A Systems Approach to Play for Game Design

Dansey, Neil; Eglin, Roger
Advanced Games Research Group

School of Creative Technologies, University of Portsmouth, Eldon West Wing, Winston Churchill Avenue, Portsmouth, Hampshire, PO1 2DJ.

This page will be kept separate for blind refereed articles.

Please place an x in the appropriate space:

This paper should be considered as an academic paper [ ]

Academic papers (approx.7,000 words) must comply with the formatting guidelines set out below. These will be blind, peer reviewed.

This paper should be considered as a practitioner paper [x]

Practitioner papers (up to 2,000 words) may take the form of case notes or case studies. Relevant diagrams and/or practical examples should accompany case studies. Papers with client endorsement or participation are especially welcome. Practitioner papers will be refereed, with an emphasis is on communication of the practice of systems ideas.
Please submit an abstract, using the formatting guidelines below, accompanied by either a similarly formatted short paper or a set of PowerPoint slides for presentation.

This abstract is for a poster. [ ]

Poster suggestions will be reviewed by the Programme Committee for relevance to the conference themes. Once abstracts are accepted, posters should be brought in person to the conference where facilities for display will be made available.

This paper is a student paper, which has been single authored by the student [ ]

Requirements are for student papers are similar to those for full academic submissions.

This is a proposal for a workshop [ ]

Please give as much detail as possible about the topic and the proposed format

Please see accompanying guidance notes.

A Systems Approach to Play for Game Design

Abstract

A systems perspective is taken to describe a game in which play involves generating game designs. Players are encouraged to consider assumptions, biases and oversights in their thinking, and as play continues better game ideas are expected to emerge. Generated ideas are copyright free, enabling them to be used elsewhere. Players decide which ideas are considered 'good' by voting for the ideas they would most like to play. This paper will outline the purpose and rules of the proposed game, illustrating from the point of view of human activity systems, group support systems and on scales of complexity of restrictions and number of interactions.

Key words: Group Support Systems, Emergence, Idea generation, Games, Game design.

Outline of Game

It is believed that both interpersonal and intrapersonal ideas can help promote a productive learning cycle (Bednar, Eglin and Welch, 2007). The critical appraisal of individual assumptions, by comparing personal experiences with those of a group, may promote a deeper 'double-loop' type of learning. The proposed game is a collaborative idea generation game. Players generate and submit game design ideas individually, before viewing the collective 'idea pool' in order to compare their ideas with others. After this reflection stage the process is repeated, and it is expected that after several iterations a higher standard of game designs will emerge. The questioning of previously held assumptions, and subsequent expansion of thinking, is expected to make the players better at designing games in future. It could be argued that the proposed game has characteristics in common with group support systems (GSS). Differences between the two will therefore be discussed.

The instructions of the game are as follows. Play happens over a number of sessions, each of which involves a period of idea generation and a short review and rest period. During each idea generation period players are required to submit as many game ideas as possible, scoring a point for each idea submitted. Ideas must consist of between 3 and 5 rules, and do not have to be good, serious or feasible, as long as they are theoretically possible. Players can submit as many or as few ideas as they wish, but are encouraged to submit at least one idea per idea generation period. Rules should not involve action which could be deemed illegal, immoral, or harmful to others. Ideas can be submitted in any format (i.e. written list, drawing, sound file) supported by the organisers. To avoid copyright issues, ideas are not allowed to copy existing games, but can be inspired by existing games or ideas which are already in the pool. For the benefit of game design, ideas which are submitted are done so as 'public domain' – that is, they are freely available to the public. Players have the option to withdraw from play at any time if they do not agree with the instructions or do not want to play.

Once the idea generation period is complete, the ideas are collected up and presented to the players. The players then have some time to rest and browse the pool of ideas. After this time, a new idea

generation period begins, and so on. After a predetermined number of iterations, players vote for the game ideas they would actually play. Two winners are declared: the person(s) who submitted the most ideas and the person(s) whose idea received the most 'good game' votes.

Play happens both at a lower level – as the players engage with the rules and produce game ideas – and at a higher level – as players view the results of other players and have the opportunity to question previously held assumptions about what is possible.

Systems Perspective

In terms of systems, the game could be represented as in figure 1:

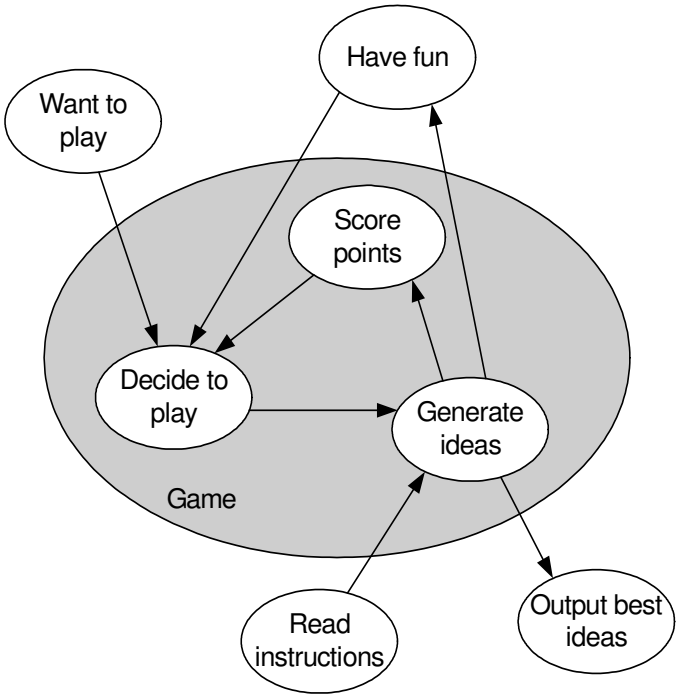

Figure 1: Conceptual model of the game as a human activity system.

Ackoff (1962, cited in Wilson, 1991, p.11) described iconic, analogic and analytic forms of modelling systems. Wilson (1991, p.12) states that these forms mainly cover physical and formulaic systems, and argues for a further category of model to be included, which could be used to describe a more qualitative type of system. This *conceptual model* is the one which will be used to describe our idea generation process, as concepts such as 'fun' and 'good ideas' could be difficult to quantify. Using the summary of Checkland's system classification (cited in Wilson, 1991, p.25) it would appear that our system is a human activity system – a group of humans undertaking a purposeful activity – rather than a social or cultural system which implies focus on relationships between humans. It is for this reason that the system is defined in terms of verbs (Ibid., p.27).

Players enter the game by deciding to play, and in conjunction with reading the instructions they generate ideas. The idea generation process scores a point for the player and perhaps provides some fun too. However, fun can also be had without participating in idea generation: observation of the idea

generation process could be fun, as players compare ideas and laugh at the more obscure efforts provided. This meta-level play could result in players competing to design with self-imposed motives – to produce the most annoying or humorous game, for example. A formal test run will be undertaken in due course, potentially with the cooperation of some UK universities which run games design courses.

Achieving the internal goal of point-scoring and the external goal of having fun feeds back into the decision to continue playing, and so a feedback loop is established. A by-product of this loop, as mentioned earlier, is the emergence of particularly good ideas which have been voted for by the players. The ideas are also copyright free and publicly available, therefore allowing them to be used elsewhere.

Emergence

The generation of good game ideas is influenced by emergence. From the appearance of slums in *Sim City*, to bluffing in poker, to the evolution of 'combos' in fighting games, emergence can often be observed. According to Salen and Zimmerman (2004, p.165), emergent systems in games can provide variety, novelty and surprise. "A successfully emergent game system will continue to offer new experiences, as players explore the permutations of the system's behaviour". Johnson (2001, p.94) states that emergence relies on "the right kind and right number" of interactions. For this purpose it is better to build a densely interconnected system with simple elements than a sparse system with complex elements. Rose (2008) states that "game designs are usually most notable for what they *don't* include".

The proposed game takes the above advice, minimising the number of rules and maximising the opportunity for interaction. Here, 'interaction' takes two forms: First, the mental interaction between the player's mind and the allowed game space provides most of the opportunity. It could be said that emergence through mental interaction is synonymous with creativity. The game space is deliberately unobstructed by rules to allow for as many different game states (i.e. designs) as possible. However, there need to be a few restrictive rules in place, mainly to comply with ethical research procedures but also to prevent the game from breaking down completely. Second, there is the social interaction between players and the game as they submit ideas, compare them with those of other players and comment on assumptions, oversights and biases. Simply allowing repeated iterations of this cycle increases the number of potential interactions. It is also intended that rather than spending a considerable amount of time on each idea, players should submit frequent, brainstorming-style ideas, in order to keep the number of interactions up.

The number of both mental and social interactions can be further increased by running the game over a longer period of time, or by placing the idea pool in a widely accessible location such as the internet. This would allow more ideas, more iterations and hopefully a greater amount of emergence. Figure 2 shows how the proposed game stands on the spectra of complexity of restrictions and number of interactions.

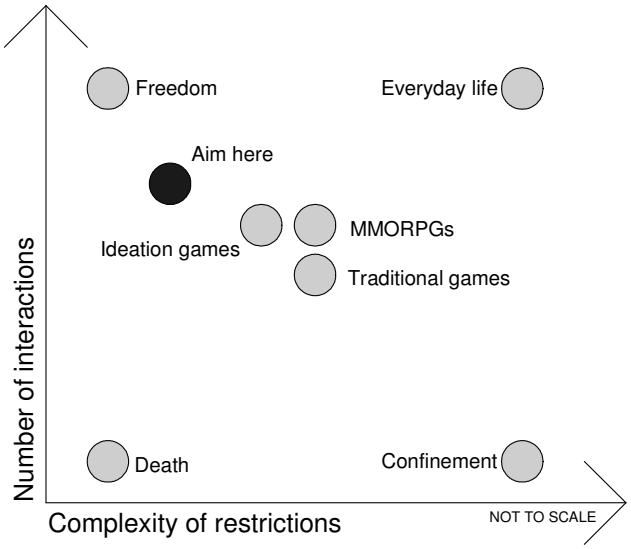

Figure 2: Position of the game on the spectra of interaction abundance and restriction complexity.

Everyday life contains a large amount of potential interactions, but there are also many complex restrictions which govern the way people behave and interact with things. Living in confinement is similar in terms of what is theoretically possible, but the number of opportunities for interaction is greatly reduced. At the opposite end of the scale, being dead involves no complexity of restrictions and no amount of interactions. Freedom, in this case, implies omnipresence and omnipotence: perhaps the idea of 'godlike' behaviour.

Traditional games (e.g. most board, dice, card and computer games), although they might seem to contain many rules, have a less complex restrictive nature than the social etiquette and laws of everyday life. They allow more godlike behaviour, in the form of fantasy or play. The number of interactions in traditional games is also more restricted: one is only allowed to interact with certain players and the game environment in a limited number of ways.

Massively multiplayer online role-playing games (MMORPGs) feature a similar complexity of restrictions to traditional games, but allow for a larger number of interactions by adding more players and a larger game world. Because of this, phenomena such as player-created law systems emerge (Mnookin, 1996).

Ideation games, such as those described by Kultima et al (2008), are designed to facilitate ideas. These games also have a larger number of interactions than traditional games, but unlike in MMORPGs this comes from the greater freedom allowed by the rules, and therefore an increased number of valid game interactions. Games in which gameplay involves changing the game, such as *Nomic* (Suber, 1990), and contests in which the best game idea wins, such as the *Nordic Game Jam 2008* (Højsted, 2008) could also be seen as related to ideation games.

The game proposed in this paper allows an even greater level of freedom: the players do not have to actually make or play the games (unlike the *Nordic Game Jam*), rule creation does not entail a lengthy democratic process (unlike *Nomic*) and the flow of ideas is not as obstructed by turn-taking and other gameplay mechanisms as the games described by Kultima et al. The open-endedness of the

rules broadens the definition of a valid game interaction further than in ideation games, so there are even more potential interactions between the player and the game system. However, while the aim is to provide many interactions with as low restriction as possible, there will need to be a few restrictive rules in place, because complete freedom implies the ability to engage in illegal or harmful activity. Therefore basic rules restricting certain actions will add a small amount of complexity and slightly reduce the amount of permitted interactions.

Similarities to GSS

Group support systems (GSS) are believed to have potential for effectiveness and learning in face-to-face settings (Walsh et al, 1995). Although the proposed idea could be seen as similar to GSS in that there is a collective "group memory" of ideas (Satzinger et al, 1999) to which participants contribute simultaneously and anonymously using the existing ideas in the knowledge base for inspiration, there are areas in which our proposal is different. Stepanek (1999, cited in Garfield et al, 2001) describes the use of GSS by "large companies" to produce novel, paradigm-breaking ideas. In research, the suitability of an idea is often evaluated externally, based on reductive factors such as levels of creativity and paradigm-modification (Satzinger et al, 1999; Garfield et al, 2001; Nagasundaram & Bostrom, 1995). However, in a practical setting one would not be able to easily control the amount of "intuitor-feeler" personality types in the group, and therefore the amount of paradigm-modifying ideas generated would vary accordingly (Garfield et al, 2001), potentially rendering the method unreliable. Furthermore, it is of our opinion that a game design is more than the sum of its parts, and therefore it should be evaluated using criteria of a more holistic nature, such as "would I actually play it?", or "is it fun?". We are not as interested in whether or not the ideas break paradigms, as long as they are 'good'. Because game participation is voluntary (Huizinga, 1970, p.26) the participants of the game proposed in this paper should be people who are interested in designing and playing games. To design games, one needs a knowledge of and an interest in games (Colayco, n.d.), so it would seem that internal evaluation based on group consensus could be valuable for learning.

Conclusions:

Because of the emergent potential of the game system it is difficult to determine at present whether it will function best as a vehicle for generating good ideas or as a learning tool for expanding thinking. This could be seen as an advantage, because it necessitates a reduced pressure on the generation of good ideas in favour of a more general approach to output. Combined with a tactile pen-and-paper environment and inclusion of game elements such as point scoring, this will hopefully create a more enjoyable, productive session and therefore a more suitable environment for emergence and learning.

Acknowledgements

Many thanks to Dan Pinchbeck for his valuable feedback.

References

Bednar, P., Eglin, R. & Welch, C. (2007). Contextual Inquiry: A Systemic Support for Student Engagement through Reflection. *Interdisciplinary Journal of Knowledge and Learning Objects, 3*, 45-55.

Colayco, B. (n.d.). *So You Wanna Be a Game Designer?* Retrieved June 16, 2008, from http://uk.gamespot.com/features/6129276/p-1.html

Garfield, M., Taylor, N., Dennis, A., & Satzinger, J. (2001). Research Report: Modifying Paradigms – Individual Differences, Creativity Techniques, and Exposure to Ideas in Group Idea Generation. *Information Systems Research, 12*(3), 322-333.

Højsted, A. (2008). *Nordic Game Jam 2008: 134 Game Developers, 40.5 Hours and 19 Game Demos*. Retrieved June 7, 2008, from http://www.gamasutra.com/view/feature/3572/nordic_game_jam_2008_134_game_.php?page=1

Huizinga, J. (1970). *Homo Ludens: A study of the play element in culture*. London: Temple Smith.

Johnson, S. (2001). *Emergence: The Connected Lives of Ants, Brains, Cities and Software.* London: Penguin Books.

Kultima, A., Niemelä, J., Paavilainen, J., & Saarenpää, H. (2008, April). *Bluetooth Planets & Shave my Baby! Breaking the Magic Circle with Idea Generation Games*. Paper presented at the *Breaking the Magic Circle* seminar, University of Tampere, Finland.

Mnookin, J. (1996). Virtual(ly) Law: The Emergence of Law in LambdaMOO. *Journal of Computer-Mediated Communication, 2*(1) [electronic version]. Retrieved June 16, 2008, from http://jcmc.indiana.edu/vol2/issue1/lambda.html#Law%20and%20Politics

Nagasundaram, M., & Bostrom, R. (1995). The Structuring of Creative Processes using GSS: A Framework for Research. *Journal of Management Information Systems, 11*(3), 87-114.

Rose, J. (2008). *Fewer Mechanics, Better Game*. Retrieved June 7, 2008, from http://www.gamasutra.com/view/feature/3621/fewer_mechanics_better_game.php?page=1

Salen, K. & Zimmerman, E. (2004). *Rules of Play: Game Design Fundamentals*. Massachusetts, USA: The MIT Press.

Satzinger, J., Garfield, M., & Nagasundaram, M. (1999). The Creative Process: The Effects of Group Memory on Individual Idea Generation. *Journal of Management Information Systems, 15*(4), 143-160.

Suber, P. (1990). *The Paradox of Self-Amendment: A study of Law, Logic, Omnipotence and Change.* Retrieved May 29, 2008, from http://www.earlham.edu/~peters/writing/psa/index.htm

Walsh, K., Briggs, O., Ayoub, J., & Vanderboom, C. (1995). Teaching with GSS: Techniques for Enabling Student Participation. In M. Ahuja, D. Galletta, & H. Watson (Eds.), *Proceedings of the First Americas Conference on Information Systems* (pp.621-623). Atlanta, Georgia, USA: Association for Information Systems.

Wilson, B. (1991). *Systems: Concepts, Methodologies and Applications*. Chichester: John Wiley & Sons Ltd.