups who are passionate about redistricting reform. These groups included FairVote.org, League of Women Voters, Campaign Legal Center, and the Council for Excellence in Government. These groups embraced the game and opened doors to their networks because a) the game was directly in line with the organizations stated goals, and b) the quality of the game was high. These connections helped *The Redistricting Game* reach the entire community of people interested the issue in a credible way – namely, because it came to people vetted by trusted organizations.

Build sustainable community

The history of the web shows us that sites that thrive typically do so because of the community that builds around them: the sites themselves function as focusing points for the topics they address. This is true with sites as diverse as Amazon, Facebook, Wikipedia, and *World of Warcraft*. And it is especially true with sites that target niche groups such as groups that identify with social causes. Because games for change are inherently social undertakings – striving to garner players and incite those players to take civic action – it is important that the games integrate community at a fundamental level. Features should be included that allow players to connect with one another and organize. Effective strategies can be gleaned from the nine principles of community design defined in Dr. Amy Jo Kim's seminal book *Community Building on the Web* [9]. Example features include: online forums to let users connect and debate, "tell a friend" buttons to help spread the word, regularly updated game content, and blogs and news pages to keep the site fresh even if the game content remains fairly static.

These features may be used to facilitate a "community of practice". This is a term from the social anthropologist Etienne Wenger. She shows that building and supporting communities that enable an exchange of knowledge build social capital, create new knowledge, and drive innovation [10]. In other words, the community has the power to drive an issue with the vigor of masses of people and create voluminous content – and potentially more influential activity – than that can be created by a small game design team.

This idea of user generated game content targeted at social cause is exemplified in the recent partnership between Microsoft and the Games for Change organization with their *Xbox 360 Games for Change Challenge* [11]. This world-wide contest encourages student teams to create games about global warming using Microsoft's *XNA Game Studio Express* software. Winning teams will receive cash prizes and a shot at being included in the *Xbox Live Arcade* online service.

Maintain journalistic integrity

Objectivity and an obligation to the truth is a guiding principle of journalism [12]. Journalism is the primary way that the public interprets and understands our complex world and journalists are mediators between the public and policymaking elites [13]. Given these points games for change are clearly a powerful form of modern journalism. Games can provide a more accessible and deeper understanding of complexities in the world than traditional journalism through interactivity and hands-on engagement.

A game about a social issue is most credible when it presents the issue objectively. This means that system parameters and game variables should be based on hard facts where possible. It also means that one subjective point of view should not overwhelm the message of the game. Ideally, a game should factually simulate how a social issue works so players can gain an unbiased understanding of it and then experiment with solutions. Credibility of the simulation here is key if we expect to convert dispassionate viewers into engaged citizens. A good example here is the game *Peacemaker*. This game includes footage and photos from actual events in the Israeli-Palestinian conflict. These events are triggered by the game state that are based on real situations and incidents [14]. A second example is from the game *U.N. Food Force*. This game simulates the activities of the U.N.'s World Food Programme through a series of missions and illustrates the effectiveness of different actions using objective statistics [15]. The goal of the game is to allow players to experience the real situation and thereby persuade them to take action for helping by giving to the WFP, spreading the word, etc. A third example is from the game *Cyber-Budget* – which was developed by the French government to let citizens understand the trade-offs involved with national expenditures [16]. The game incorporates real-world fiscal information and choices. A goal of the game is to allow citizens to understand the real trade-offs experientially so they will be more satisfied that the government is managing the budget effectively.

Maintaining objectivity – in both game design and traditional journalism – is easier said than done. This is because game designers have to make creative judgments about system elements as well as aesthetic elements. Those judgments necessarily form a point of view. Nonetheless, striving for objectivity should be a guiding principle for games for change because it will ultimately make a game more credible and persuasive to users.

Measure transference of knowledge

To date, few games have attempted to measure the knowledge they transfer to players. This is mostly due to the fact that games have traditionally been entertainment applications and developers simply have not had reason to measure a player's knowledge. It is valuable for games about social causes, however, to define the core, objective

messages that are to be communicated up front and then incorporate plans for measuring whether or not players are receiving those messages through play. Measuring what players are learning can be straightforward and is generally accomplished in two ways: 1) through in-game surveys and 2) through focus groups.

In-game surveys need not take place after the game is finished – indeed, they can be incorporated into the flow of the game. For instance, *The Redistricting Game* offers a set of two questions at the end of each mission. Data is collected from these questions via the internet and analyzed to see if the game is having an impact on the attitudes of the players. It should be noted that care must be taken when writing these questions to ensure objectivity. As such, it is recommended that the survey questions be developed by third-party research psychologists – and specifically not by the designers of the game – in order to get credible results. The reason that the design team should not develop the questions is because it is too easy for biased writers – even subconsciously – to lead the user to a desired result. Once surveys are created they can be administered online or via focus groups with equally valid results [17].

The key question is: can we learn to make more articulate games in the future by measuring transference in our games today?

Make it fun

Modeling dynamic social issues to simulate reality takes real design and engineering skill. Making those simulations accessible and fun to play can be downright difficult [18]. Further complicating the matter is that people balk at games that seem like edutainment. Game designers are faced with trade-offs that often boil down to:

- increasing system realism allows you to communicate a deeper message but typically makes for a less accessible, less fun play experience and thus less people will want to play the game
- decreasing system realism typically makes a more accessible, more fun play experience (and thus more people will play it). However the message that you can communicate is typically much more shallow

Note: The phrase “system realism” refers to how much the game simulates the mechanics of a given topic. For example a game about tennis could have minimal system realism as in the game *Pong* or it could have deep system realism as in the professional tennis tour simulation game *Smash Court Tennis 2*. “System realism” is independent from visual realism.

An example of the trade off described above can be illustrated with a comparison of the games *A Force More Powerful* and *Advance Wars*. Both are turn-based strategy games that use a Subject-Verb-Object play mechanic. The games are similar in their core game structure. Aside from

this structural similarity the two games are vastly different in interface, aesthetic, and mission design because they were built for vastly different purposes: *A Force More Powerful* is a game for change and *Advance Wars* is a game for entertainment.

The developers of each of these games made design choices suited to their purposes. *A Force More Powerful* teaches players about overcoming oppression through non-violent means. The game is based on the acclaimed book and documentary by the same name. *AFMP* strives for deep system realism and accuracy as it simulates the detailed actions that an activist has available when working to overcome oppression in the real world. The player has access to a large number of virtual people called “Tactic Coordinators” who each include detailed profiles of personal skills and abilities. These are the Subjects in the Subject-Verb-Object system. There are dozens of different Verbs – which are called “tactics” - available for each Tactic Coordinator on each turn. Verbs are diverse ranging from things like “Write Manifesto”, to “Hold Fundraising Party”, to “Occupy Building”. There are eight ways to look at game state information using the interface. The rule book for playing the game is 116 pages long. Missions take hours to complete and require deep thinking and long term planning.

Contrast *AFMP* with the entertainment game *Advance Wars*. In *Advance Wars* the Subjects are units such as infantryman and tank; one Verb dominates the game - “attack”. The aesthetic is Anime-esque and brightly colored. This turn-based strategy game also creates a play experience that requires some deep thinking but the whole product is tuned for maximum entertainment value.

The point is that the game designers in each of these examples dealt with the trade-offs between a) detailed system realism in order to communicate learning objectives and b) stylized system realism in order to maximize fun. As a result, *AFMP* players acquire real, actionable knowledge about the dangerous work of overcoming oppression. *AFMP* players who post online tend to not talk about how much fun the game is (because many do not think it is any fun at all) but rather they talk about how much real knowledge they have acquired. The game is used as part of the course work for a class at the University of Pittsburgh called “Theories of Rhetoric: Social Movements”. Conversely, *Advance Wars* is a commercial hit as an entertainment app: it has spawned a franchise of sequels and sold millions of units worldwide [19].

Designers of games for change – including *A Force More Powerful* – strive to achieve a play experience that is both fun and imparts social messages. There are examples that represent each extreme and examples that fall at varying points between on the continuum. Each design team has to make their own choices in this realm suited to the needs of

their games. Balancing between the two impulses comes down to creative judgment and is an art rather than science.

In conclusion, learning science has shown that humans learn more effectively via active learning (such as that offered by games) than via passive learning [20]. As such, games have great potential for communicating a shared understanding of complex social phenomena. Today's game designers have the ability to take these and other powers inherent in games to help have a positive effect in the world.

REFERENCES

1. Theory of Change: ActKnowledge and the Aspen Roundtable, "Basics," <http://www.theoryofchange.org/html/basics.html>
2. Cialdini R, 1984 *Influence: The Psychology of Persuasion* Collins Books
3. Rittel, H., and Webber M; "Dilemmas in a General Theory of Planning", *Policy Sciences*, Vol. 4, Elsevier Scientific Publishing Company, Inc., Amsterdam, 1973.
4. "U.S. in the World: Talking Global Issues with Americans – A Practical Guide", 2005 co-published by the Rockefeller Brothers and The Aspen Institute <http://www.usintheworld.org>
5. Goffman, E 1974 *Frame Analysis: An Essay on the Organization of Experience* Harvard University Press
6. Lakoff G 2006 "Simple Framing" - <http://www.rockridgeinstitute.org>
7. Conklin J "Wicked Problems and Social Complexity", Cognexus Institute (2001)
8. Stokes B, Seggerman S, and Rejeski D "For a Better World: Digital Games and the Social Change Sector" Published by Games for Change and the Woodrow Wilson International Center for Scholars (2006)
9. Kim, A 2000 *Community Building on the Web: Secrets for Successful Online Communities*. Peachpit Press
10. Wenger E, McDermott R, and Snyder W, 2002 *Cultivating Communities of Practice: A Guide to Managing Knowledge*. Harvard Business School Press, Boston
11. *Xbox 360 Games for Change Challenge* <http://www.xbox.com/g4c>
12. Kovach, B. and Rosenstiel T. 2001. *The Elements of Journalism*. Three Rivers Press.
13. Lippman W, 1949. *Public Opinion*, Simon and Shuster
14. *Peacemaker: Impact Games* <http://www.peacemakergame.com>
15. *UN Food Force*, United Nations World Food Programme <http://www.food-force.com>
16. *Cyber-Budget*, French Ministry of Economy, Finance, and Industry, <http://www.cyber-budget.fr/>
17. Gunn H, 2002 "Web-based Surveys: Changing the Survey Process" First Monday – Peer Reviewed Journal on the Internet, Volume 7, Number 12
18. Kelly H, Swain C, et al. 2007. How to Build Serious Games *Communications of the ACM* (Vol 50, Issue 7)
19. "2006-2007 Home Interactive Entertainment Market Update", 2007 published by the Arcadia Investment Corporation
20. Schank, R 1995 *What We Learn When We Learn by Doing*. Technical Report ILS Technical Report No. 60, Institute for Learning Sciences, Northwestern University.

To effect change or to affect change? Learn the correct spelling of this phrase with definitions and sentence examples. Define effect change phrase. Individual investors can effect change this year on another topic: company policies governing when it should act to recover an executive's compensation because of corporate wrongdoing. "The New York Times. When to Use Affect Change.