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# Video Games as Change Agents – The Case of Homeless: It's No Game

T.J. Lavender

## Abstract

In recent years, with the coming of age of a new generation of social activists raised on video games and the release of new tools that make video game development easier for individuals and small groups, many activists have begun to release video games designed to further their cause. However, there is little evidence as to the effectiveness of video games in changing attitudes. The video game, *Homeless: It's No Game* was developed to determine whether people could be persuaded to become more sympathetic to the plight of the homeless by playing the role of a homeless woman in a video game and whether this persuasive effect could be measured. Volunteers were recruited to answer a survey of attitudes towards the homeless and were then assigned to either play the game, read a short story about homelessness, or to be part of a control group, after which the survey was re-administered. Results were mixed, with some indicators showing an increase in sympathy towards the homeless and others showing no significant effect. There were also some indications that playing the video game led to a strengthened belief in the effectiveness of video games in raising awareness of social issues. The results indicate that games can help reinforce a social activist message, especially if their audiences consider them realistic.

**Keywords:** video games, games for change, persuasion, serious games, homelessness, persuasive games

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# Video Games as Change Agents – The Case of Homeless: It’s No Game

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## Introduction

Social advocacy groups and individuals attempting to motivate people to support their cause are increasingly using video games to help achieve their goals. The coming of age of a generation of social activists raised on video games, combined with the release of easy to use game development tools and the rise of the Internet as an inexpensive game distribution platform have led to an increase in the numbers of what are now called “games for change” in recent years (Peters, 2007). Activist game developers and researchers have even created a formal organization structure, called Games for Change, which is, according to its website, “the primary community of practice and international nexus for those interested in making digital games about the most pressing issues of our day – from race to poverty to the environment” (Games for Change, 2010).

These social activist games are a subset of a larger genre known as persuasive games (Bogost, 2007). Persuasive games are being released by a variety of different organizations, including environmental organizations, corporations, governments, political parties, religious groups, health agencies and international agencies. Even military and

paramilitary organizations – from the U.S. Army to Hezbollah – have published video games.

These persuasive games vary as greatly as the ones issued by commercial video game publishers. Persuasive games can be first person shooters, adventure games, sports games, puzzle games, arcade games or role-playing games. They can be as crude as *Revenge of the PETA Tomatoes* (produced by People for the Ethical Treatment of Animals) or as sophisticated as *America's Army* (published by the United States Army). They can languish in obscurity in forgotten corners of the web or receive widespread acclaim and popularity, such as that enjoyed by the *World Food Programme's Food Force*, which has been downloaded more than four million times. Their messages vary as well – persuasive games are used to deliver commercial messages (advergemes), to espouse political or social causes, to modify social or health behaviours or to educate people about issues such as the environment or political injustice.

Clearly, a lot of time, energy and money is going into the production and distribution of persuasive games. But to what effect? Do these games actually succeed in their aims?

#### About Persuasion and Persuasive Games

Persuasion has been defined as the process of trying to modify or change the values, wants, beliefs and actions of others (O'Shaughnessy and O'Shaughnessy, 2006). It differs from influence in that persuasion is deliberate, whereas influence can be incidental. Applying this definition to video games, a persuasive game would be a video game that deliberately tries to alter or modify the values, wants, beliefs and/or actions of its players. This definition precludes games that influence behaviour or attitudes unintentionally. For example, *Tetris* would not be considered a persuasive game if it were to induce in its players an antipathy towards L-shaped blocks, because that was not the intention of its creator.

In the case of games intended to change their players' actions, it should be relatively easy to determine success or failure. For example, a political game that aims to get people to vote for a particular party could ask players of the game whether they voted for the party or not, controlling for other factors that might influence the decision to vote. Or if a game is designed to get people to visit a website, then one can count the number of players who clicked through from the game to the website.

However, games that aim at changing values and beliefs are more difficult to measure (O'Keefe, 2002). And, as Khaled (2007) notes, there is no agreed standard for the evaluation of persuasive games. Nevertheless, some attempts have been made to measure the effect of persuasive games. In 1997, Lieberman published results of the effectiveness of health promotion games for children. She found that children who played an antismoking video game for one hour expressed significantly stronger intentions not to smoke. She also found significantly higher knowledge of health issues and better self-treatment for asthmatic children who played a video game about asthma compared to children who did not play the game (Lieberman, 1997). More recently, Khaled (2007) reported that her game, *Smoke?* was successful in shifting peoples' anti-smoking attitudes. However, outside the field of health-based games, little research has been undertaken into the effectiveness of persuasive games in general and games for change in particular. And even in the case of health games, only a few studies have been undertaken, with no large-scale or longitudinal studies. Other types of persuasive games have been even less studied. For example, little, if any, research has been undertaken as to whether video games can change peoples' attitudes towards social or environmental issues. And yet, games intended to do so continue to be produced, with new titles being frequently announced.

The current study was undertaken to address this scarcity of empirical data about the effectiveness of social advocacy

video games. The author created a video game, *Homeless: It's No Game*, to explore whether attitudes towards a particular social issue could be modified by playing a game and, if so, whether this attitudinal change could be measured.

### Homelessness in Video Games

Homelessness was chosen as a game topic because it is a social problem that is growing in public awareness, because of its immediate and significant impact on the lives of people, its implications for social policy, because of uncertainty and misunderstanding about its causes and solutions, and because of the need for public support of measures to alleviate the problem.

In the Vancouver region, homelessness is a very visible and growing problem, due to a number of inter-related factors including a scarcity of housing, the attractiveness of the region and its climate, decreased government support for housing, and the de-institutionalization of mental health patients (Vancouver Homeless Funding Model, 2006). Despite recent efforts by provincial and local governments to ameliorate the problem, homelessness still persists. The first part of this decade saw a significant growth in the number of homeless in the region, almost doubling from 1,121 persons in 2002 to 2,660 persons in 2008, according to Greater Vancouver Regional Steering Committee on Homelessness (GVRD, 2008).

Homelessness seems to attract extreme emotions. A complaint on the Gamespot discussion board about the way the homeless were treated in a new video game (*Condemned 2: Bloodshot*) provoked the following responses (the thread has since been deleted):

most of them needed a good taser  
and a small pipe to the face



McGee released *Bad Day L.A.*, which featured a homeless person as its protagonist. However, the character, a well-off scriptwriter, had deliberately chosen to be homeless because of his disgust with society. *Bad Day L.A.* attracted considerable controversy even before its release, with some homeless advocates denouncing it for its depiction of homeless people and calling on the game's manufacturer to cease production and others defending the game: "Alienated homeless guy saves city and reluctantly defends people who normally wouldn't give him the time of day. What's not to like?" (McGee, 2005).

*Street Survivor*, developed by Australian social activist Kirsty Baird, looks at homelessness from a first-person perspective. The game, which has been delayed because of funding issues, is intended to discourage at-risk youth from living on the streets (Baird, 2006). In a similar vein is *Street Smart Detroit* ([streetsmartdetroit.bradjensen.info](http://streetsmartdetroit.bradjensen.info)), which is still under development at the time of writing.

A more commercial product is *Condemned Two: Bloodshot*, a first-person action game for the Xbox 360 and PlayStation 3 released in March 2008. In this game, homeless people are the villains – "bums" who have been possessed by demonic forces. Like *Bad Day L.A.*, it has generated some controversy over its depiction of homeless people (Gamespot, 2008).

It is clear that except for *Street Survivor* and *Street Smart Detroit* (neither of which have been released yet), most video game depictions of the homeless have been unrealistic and based on negative stereotypes of homeless people.

#### *Homeless: It's No Game*

*Homeless: It's No Game* (Figure 1) was an attempt at a more realistic portrayal of the homeless. The game puts the player in the position of a homeless woman trying to survive in a hostile city environment. The goal of the game is to survive for 24 hours in game time (about 15 minutes in real time) without allowing self-esteem to drop to zero. Random

encounters are generated with other characters, such as police officers, muggers, irate citizens and other homeless people. The results of these encounters are conditioned by a positive feedback loop – the higher the character’s self-esteem, the more likely the encounter will be positive (adding to self-esteem), the lower the self-esteem, the more likely the encounter will be negative (decreasing self-esteem).

## Homeless: it's no game



Welcome to life on the street. Can you survive for 24 hours without the comforts of home? Politicians, crystal meth addicts, vicious dogs, reckless drivers and irate citizens are just some of the obstacles you'll encounter as you struggle for food, shelter and self-esteem.

Panhandling, washing car windows, foraging for bottles and other discarded goods - it's all in a day's work when you don't have a home.

**play**

**instructions**

**about**

**exit**

Figure 1. Opening screen shot, *Homeless: It's No Game*

The graphics are done in a retro 1980s style and the game world is a finite, 2-dimensional, 19 x 19 grid consisting of streets, houses (which are not accessible), coffee shops, public washrooms, liquor stores, garbage and recycling bins, churches or parks (Figure 2). The player navigates around the game world using the arrow keys. The game was designed in Adobe Flash and is available to play on the Internet at [www.homelessgame.net](http://www.homelessgame.net).



In terms of age, 52% were under the age of 40 and 48% were 40 or older. Fifty percent had at least some university education and a similar percentage had an annual income over \$50,000. Most respondents were infrequent players of video games, with 35% saying they did not play video games at all and 29% saying they played games fewer than five hours a week. Eight percent reported playing more than twenty hours per week.

All participants completed an initial survey about homelessness, which included questions on knowledge of homelessness, interest in homelessness and awareness of the causes of homelessness. Participants were also asked to rank various media (video games, movies, television, magazines and newspapers) on their effectiveness in raising awareness of social issues (Appendix A).

Respondents were also asked to indicate how strongly they agreed with nine statements regarding the homeless. The statements included “For most homeless people, it is their own fault”, “Most homeless people just don’t want to work”, “Our society does not do enough to help homeless people” and “Compared with other social problems how would you rate the importance of helping homeless people”. Responses to the nine questions were summed and averaged to produce an empathy index.

One week after completion of the initial survey, members of Group 1 played *Homeless: It’s No Game* while members of Group 2 read a short narrative about a day in the life of a homeless woman (Appendix B). Immediately after playing the game or reading the narrative, participants were asked to assess their feelings towards the homeless, having played the game or read the narrative. They were also invited to comment on the game or narrative.

Two weeks after the initial survey, members of all three groups retook the survey, with members of Groups 1 and 2 answering additional questions relating to the game or the narrative respectively.

### Quantitative Results

No significant changes were noted in knowledge of homelessness or interest in homelessness in any of the three groups. Nor was there a significant change in the homelessness empathy index.

However, playing the game did seem to increase sympathy for homeless people (Table 1). Members of Group 1, responding to the question “On a scale of 1 to 5, please rate your feelings towards homeless people, having played the game (1 = much less sympathetic, 5 = much more sympathetic)”, showed increased sympathy towards the homeless immediately after playing the game ( $M = 4.05$ ,  $SD = .697$ ). Their sympathy rose further over the next seven days ( $M = 4.35$ ,  $SD = .606$ ),  $t(17) = 3.00$ ,  $p < .05$ . This result did not hold true for reading the narrative. Members of Group 2 reported increased sympathy immediately after reading the narrative ( $M = 4.06$ ,  $SD = .802$ ) but their level of sympathy had dropped significantly by the time of the final survey ( $M = 3.50$ ,  $SD = .786$ ),  $t(18) = 3.00$ ,  $p < .05$ .

Table 1. Change in sympathy towards the homeless for Group 1 and Group 2 after playing the game/reading the narrative.

	<b>Group 1 (Game)</b>	<b>Group 2 (Narrative)</b>
<b>Day 1</b>	4.05	4.06
<b>Day 7</b>	4.35	3.50

Playing the game also had a significant effect on players’ perception of the effectiveness of video games in raising awareness of social issues (Table 2). When asked the question “Please rank the following means of communication for their effectiveness in raising awareness of social issues (1 = not effective, 5 = very effective)”, members of Group 1 initially ranked video games as not effective ( $M = 1.74$  out of 5,  $SD = 1.05$ ). However, after playing, they raised their ranking significantly ( $M = 2.65$ ,  $SD = 1.46$ ),  $t(23) = 2.50$ ,  $p < .05$ ). No

such result was observed for either Group 2 or Group 3. Nor was such an increase observed with the game group for the other media options – movies, the world wide web, magazines or television. It should be noted, however, that even after playing the game, members of this group still rated video games as the least effective medium for raising social awareness.

Table 2. Pre- and post-test comparison of effectiveness of various media in raising social awareness

	<b>Group 1 (Game)</b>	<b>Group 2 (Narrative)</b>	<b>Group 3 (Control)</b>	<b>Overall</b>
<b>Video games 1</b>	1.74	2.30	2.35	2.11
<b>Video games 2</b>	2.65	2.05	2.57	2.44
<b>Newspaper 1</b>	3.96	3.65	3.58	3.74
<b>Newspaper 2</b>	3.38	3.90	3.83	3.69
<b>Movies 1</b>	2.92	3.43	3.42	3.24
<b>Movies 2</b>	3.35	3.43	3.29	3.35
<b>Web 1</b>	3.52	3.52	4.00	3.68
<b>Web 2</b>	3.33	3.67	3.48	3.48
<b>Magazines 1</b>	3.12	3.14	3.48	3.24
<b>Magazines 2</b>	3.19	3.71	3.43	3.43
<b>Television 1</b>	4.04	3.86	4.12	4.01
<b>Television 2</b>	3.73	3.86	4.25	3.94

Finally, a significant positive correlation was observed in Group 1 (Table 3) between how realistic respondents felt the game was at depicting homelessness and two other variables: their feelings towards the game character ( $F(4,10) = 3.77, p < .05$ ) and how effective they thought the game would be in increasing awareness of homelessness ( $F(4,11) = 3.33, p < .05$ ). Those who felt the game was not a realistic depiction of

homelessness were less likely to feel the game would be effective in increasing homelessness awareness ( $M = 1.00$ ) and were also less likely to feel positively towards the character they played ( $M = 3.00$ ), while those who felt the game was a realistic depiction of homelessness felt strongly that the game would be effective ( $M = 4.75$ ) and felt positively towards the game character ( $M = 7.20$ ). This correlation was not observed with Group 2, the group that read the narrative about the homeless character.

Table 3. Relationship between perception of game realism and game effectiveness, feelings towards game character

How realistic was the game in depicting homelessness?	Effectiveness at increasing awareness (out of 5)	Feel positively towards the character (out of 9)
1 (not realistic)	1.00	3.00
2	4.00	6.00
3	4.00	6.00
4	3.80	5.60
5 (very realistic)	4.75	7.20

### Qualitative Results

Respondents were also invited to comment on the game, on the narrative and on homelessness. The responses were mixed, with some players indicating a change in empathy:

“This game makes me think how to survive everyday. With no home or job. How to find junk things at recycle bin and to sell things. How other people look down at me. Wandering around [...] better understanding”

“The relentless grind for survival”

“playing made me feel hopeless, therefore I understand why homeless

people walk with their heads down, avoiding contact and sometimes these people are difficult to approach”

“I became involved, I was homeless for a minute”

However, others had a different experience:

“I was too involved in trying to figure out the game to focus on the subject behind it”

“This game was not real”

“We need to help the homeless, not do games about it”

“It's just a game; and, not very realistic”

#### Discussion

Persuasion is a complex process, affected by many inter-related variables. Nevertheless, *Homeless: It's No Game* does seem to have had a measurable persuasive effect. Those who played the game reported an increase in sympathy towards the homeless immediately upon playing the game, an effect that persisted over the period of the experiment (Table 1). This result was borne out by some of the comments of the players: “I was homeless for a moment,” said one. “Playing made me feel hopeless,” said another. Another indication of a measurable persuasive effect was the correlation between how realistic players considered the game at depicting homelessness and how positive they felt towards the game character (Table 3). Those who considered the game very realistic felt very positively towards the character they played (7.20 out of 9.00), which contrasts with those who read the narrative about the character – even those readers who

thought the narrative was realistic did not feel positively towards the character they read about (mean of 4.75 out of 9.00). From this, one could conclude that the game was more effective at getting the player into the skin of the character than the narrative was.

However, other measurements of the persuasiveness of the game did not show an effect. The empathy index showed no significant change as a result of playing the game. Furthermore, many of those who did play the game declared they were not persuaded by it: “Game seemed pointless. Didn’t really tell me anything I didn’t know” and “This game was not real,” are typical of the remarks of this group.

As O’Keefe (2002) notes, capturing attitudinal change is difficult. It would seem that some of the participants in the study were affected by the game, and that this effect was measurable, but other participants were either not affected or the effect could not be measured. The success of the persuasive message in this study did not seem to be affected by factors such as age, sex, interest in homelessness or experience in playing video games, reflecting the complexity and uncertainty of persuasion.

Three other results emerged from the study that should be of interest to designers of persuasive and educational games. First, there was the observed correlation between how realistic players considered the game and how effective they considered it. As noted, participants who rated the game as realistically depicting homelessness were more likely to consider the game effective in increasing awareness of homelessness. Conversely, those who thought the game did not depict homelessness realistically were less likely to think it could be an effective persuader. The inference is that in order to be effective, a persuasive game first needs to be convincing.

Secondly, according to the results of this study, video games still have a problem being treated seriously as a medium of expression. When participants were asked to rate the effectiveness of various media in raising awareness of

social issues, video games rated the lowest ( $M = 2.11$  out of 5), significantly lower than movies ( $M = 3.24$ ) or television ( $M = 4.01$ ). Some of the comments of people who played the game bear this out: “i (sic) actually didn’t appreciate the game considering the seriousness of homelessness – it is not a game” and “Homelessness is much too serious to quantify in a simple game”. Once people actually played the game, their rating for video game effectiveness did rise, to 2.65 out of 5 – but still significantly below the rating given to other media. If this scepticism about the effectiveness of video games as agents of change is a general one, it does not bode well for social activists, political parties, health organizations or even educators hoping to use video games as legitimate tools. Attitudes towards serious games may change as the industry matures, but at present these games struggle with the reputation (sometimes justified) that they are boring to play. An article in Slate, “World of Borecraft: never play a video game that’s trying to teach you something” (Peters, 2007), is indicative of this attitude. If these games are considered frivolous as well as boring, it will be difficult to attract people to play them or to convince decision-makers to allow their use in persuasive or pedagogical campaigns.

Finally, it should be noted that many participants in the study expressed difficulty or frustration with the game’s interface. “I was too involved in trying to figure out the game to focus on the subject behind it,” was a typical comment. While it could be argued that this frustration actually reinforces the message of the game – the frustration of trying to survive as a homeless person – it is more likely that an awkward or difficult interface hinders the persuasive effect. A player who gives up in frustration or has to struggle with an unintuitive interface is less likely to absorb a game’s message.

### Conclusion

One cannot generalize based on a single study involving a small group of people playing a single video game. However,

the fact that at least some of the players of *Homeless: It's No Game* felt more sympathetic to the homeless after playing the game and that this effect persisted for at least seven days is encouraging for those interested in measuring the effectiveness of social activist video games. Clearly though, there are many questions that remain to be answered. How persistent is the persuasion? What effect is played by other factors such as the type of game, its complexity or its interface? Would repetition influence the persuasive effect? Does game platform have an effect (an especially important issue given the increased migration of games to smaller platforms such as smartphones and tablets)? More research, involving different games, treating different social issues, with different audiences is needed before the effectiveness of social activist games can be properly evaluated.

## Appendix A

### A Survey of Attitudes Towards the Homeless

1. On a scale of 1 to 5 (1 = not knowledgeable, 5 = knowledgeable) how knowledgeable do you consider yourself about homelessness?
2. On a scale of 1 to 5 (1 = not interested, 5 = very interested) how interested are you in the issue of homelessness?
3. Of the following, what do you think are the most important causes of homelessness? Please rank according to order of importance:
  - Unemployment
  - Eviction/foreclosure
  - Mental illness
  - One's own choice
  - Family conflict
  - Drug and/or alcohol problems
  - Lack of affordable housing
4. On a scale of 1 to 9, indicate your level of agreement with the following statement: For most homeless people, it is their own fault that they are homeless.
5. Most homeless people just don't want to work.
6. On a scale of 1 to 9, how much do you personally care about the plight of the homeless?
7. On a scale of 1 to 9, indicate your level of agreement with the following statement: Our society does not do enough to help homeless people.

8. Compared with other social problems we face today (e.g., crime, education, drugs, AIDS, global warming, traffic), how would you rate the importance of helping homeless people? (1 = not at all important, 9 = extremely important)
9. On a scale of 1 to 9, indicate your level of agreement with the following statement: Our society should do more to protect the welfare of homeless people.
10. In general, what are your feelings towards homeless people? (1 = extremely negative, 9 = extremely positive)
11. On a scale of 1 to 9, indicate your level of agreement with the following statement: Most homeless people could get a job and off the streets if they wanted to.
12. On a scale of 1 to 9, indicate your level of agreement with the following statement: Most homeless people choose to live that way.
13. Please rank the following means of communication for their effectiveness in raising awareness of social issues (1 = not effective, 5 = very effective):
  - Newspapers
  - Movies
  - The World Wide Web
  - Magazines
  - Video games
  - Television

14. On a scale of 1 to 5, please rate your feelings towards homeless people, having played the game/read the story. (1=much less sympathetic, 5=much more sympathetic)
15. How effective was the game/story at increasing awareness of homelessness? (1 = not effective; 5 = very effective)
16. How realistic was the game/story in its portrayal of homeless people? (1 = not at all realistic, 5 = very realistic)
17. How positively do you feel toward the homeless character in the game/story? (1 = not at all, 9 = very)
18. Please enter any other comments you may have about either the game/story or about homelessness.

## Appendix B

### A Day in the Life of a Homeless Woman

Congratulations. You live in one of the most beautiful cities in the world. Unfortunately, you're living on the street. Forced to leave your home to avoid an abusive relationship, you're alone in the city with no money, no friends, no resources. You're homeless.

It's a tough life when you're homeless. The trivial things that the rest of us take for granted, like having a place to sleep or shelter from the rain, are missing. You can't even go to the bathroom whenever you need to. Instead, you have to find a public washroom that's open or go into a restaurant and try to use their facilities. But public washrooms are few and far between and are often closed – for maintenance, for cleaning, or just closed for the night. And restaurant washrooms are only for patrons and if you're homeless and scruffy looking, you'll have a tough time convincing restaurant staff to let them use the facilities unless you buy something to eat.

And how can you buy something to eat if you don't have any money? You can try begging for change – but that takes nerve, and confidence, something that suffers when you're down on your luck. You can rummage in the garbage for stuff to sell – you'd be amazed what people throw away – but it's filthy, and dangerous, and these days most dumpsters are locked.

You can check out recycling bins for returnable bottles, but often you won't find anything – you're not the only one trying to make a living on the street – and there's always the danger of cutting yourself on broken glass, or worse. And once you do get your bottles or your salvage goods, then you have to turn them into money. The liquor store's only open certain hours, and only takes twelve bottles maximum, and often you can't find anyone who wants to buy what you've rescued from the dumpster.

You can always try washing car windows, but you need a squeegee and bucket for that, and chances are the police will hassle you or motorists won't give you anything.

One thing you miss when you're living on the street is water. You get thirsty when you're walking on concrete pavement all day, but where are you going to get water? Maybe that server in the restaurant will give you some, but don't count on it.

There's something about the look of a homeless person that brings out disgust and fear in even the most liberal-minded person.

Other hazards abound on the streets of the city – vicious dogs, reckless drivers, uptight residents who don't want you in their neighbourhood, junkies and thieves. And you, being vulnerable, are an easy target. And then there's the police – they'll accuse you of stealing your stuff, make you move on from the doorway where you've bedded down for the night or just hassle you on principle.

Yes, it's tough being homeless, and it's not easy to get yourself out of that situation when you're spending all your energy and resources just trying to survive.

Works Cited

- Amory, Alan. "Game object model version II: a theoretical framework for educational game development." *Educational Technology Research and Development* 54 (2006): 1-27.
- Baird, Kirsty. Personal Interview. 16 June 2006.
- Bogost, Ian. *Persuasive Games: The Expressive Power of Video Games*. Cambridge, MA: The MIT Press, 2007.
- Booth-Butterfield, Steve and Jennifer Welbourne. "The Elaboration Likelihood Model: Its impact on persuasion theory and research." *The Persuasion Handbook: Developments in Theory and Practice*. Eds. James Dillard and Michael Pfau. Thousand Oaks, CA: Sage Publications, 2002: 155-173.
- CTV Vancouver. "Poll: Vancouverites say homelessness top issue." *CTV News*, December 4, 2006. URL accessed on 12 December 2008  
<[http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20061204/vancouver\\_homelessness\\_061204/20061204/](http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20061204/vancouver_homelessness_061204/20061204/)>
- Games for Change. "About Games for Change." Games for Change, 2010. URL accessed on 10 June 2010  
<<http://www.gamesforchange.org/ourwork>>
- Gamespot. "Review of Condemned 2: Bloodshot." Gamespot Game Reviews (2008). URL accessed on 2 April 2008  
<[www.gamespot.com/xbox360/adventure/condemned2bloodshot/review.html?om\\_act=convert&om\\_clk=gssummary&tag=summary;review](http://www.gamespot.com/xbox360/adventure/condemned2bloodshot/review.html?om_act=convert&om_clk=gssummary&tag=summary;review)>

- Greater Vancouver Regional District. "2008 Homeless Count Confirms More Homeless People On Our Streets For Longer Periods." Metro Vancouver (2008). URL accessed on 28 June 2010  
<<http://www.metrovancouver.org/planning/homelessness/ResourcesPage/>>
- Khaled, Rilla. *Culturally-Relevant Persuasive Technology*. Wellington, NZ: Victoria University of Wellington, 2007.
- Lieberman, Debra A. "Interactive Video Games for Health Promotion: Effects on Knowledge, Self-Efficacy, Social Support, and Health." *Health Promotion and Interactive Technologies: Theoretical Applications and Future Directions*. Eds. William R. Gold, Richard L. Street and Timothy R. Manning. Mahway, NJ: Lawrence Erlbaum Associates, 1997: 103-120.
- Mae, Fannie. "Homelessness in America: Americans' Perceptions, Attitudes and Knowledge." General Population Survey & City Surveys, Gallup Inc., November 2007.
- Miller, Gerald R. "On Being Persuaded." *The Persuasion Handbook: Developments in Theory and Practice*. Eds. James Dillard and Michael Pfau. Thousand Oaks, CA: Sage Publications, 2002: 3-16.
- O'Keefe, Daniel J. *Persuasion: Theory and Research*. Thousand Oaks, CA: Sage Publications, 2002.
- O'Shaughnessy, John and Nicholas J. O'Shaughnessy. *Persuasion in Advertising*. London, UK: Routledge, 2004.

Rice, Paul. "Video Game Divides Activists." *American McGee*,  
September 20, 2005. URL accessed on 28 February  
2008  
<[http://www.americanmcgee.com/wordpress/  
2005/09/20/bdla-stirs-controversy/](http://www.americanmcgee.com/wordpress/2005/09/20/bdla-stirs-controversy/)>