

Developing an MMOG as a Data Source and Platform for Social Experimentation and Simulation

First Author Name (Blank for Review)

Affiliation (Blank for Review)

Address (Blank for Review)

e-mail address (Blank for Review)

Optional phone number (Blank for Review)

Second Author Name (Blank for Review)

Affiliation (Blank for Review)

Address (Blank for Review)

e-mail address (Blank for Review)

Optional phone number (Blank for Review)

ABSTRACT

The rise of Massively Multiplayer Online Games (MMOGs) and virtual worlds has made it possible to record and examine group and individual interactions in discrete, quantifiable ways. [4] Researchers have studied the ethnographic makeup of these game communities, the social interactions between players, and the analogs between these and extra-game social behaviors. [3, 6] This work has garnered information about player habits from a variety of sources: in-game observation, interviews, surveys, in-game experiments, data from game publishers, and scripts that scrape data from the game worlds. [4,6,8] In this paper, we discuss an alternate and flexible approach to this issue, reviewing the impetus for, design, and applications of an MMOG being developed as a platform for studying these interactions, as well as its current status and some initial examination of the player community.

While much of the data currently being harvested from MMOGs, and the corresponding analyses have provided valuable social and behavioral perspectives on their player communities, the scope of this prior research is confined by lack of control over these game environments. Because researchers are rarely the operators of these environments, they often do not have the direct control over gameplay elements that is necessary for well-defined experimentation within the online space. Communities can be examined as they are, but not tested in a mix of different circumstances. To provide a long-term solution to this problem for virtual world, cognitive modeling, and social simulation researchers, we are developing and planning to maintain a new MMOG that will facilitate experimental interactions between socio-cognitive agents and human players, and that will serve as a source for data on the game world and its inhabitants' behaviors.

The design goal for this MMOG is to provide a variety of scenarios for social interaction and play, capturing a wide variety of player types, while also tying all players together to form a unified community. By doing so, we will meet two of the research community's needs: providing a game environment that can be customized as a platform for different social experiments incorporating humans and

cognitive agents, and cultivating a player base in which changes over time can be monitored. As such, we have opted to design our MMOG with a two-level structure: an outer MMORPG containing discrete subgames. These subgames can be housed in any building or area in the world and of any genre; while success in the subgames will correspondingly lead to a player or guild's success in the other game and providing them with additional authority.

We intend to conduct exploratory data analysis of the features of the MMOG player community, and to introduce new subgames and in-game events that will change elements of the outer game as components of specific experiments on player activities. We specifically intend to use data from the game as inputs for the CONSTRUCT socio-cognitive modeling system to determine how well it can predict in-game social interactions. [2, 5] We also plan to develop a bot API for experiments with the SOAR and ACT-R cognitive modeling systems, experimenting with how humans and cognitive agents function differently in virtual spaces. [1,7] Lastly, because we wish to examine games as both an analog to reality and as an important interaction space in and of themselves, we plan on conducting multiple analyses of in-game player statistics such as guild membership, abilities, battles, tasks, and interaction frequencies, city construction, guild growth, and subgame rankings.

We believe that this new MMOG and the results of our initial examination of the player community will be of interest to researchers in the cognitive modeling, social science, and game research communities. We hope to establish the game as a platform that can be manipulated in order to explore any social interaction that needs investigation; this includes both broad social effects as well as features tied specifically to games. Correspondingly, the game research community will benefit from access to the data generated by the outer MMORPG, but also from access to the data generated in a wide variety of internal subgames. For social scientists, our MMOG will provide a valuable tool for conducting experimental tests of cognitive modeling systems and for examining the development of a virtual community and its various subgroups.

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MMOG development, social experiment, community exploration, research platform

REFERENCES

1. Best, B. J. & Lebiere, C. "Teamwork, Communication, and Planning in ACT-R Agents Engaging in Urban Combat in Virtual Environments" in *IJCAI Workshop on Cognitive Modeling of Agents and Multi-Agent Interactions*, **2003**
2. Carley, K. M. "A Theory of Group Stability" in *American Sociological Review*, **1991**, 56, 331-354
3. Castronova, E. "A Test of the Law of Demand in a Virtual World: Exploring the Petri Dish Approach to Social Science" *Indiana University*, **2008**
4. Ducheneaut, N., Yee, N., Nickell, E., and Moore, R. J. "'Alone together?': exploring the social dynamics of massively multiplayer online games" in *CHI '06: Proceedings of the SIGCHI conference on Human Factors in computing systems, ACM*, **2006**, 407-416
5. Schreiber, C.; Singh, S. & Carley, K. M. "CONSTRUCT: a multi-agent network model for the co-evolution of agents and socio-cultural environments" *Carnegie Mellon University*, **2004**
6. Williams, D., Ducheneaut, N., Xiong, L., Zhang, Y., Yee, N. and Nickell, E. "From Tree House to Barracks: The Social Life of Guilds in World of Warcraft" in *Games and Culture*, **2006**, 1, 338-361
7. Ye, M. & Carley, K. M. "Radar-Soar: Towards an Artificial Organization Composed of Intelligent Agents" in *Journal of Mathematical Sociology*, **1995**, 20, 219-246
8. Yee, N. "The Demographics, Motivations, and Derived Experiences of Users of Massively Multi-User Online Graphical Environments" in *Presence*, **2006**, 15, 309-329

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