

# Simulating a Quasi-Simulation:

## A framework for using Multi Agent Simulation Techniques for studying MMORPGs

### ABSTRACT

The use of computer simulation techniques for the study of social phenomena, or Social Simulation, is a relatively new field (Gibert & Troitzch, 2005). By using Multi Agent Simulation (MAS) techniques, among others, social scientists are able to explore “what if” scenarios of emergent behaviors in complex social systems.

However, the Social Simulation method faces many challenges : a) *human subjectivity*; there is no computer, mathematical model nor software powerful and exhaustive enough to replicate subjective aspects like love, free will, etc; b) *pervasive contingency*; even if we can simulate the interaction of a great number of variables and environmental factors, a computational simulation will never attain the level of complexity that actual human social phenomena has and c) *validation*; is it not always easy to extract from the real world the kind of research results needed to validate social simulation models.

In the other hand, Massive Multiplayer Online Role Playing Games (MMORPGs) share many characteristics with MAS models. MMORPGs resemble in many ways the social complexities of the real world, they are also coded through a programming language and they are also based on a hardware/software platform ... but they feature one thing that MAS models don't: real human beings participate on them, instead of mere AI based agents.

Therefore MMORPGs are quasi-simulations that offer unprecedented opportunities for studying complex social phenomena. Since it is humans and not only AI NPCs who play them, the “human subjectivity” problem can be bypassed. Their “sandbox” nature minimizes the “pervasive contingency” problem. Moreover, the wide arrange of data gathering possibilities they offer (see for example Ducheneaut et al, 2004, Williams et al 2008a) empower researchers to obtain appropriate results for computer model validation purposes. In this sense, Gee (2004) and Burke (2005) call for the need of bridging complex systems simulation techniques with MMORPGs studies, and in this paper I intend to further the discussion of the kind framework that is needed for such enterprise.

The importance of this theme for the Game Studies discipline is put into perspective by a relatively recent but

landmark event on MMORPG Research : Sony Online Entertainment (SOE), has allowed a group of researchers to collect and analyze virtual world data on a unprecedented scale from the Everquest II MMORPG ( Terranova Blog, 2008). This event triggered the discussion of a necessary conceptual framework for the understanding of the extent a virtual world can simulate the real world. In other words, it is necessary to create a conceptual intervention in order to be able to use data from virtual worlds as a means for understanding the real world.

Williams (2008b) posited the “mapping principle” as an initial approach to tackle this issue. On this paper I discuss the implications of the “mapping principle” and argue that the relationship between real worlds and their virtual counterparts can be traced back to Baudrillard's (1983) seminal conceptions of “hiperreality”. I further elaborate William's postulates and widen their focus in order to include the “hiperreal” category; proposing an alternative framework for understanding the relationship between the virtual and the real on MMORPGS.

As an illustration on how to use this framework, I present a practical example of the usage of a MAS technique for understanding an MMORPG and the “real” social phenomena that happen within them. The example consists on creating a multi agent model of social identity (re)production in the World of Warcraft (WoW) MMORPG, based on Salazar's (2006) theoretical model on social identity. The computational model reproduces many of WoW's environment, social processes and migration patterns and it intends to show how can meaningful insights of WoW's social landscape be extracted.

To conclude, the paper gives several pointers on how to use the presented framework as well as the key issues that still need to be addressed and discussed in order to bridge Social Simulation methodologies, MMORPG Studies and virtual world data analysis.

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

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## REFERENCES

1. Burke, Timothy (2005) Matchmaker Matchmaker, Make Me a Match: Artificial Societies vs. Virtual Worlds. Paper presented at the Digital Games Research Association (DIGRA) Conference. Vancouver, Canada, July 2005.
2. Ducheneaut, N., Moore, R. & Nickell, E. (2004). Designing Sociability in Massively Multiplayer Games: an examination of the "Third Places" of SWG. Paper presented at the Other Players conference. Copenhagen Denmark. 6-8 December 2004.
3. Gee, James P. (2004). Video Games: Embodied Empathy for Complex Systems. Available at: <http://labweb.education.wisc.edu/room130/index.htm>
4. Gilbert, N., & Troitzsch, K. (2005). Simulation for the social scientist (Second ed.). Milton Keynes: Open University Press.
5. Salazar, Javier (2006). Social Identity (Re)Production in MMORPGs: A Case Study of Star Wars Galaxy. Thesis for the title of Magister Scientiarum in Human Informatics. Tohoku Gakuin University. Japan.
6. Terranova Blogs (2008) Who Plays, How Much and Why? Answers. Posted by Dimitri Williams. Available at: [http://terranova.blogs.com/terra\\_nova/2008/09/who-plays-how-m.html](http://terranova.blogs.com/terra_nova/2008/09/who-plays-how-m.html)
7. Williams, D., Yee, N. & Caplan, S. (2008a). Who plays, how much, and why? Debunking the stereotypical gamer profile. Journal of Computer-Mediated Communication. Volume 13, Issue 4, Pages 993-1018. Available at: <http://www3.interscience.wiley.com/cgi-bin/fulltext/121394419/HTMLSTART?CRETRY=1&SRETRY=0>
8. Williams, Dimitri. (2008b) The mapping principle, and a research framework for virtual worlds [White Paper] . Available at: [dmitriwilliams.com/MappingTNWhitePaper.pdf](http://dmitriwilliams.com/MappingTNWhitePaper.pdf)