Newsgames: Procedural Rhetoric meets Political Cartoons

Mike Treanor

University of California, Santa Cruz 1156 High Street, Santa Cruz, California, 95064 mtreanor@soe.ucsc.edu

ABSTRACT

Video games have been created about political and social issues since the early days of the medium. In recent years, many developers are rapidly creating and releasing games in response to current events. These games are being referred to as newsgames. With an increasing number of people citing the internet as their primary news source, it would appear that newsgames could become an important part of how people understand current events and could rise to be an important and expressive video game genre. However, the word "newsgame" is currently only quite loosely defined, resulting in the term being applied to many forms of serious, or nonfiction games. Also, despite the quantity of games that relate to current events, very few newsgames can be said live up to the defining claims that newsgames are the video game equivalent of political cartoons [25] - a well developed and established medium for political expression.

This paper fleshes out the political cartoon comparison in order to learn from the long history of political cartoons and give direction to the current state of fledgling and unsophisticated newsgames. It also suggests clear and flexible definitive criteria for newsgames as well as a redeclaration their expressive power.

Author Keywords

Newsgames, persuasive games, procedural rhetoric, game design, simulation

INTRODUCTION

Gonzalo Frasca, the person who coined the word newsgame, characterized newsgames by the phrase "simulation meets political cartoons." In other words, newsgames are the video game equivalent to political cartoons. This comparison gives a valuable starting point for how to understand how newsgames function by studying the ways that political cartoons function.

Other approaches to understanding newsgames draw from theories of broadcasting and journalism. Sicart describes newsgames as games that "utilize the medium with the intention of participating in the public debate" [27]. He then presents a normative theory of newsgames where they are described as not seeking to state a specific political

Michael Mateas

University of California, Santa Cruz 1156 High Street, Santa Cruz, California, 95064 michaelm@cs.ucsc.edu

agenda, but instead to shape the space of opinions about a current event for a group of citizens with a shared vision of public interest. To Sicart, newsgames do not persuade or dictate, but rather present an "open space for discussion" [27].

Ferrari focuses on the distinction between a newsgame and an editorial game. He reserves the title newsgame for games that report and communicate about current events in a manner consistent with the theories and traditions of journalism (i.e. games that strive for objectivity, are relevant for a short period of time, etc.). Editorial games are those which have a developed "editorial line" or bias [7] and in many cases are interchangeable with our use of the term newsgame.

Sicart's analysis of newsgames seems to appropriate the term to refer to a set of games that hardly exist, rather theorizing about how games might participate in public discourse. Ferrari, building from both an analysis of existing newsgames and journalism theory, seeks to redefine the term to refer to a broader space of potential games. Our approach, in contrast, seeks to develop a deeper understanding newsgames by taking Frasca's original definition of the newsgame as "simulation meets political cartoon" seriously, and applies an understanding of political cartoons to the existing set of games already described as newsgames. From this, we arrive at a list of suggestive criteria that can serve as a framework for how newsgames can function to at least the same level of sophistication as political cartoons.

POLITICAL CARTOONS AND VIDEO GAMES

Political cartoons are illustrations or comic strips that pertain to political or social issues that are mostly found on the editorial pages of newspapers. Over the years, political cartoons have developed a set of stylistic tropes that utilize visual metaphor and caricatures to explain complicated political situations. For example, a caricature of Uncle Sam performing some unfavorable action will be used represent the U.S. government performing that action. In this way, political cartoons editorialize news stories by using illustrations as visual metaphor along with a few words in the form of a caption.

Breaking New Ground: Innovation in Games, Play, Practice and Theory. Proceedings of DiGRA 2009

© 2009Authors & Digital Games Research Association (DiGRA). Personal and educational classroom use of this paper is allowed, commercial use requires specific permission from the author.

Political cartoons do not strive to report information, and often hardly report the events of a factual story at all. Their primary function is to communicate the author's biased, editorial opinion through persuasive visual and textual metaphor. Through understanding the ways in which political cartoons rhetorically communicate, cartoonists author cartoons that serve to persuade the reader to a particular position. So political cartoons contain the editorial stance of their authors; the cartoonist purposely creates ideologically biased imagery and narratives to persuade the reader to share his stance [6].

In most cases, cartoonists use comedy as a rhetorical strategy to persuade the reader. Imagine a story that involves two arguing parties. By illustrating a perspective to this story with the intention to make the reader laugh at a certain viewpoint, the cartoonist ignores the other stance and rallies support for the obviously correct side of the The cartoonist essentially proves the other stance wrong within the micro world that the illustration and caption creates. In this way, political cartoons are ideologically problematic by only presenting limited view points (those of the author and/or the publication) and only allowing for limited truths to hold in the world that the cartoon establishes. Comedy is just one rhetorical strategy that cartoonists employ to persuade their viewers. Another reoccurring strategy occurs in the form of memorial after most catastrophic events. Political cartoonists know that what they create are not accurate or factual descriptions and would likely not dispute the claim that their work can be understood as propaganda.

Political cartoons can be split into two overlapping categories: the Social Comment cartoon and the proper Political Cartoon [24]. Most editorial cartoons can be considered Social Comment cartoons while Political Cartoons have more specific definitive criteria that must be met. This separation will be utilized to help explicitly state what is missing from most newsgames and what it is that has helped make Political Cartoons become one of the primary mediums of political expression.

Social Comment cartoons are those that are not about a specific news event but rather a broad social issue that most viewers can immediately identify with. For example, a polar bear wearing swim shorts and sunglasses while riding a melting piece of ice in the ocean is a cartoon about global warming. Global warming is not a specific news story, but a social and global issue that most people can recognize immediately. This cartoon does not make much of a compelling statement, but rather acknowledges the existence of the issue using exaggerated imagery. The cartoon does not seek to assign blame, suggest solutions or explain the phenomenon of global warming. The primary response to a Social Comment cartoon is to provide a "smile of recognition" to the reader" [24].

Unlike Social Comment cartoons, Political Cartoons provide specific commentary about the cartoon's subject.

Political Cartoons are about specific events in which the author takes an editorial stance or position. The purpose of the cartoon is often to persuade the reader to agree. A common feature of these cartoons is to use trite events (e.g. celebrity gossip) to make a statement of lasting importance about a more significant aspect of culture (e.g. the news media). Often these cartoons point out a problem in the world and in many cases present a solution. In practice, Political Cartoons serve to offer a summary of a news story and judgment about it all in one.

These two categories of political cartoons can translate well to the field of newsgames and help us understand the current relatively sad state of the genre. Until recently, popular flash game website Addicting Games [1] was one of a few places that embraced the genre of newsgames and referred to them by name. However, with few exceptions, what were referred to as newsgames didn't even refer to current events and couldn't even formally be considered games at all [13]. For example, Dress up Hilary [2] is a 'newsgame' where the player is given comical clothing to dress Hilary Clinton. This game does little more than buy a cheap smile from its player. Games like Dress up Hilary can be compared to Social Comment cartoons like the global warming cartoon described before, and don't take advantage of the opportunities available with video games to provide meaningful commentary or function like the Political Cartoon. Eventually, Addicting Games removed the category of "NewsGame" and now files games of this sort under "Life & Style Games."

As another example of a game that rhetorically functions in the same manner as a Social Comment, rather than Political, Cartoon, consider the "Mel Gibson incident." In 2006, celebrity Mel Gibson made anti-Semitic remarks while being arrested for driving under the influence of alcohol. This story was used as fuel for political cartoons as well as a game titled So you think you can drive, Mel? [12]. The game placed the player as a drunken Mel Gibson driving on the road while collecting bottles of booze and dodging police officers and flying stars of David. Essentially, the game solely provided summary of the event using exaggerated imagery and a simulation of the effects of alcohol on driving without offering much of an editorial statement. This game does not meet many of the criteria of a Political Cartoon as described above and mostly serves to give players a vehicle to immerse themselves in celebrity culture. Because of this similarity with tabloid magazines, these games have been referred to as tabloid games [5]. Many political cartoon interpretations of this story were similar to the unsophisticated and merely summarizing tabloid game (figure 1).

However, other political cartoons about Mel Gibson's arrest did manage to provide meaningful editorial commentary demonstrating the relative maturity of the medium of the political cartoon. These more sophisticated cartoons can help guide the direction of future development of newsgames. The political cartoon seen in figure 2 shows a





Figure 1: The political cartoon (left) and computer game (right) describing Mel Gibson's run in with the law do little more than summarize the the news event in a humorous way [16].

cartoon that contains the characteristics of a *good* Political Cartoon [24]. By trivializing the specific current event, the author uses the story as a tool to make a statement of lasting significance about the media's obsession with celebrity culture. The cartoon does more than merely summarize the event with caricatures as seen in figure 1.

While most games referred to as newsgames are similar in shallow depth and commentary to *So you think you can drive*, *Mel?* (e.g. *Cheney's Fury* [3] and *OJ: Master Thief* [26] amongst many others), games like *Kabul Kaboom* [10] have shown how newsgames have the potential to provide

THE MEL GIBSON FLAP INNUTSHELL:

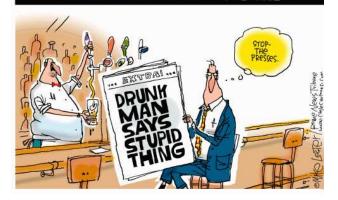


Figure 2: A political cartoon that uses trite subject matter to make a statement of lasting importance [15].

even more impactful commentary than the best political cartoons on the subject (figure 3). In Kabul Kaboom, created by newsgame founding father Gonzalo Frasca [25], the player's goal is to collect food falling from the sky while avoiding falling bombs. After playing for a short while it becomes clear that there is no way of winning this game. The game always ends in failure. This guaranteed failure, initially unknown to the player, allows the player to discover and experience firsthand the author's opinion about the event it simulates. This authorial device has been previously been referred to as the rhetoric of failure [5]. This differs from So you think you can drive, Mel? in how it makes its editorial opinion known through visuals, audio and through the act of playing the game. With Kabul Kaboom, Frasca demonstrates how authoring game rules and mechanics can serve as an additional rhetorical outlet, and in this case is how this game provides deeper commentary than the related political cartoons (figure 3). This game serves as an example of how newsgames have the potential to communicate and persuade players in ways that political cartoons are unable to do.

Bogost describes the term procedural rhetoric as "persuading through processes" [5] or "the way that a videogame embodies ideology in its computational structure" [4]. This provides a lens for analyzing how games persuade through rules and player goals. In *Kabul Kaboom* the game rules guarantee that the player is going to lose by being hit with a bomb. The meaning of the game is understood as the player enacts the rule system, communicating how a foreign policy that involves dropping food and bombs on the same country will ultimately end in failure and hurt the people that the food is meant for.

Frasca himself explains how games can be best understood as simulations rather than narratives and how these

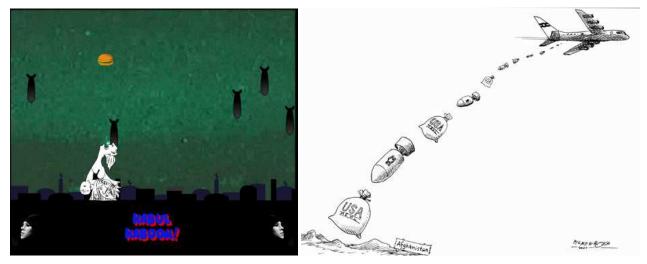


Figure 3: *Kabul Kaboom* (left) is a game that visually communicates what the political cartoon (right) [22] says and also makes a meaningful claim through gameplay.

simulations can privilege or afford a set of particular narrations [11]. Simulations can provide thousands of narrations depending upon the interaction of the player (i.e. a narrative is a particular run through a simulation). However, simulations are not neutral playing grounds where just any outcome is possible. It is then the job of the game designer to imagine the possible interpretations of gameplay as he creates the rules that govern it. *Kabul Kaboom* clearly demonstrates this idea in that the rules of the game always produce the same outcome and influence the player to enact the supporting arguments for the game's editorial assertion.

Crafting the game in that manner effectively proves Frasca's editorial statement within the micro world of the game by having the player enact the undesirable outcome with some degree of agency. Agency is an important rhetorical device because of how it naturalizes an editorial opinion. In this case, agency is achieved by giving the player very little interactivity as well as very little motivation or opportunity to imagine performing any action other than what is available to the player [17]. Kabul *Kaboom* is persuasive, and a great early example of a game that purposefully limits interactivity, while maintaining agency, in order to limit the outcomes of its simulation to communicate a political opinion. From a sampling of other political cartoons created in response to the same events, Kaboom also provides more meaningful commentary. Kabul Kaboom illustrates how newsgames can function as strong editorial tools and leads the way for future development of newsgames.

THE NEWSGAME

With the above discussion about how some video games can communicate similarly to the most sophisticated political cartoons, we can now suggest guiding design principles that lead to games that function similarly to political cartoons. The criteria listed are not intended to be an exhaustive and necessary list of features, but rather describe an approach to developing sophisticated newsgames that persuasively communicate editorial stances.

Newsgames are created in response to a specific current event, released while the story is still relevant in people's minds. Newsgames also are meant to be played and understood in a short period of time. Much like political cartoons, newsgames editorialize and often summarize the news story. Newsgames that don't provide significant editorial comment are akin to the category of Social Comment cartoons rather than Political Cartoons. While political cartoons communicate solely using imagery and language, newsgames additionally use the methods as well as the rhetorical possibilities made available through gameplay.

A strong newsgame encodes the author's editorial stance in the game design as well as in the imagery and sound. This strategy of editorial expression is how newsgames can function similar to and arguably better than political cartoons. A newsgame can point out a problem related to a current event and demonstrate or imply a solution by leading the player to enact the proposed solution and thus demonstrating its success. An author of a newsgame creates a simulation where he or she can greatly control the results of interaction. These manipulations of potential outcomes are often hard to see and can cause the simulation to appear unbiased.

The viewer of a political cartoon knows that what he or she is seeing is biased and not a direct representation of reality, whereas the player of a newsgame may not because of a lack of procedural literacy [18]. As of now, most people are not as practiced in understanding how a system of rules can encode meaning as they are at understanding images.

For example, *SimCity* presents a concrete representation (a set of rules) of how public policy decisions determine the wealth and population of a city. These rules were developed to create fun and engaging gameplay, not to provide an accurate model of urban planning. But, through the agency offered to the player, and the compelling audio/visual presentation of the simulation, the model can be quite persuasive, perhaps leading some players to uncritically believe it is an accurate model of urban development. This hidden nature of procedural meaning may change with the creation and popularization of sophisticated newsgames as people become more procedurally literate and critical.

September 12th [9] is an example of a newsgame that has an easy to understand procedural message, making it an excellent point of entry for understanding procedural rhetoric. In *September* 12^{th} , the player is given the ability to eliminate terrorists who are mingling amongst civilians through a city. The only game action the player has is to shoot missiles (which are very imprecise due to a lag between shooting and the actual launching of the missile). When a civilian is accidentally killed, other civilians approach him or her, mourn and then turn into terrorists themselves. After playing the game for some time the city is destroyed and filled with a much higher number of terrorists and a much higher terrorist to civilian ratio. This newsgame critiques an event (the bombing of foreign nations) and implies a simple solution (to stop). This message is communicated after only playing the game for a couple minutes, was created in response to events in the world and, most importantly, persuasively communicates its message through the rules of the game world in a way that political cartoons about the same issue were unable to do using only imagery and language.

In Sicart's discussion of newsgames, he describes how they are to be as "ephemeral as the news they illustrate" [27]. A newsgame should make its point, then be discarded. However, despite being one of the most often cited newsgames, September 12th was created long after the incidents of September 11th, and continues to be played and cited, now eight years after the original impetus for the game. We contend that the ephemerality of a newsgame is a matter of content and not a matter of form. For example, So you think you can drive, Mel? carries little significance now that the event has drifted from tabloid headlines. Most celebrity gossip is ephemeral by nature. However, like all good political cartoons that are tacked to cubicle walls, the statement of September 12th has lasting significance that will maintain its meaning as long as the issue (its content) is still relevant to people's lives.

In summary, below is a list of criteria that describe an ideal newsgame as follows from the comparison of newsgames to political cartoons:



Figure 4: Bacteria
Salad makes a
sophisticated
procedural
argument against
large scale
agribusiness.

- Created in response to a current event
- Released close enough to the event that it remains relevant
- Able to be understood in a couple minutes
- It tries to influence the player to a particular viewpoint (persuasive)
- Points out a problem
- Often implies a solution
- Rhetorically communicates through visuals, sound and gameplay (procedural rhetoric)

Games that drastically stray from the above can likely be better described by different nonfiction game categories (e.g. docugames, edugames, tabloid games, reporting games, advergames, simulgames, social comment games, etc.).

EDITORIALS AND NEWSGAMES

So far we have only looked at games whose message is able to be understood in a short period of time. As the mechanics of a newsgame become more complex, and the procedural rhetoric more sophisticated, the original parallel between newsgames and political cartoons begins to break down. Such games are better understood through a parallel to newspaper opinion pages than through a parallel to political cartoons.

Bacteria Salad is a game created in response to and released during the spinach related E. Coli outbreaks in 2006 (figure 4) [21]. The game challenges the player with a task of running a large agribusiness. The goal is to sell as many vegetables as possible without getting the consumers sick in the process. Through building and destroying farms,

harvesting crops, and issuing bans on contaminated vegetables, the player has control over the distribution of the industry's vegetables.

This game differs from September 12th in how it asserts a much more detailed solution to its issue (agricultural contamination) than September 12th does for its issue (foreign policy regarding terrorism). This requires a much longer play session to interpret through playing. It takes upwards of ten minutes to fully understand how to achieve success in Bacteria Salad while the editorial stance of September 12th is evident almost immediately.

One can find similar differences between political cartoons and written editorials in newspapers. Editorials use informal and intentionally biased language to persuade a reader to the writer's opinion. It takes several minutes to read and comprehend the message of an editorial. They share many characteristics with political cartoons in how they present a problem and imply or describe a solution. Among several editorials about spinach contamination, explanations and solutions varied drastically. One editorial in the New York Times argued that spinach contamination came from the low quality grain being fed to cows, filling their stool with dangerous bacteria which eventually contaminated the water supply [23]. Another explained the nuances of how government intervention and agricultural regulation is to blame [28]. Bacteria Salad argues that as agricultural production becomes more industrial, the relationship between where food is consumed and where it is produced becomes very complex. This makes contamination hard to contain because distributors lose knowledge of where their product is shipped to; the only way to deal with contamination is through massive bans. The game communicates this by making the successful strategy be to actively manage small farms.

The game's exaggerated imagery and comical audio function similarly to the informal language and clear rhetorical stance of editorials, though the act of playing the game is not as overtly comical or as quick to bring a smile of recognition as political cartoons would. Because of this, it can be said that *Bacteria Salad* functions as the "video game equivalent of the written editorial" as opposed to "the video game equivalent of the political cartoon." While still clearly being a newsgame, *Bacteria Salad* demonstrates how games can not only provide an outlet for bursts of persuasive expression, but also describe nuanced arguments to at least the level of detail provided by newspaper editorials.

ISSUES WITH PROCEDURAL RHETORIC

As described above, game rules and goals can communicate messages to the player through gameplay. A newsgame designer must be aware of what and how their game employs procedural rhetoric to communicate. *Bacteria Salad* was intentionally created to simulate how small scale agricultural production avoids the food safety problems of large agribusiness. Authoring sets of game rules and goals

that persuade the player to share the author's editorial stance is an important part of our discussion of newsgames.

Kabul Kaboom employs a procedural rhetoric of failure. The act of dodging bombs creates a frantic and stressful mood that consistently ends in a lose state [5] [14]. The game critiques US foreign policy by forcing the player to repeatedly enact failure. The failure that the player feels while playing the game helps to persuade the player to agree that simultaneously dropping bombs and food is bad foreign policy. Kabul Kaboom is a clear example of how a newsgame communicates through the notion of procedural rhetoric.

Because designers rarely create games with procedural rhetoric in mind, there is a limited understanding of how to do it effectively. Meaning can be lost depending on how the processes are interpreted. Madrid is a game created after the 2004 Madrid train bombings (figure 5) [8]. Rather than simulating the event, Madrid tasks the player to click on candles in order to light them at a memorial gathering to honor victims of violence around the world. The candles begin lit and start to fade with time. The goal is to have the brightness meter at the bottom left to fill to a point at which point the game is won. The game is clearly trying to simulate the act of memorial with the candles representing the memory of the victims. The game reminds us that in order to honor the victims it takes effort to stop their memory from fading. When read at this level of abstraction, the game uses a rhetoric of memorial to honor the victims of terrorism.

The message of *Madrid* becomes confused when a more literal reading is performed. Because the candles must be lit (clicked on) very quickly in order to raise the brightness meter, *Madrid* induces a frantic and busy state in the player. It takes much effort and grueling commitment to achieve the win state of the game. Because of this, *Madrid* has been



Figure 5: *Madrid* demonstrates how procedural rhetoric can send conflicting messages.

described as using a rhetoric of "diligence and precision" [5]. Because grueling diligence and precision have little to nothing to do with memorial, the game's message ends up being obscured and inconsistent. The player's emotional response to the game rules of a newsgame should have some connection to the game's message. *Madrid* fails to do this because the primary emotional response from the player is frustration as the game primarily tests hand/eye coordination.

A different *Madrid* can be imagined that uses the same game mechanics, but takes away the inconsistencies described above. Envision a game where every time your computer is started a window appears with the same game screen as *Madrid*. The difference would be that the player would only have to click once on each of the candles once a day. This would remind the player to honor the victims daily and over a long period of time. A win state could be achieved by performing this action once every day for a month. This alternative clearly strays from the quick consumption criteria defined above, but is more consistent with the intended theme of the game. It would be also be much less exciting, but what does excitement have to do with memorial anyway?

In addition to the possibility that procedural rhetoric may elicit player emotions that are inconsistent with a game's theme, emergent effects of the procedural rule system can and often do undermine its intended meaning. In Bacteria Salad, there is at least one strange strategy that sometimes leads to a success that was clearly not intended. Because there is no cost or penalty for destroying industrialized farms, it is possible to always produce food using the heavy industrial farms to fill the shelves but clear the fields once the shelves are full (to avoid contamination). If the player detects that a contamination may have happened, he or she should issue bans and consider it a loss, but many times contamination does not occur and the player gets the benefit of rapid development and big pay outs. When taken literally, this strategy would lead one to believe that the game is advocating the rapid creation and destruction of All simulations involve making industrialized farms. decisions about what aspects of the real world to incorporate into the simulation (and in what simplified form) and which to leave out. In this case, leaving out of the simulation the costs of building and destroying industrial farms leads to an unexpected, and presumably undesired, emergent gameplay opportunity, and thus emergent message. Appropriately simplifying and constraining the underlying procedural model such that it avoids actualizing unintended rhetorics is the hard design problem of procedural rhetoric.

CONCLUSION

Newsgames serve as one of the most direct examples of how procedural rhetoric is put into practice. With this understanding of how newsgames function and differ from other types of games, a game designer can intentionally set out to create a game (with a deeper and more persuasive power) that can better represent an editorial stance than political cartoons and newspaper editorials.

The websites for *CNN* and the *New York Times* have somewhat recently shown interest in the genre and commissioned several newsgames for their online editorial pages. Unfortunately, both organizations have since abandoned newsgames.

Have newsgames lost their chance at becoming a prominent form of political expression? Fewer and fewer newsgames of any kind are appearing, and even less that can be compared to the sophistication of political cartoons on the same subject. Hopefully, by fleshing out Frasca's original comparison between newsgames and political cartoons, we have provided direction for future expansion of the genre that is informed by, and is potentially even more persuasive than, the political cartoon.

A future direction of this work would be to apply this understanding of how games communicate in order to add editorial stance to the possibilities of automated game generators [19]. This tool would solve the inherent problem that newsgames take substantial time to create and need to be released while the story is still relevant to its audience. With a tool like this, a simple newsgame could be released for any current event. Before this can be done, game mechanics and their potential rhetorical meaning need to be explored and formalized.

While the number of 'good' newsgames are quite small, they are some of the best examples of how video games can be used for means beyond entertainment and serve as a legitimate medium for social commentary, art making and other editorial pursuits.

REFERENCES

- 1. Addicting Games. http://www.addictinggames.com
- 2. Addicting Games. "Dress up Hilary".
- 3. Armegalo. Cheney's Fury. Addicting Games. 2007.
- Bogost, I. "Playing Politics: Videogames for Politics, Activism, and Advocacy". In First Monday 11, no. 9., Special Issue #7: Command Lines: The Emergence of Governance in Global Cyberspace
- 5. Bogost, I. Persuasive Games: The Expressive Power of Videogames. The MIT Press, 2007.
- 6. Edwards, J. Political cartoons in the 1988 presidential campaign: image, metaphor, and narrative. Routledge. 1997.
- 7. Ferrari, S. *Newsgame*, or *Editorial Game?* News Games [blog].
 - http://jag.lcc.gatech.edu/blog/2009/06/newsgame-oreditorial-game.html
- 8. Frasca, G. "Madrid". 2004.
- 9. Frasca, G. "September 12th". 2003.

- 10.Frasca, G. "Kabul Kaboom" 2001.
- 11.Frasca, G. Simulation 101: Simulation versus Representation. 2001. http://www.ludology.org/articles/sim1/simulation101.ht ml.
- 12.Game Show Network. "So you think you can drive, Mel?". 2006.
- 13.Juul, J. Half-Real: Video Games between Real Rules and Fictional Worlds. Cambridge, MA: MIT Press 2005.
- 14.Lee, S. "I Lose, Therefore I Think" in Game Studies, no. 3.
- 15.Lester, M. "The Mel Gibson Flap in a Nutshell". Rome News-Tribune. Rome, GA.
- 16.Lewis, P. "Mad Mel" cartoon. peterlewis@iinet.net.au
- 17.Mateas, M. "A Preliminary Poetics for Interactive Drama and Games". In First Person: New Media as Story, Performance, and Game. The MIT Press, 2006.
- 18.Michael, M. "Procedural Literacy: Educating the New Media Practitioner" in On The Horizon. Special Issue. Future of Games, Simulations and Interactive Media in Learning Contexts, Volume 13, Number 1, 2005.
- 19.Nelson, M.J. and Mateas, M (2007). Towards automated game design. In AI*IA 2007: Artificial Intelligence and

- Human-Oriented Computing, pp. 626–637. Springer Lecture Notes in Computer Science 4733.
- 20.Nelson, M.J. and Mateas, M (2007). Towards automated game design. In AI*IA 2007: Artificial Intelligence and Human-Oriented Computing, pp. 626–637. Springer Lecture Notes in Computer Science 4733.
- 21. Persuasive Games. "Bacteria Salad". 2006.
- 22.Pismestrovic, P. "Food and Bombs". petar.pismestrovic@chello.at
- 23.Plank, N. "Leafy Green Sewage". in New York Times opinion page. 2006.
- 24.Press, C. The Political Cartoon. Rutherford: Fairleigh Dickinson University Presses. London: Associated University Press. 1981.
- 25.Receiver Magazine. "This just in. Playing the news." http://www.vodafone.com/flash/receiver/17/articles/pdf/ 17_07.pdf
- 26. Sexton, B. "OJ Master Thief". Addicting Games. 2007.
- 27.Sicart, M. "Newsgames: Theory and Design". International Conference on Entertainment Computing. Pittsburgh, PA. 2008.
- 28.USA Today. "How to Save Spinach". 2006.