

**Rubicite Breastplate Priced to Move, Cheap:
How Virtual Economies Become Real Simulations**

**Timothy Burke
Department of History
Swarthmore College
June 2002**

Almost everyone was unhappy, the d00dz and the carebears, the role-players and dedicated powergamers, and almost everyone was expressing their anger on websites and bulletin boards. It was patch day in the computer game Asheron's Call, an eagerly anticipated monthly event, when new content, new events, new tools and tricks, were introduced by the game's designers.

A big nerf had come down from on high. There had been no warning.

Nerfing was a way of life over at the other big multiplayer games, but supposedly not in Asheron's Call. This time, the fabled Greater Shadow armor, the ultimate in personal protection, was now far less desirable than it had been the day before the patch. The rare crystal shards used to forge the armor, which had become an unofficial currency, were greatly reduced in value, while anyone who already possessed the earlier, more powerful version of the armor found themselves far wealthier than they had been the day before.

Asheron's Call was one of three major commercial "persistent world" massively multiplayer computer games available in the spring of 2001, the others being Everquest and Ultima Online. (Since that time, a number of other games in this genre have appeared, with more on the way.) In these games, tens of thousands of players within a shared virtual environment control alternate personas, characters who retain their abilities

Burke, Rubicite Breastplate

and possessions from session to session and who can acquire additional skills or objects over time. “Nerfs”, sudden changes in the rules of such games by the designers that degrade the powers and capabilities of these characters, generally draw heavy fire.

All three of these games are set in quasi-medieval fantasy settings full of magic and mythical creatures. Someone unfamiliar with multiplayer computer games might expect that the first concern of players in such a setting would be epic quests, battles between the chivalrous and the villainous, confrontations with sorcerers or monsters, and so on. For the most part, however, the very active virtual communities which form around each of these games have been preoccupied with questions about the economies of their gameworld, economies defined by the acquisition and circulation of virtual commodities and virtual services, the production and control of virtual forms of value.

This preoccupation is not surprising to the designers of such games, nor to anyone with experience with MUDs and MOOs, the various earlier, non-commercial relatives of the current generation of massively multiplayer games (MMPGs). Most of these designers fully expected the economies to be a singular defining feature of their virtual worlds, the attribute which most distinguishes them from computer games which simply happen to be played online. A gameworld that is persistent is an environment where accumulations of value and power are not only possible, but absolutely central to the interaction between players and between players and the environment—and thus central to the willingness of players to pay the monthly subscription fee that makes these games viable commercial enterprises. At the same time, most of the administrators of the current crop of MMPGs as well as designers working on a second generation of games slated to come out in the next two to three years generally acknowledge that the design and

management of such economies is the hardest technical challenge they face, and the single feature that none of the current games (or their various ancestors) have managed to get quite right.

The functioning—or failure—of the virtual economies of MMPGs testifies to much more than the games themselves. Their evolution teaches about the economic assumptions and practices that structure participation in any online environment, but also about how online communication transforms such everyday practice in distinctive ways. Moreover, this very particular species of “virtual community”—a general form of online communication most comprehensively described by Howard Rheingold (Rheingold 2000)—is also a form of *social* simulation. MMPGs have a certain value as an uncontrolled experiment, quite aside from their artistic and cultural significance.

Additionally, in each of these games, the virtual economy within the game has become increasingly entangled with the real everyday economic lives of the players in unpredictable ways. It is not merely a question of who can afford the monthly fee, the Internet access or the appropriate computer to actually play the game, but with the rise of eBay and other auction websites, who can afford to spend real money to acquire virtual items and virtual power within these games. If prophets of the digital age like Neal Stephenson and Sherry Turkle are correct, the future of online communication may be increasingly invested in environments just like these games, in which many users control graphical “avatars” or other simulated versions of themselves that exist within persistent virtual worlds. The intersection of real economic power with the production of value within these gameworlds—now being studied most notably and creatively by the economist Edward Castronova (Castronova)—may therefore be significant not just as a

Burke, Rubicite Breastplate

problem of game design or a crisis in the management of one kind of virtual community, but an important (and problematic) suggestion of things to come.

SIKs and Lumberjacks: A Comparative Economic Tour of the Big Three

Asheron's Call is the game I know best, and most of my examples are drawn from it. Everquest has the largest subscriber base, but its internal economy is roughly similar to Asheron's Call, though with some differences at the level of fundamental design and management philosophy. Ultima Online is important because it provides numerous points of significant contrast to the other two in its internal economy.

In both Asheron's Call and Everquest, the virtual personas of the players, their characters, accumulate "experience", expressed numerically, as a function of their interaction with the gameworld. For the most part, experience is obtained through battling and defeating various monsters and enemies. The majority of players in both of these worlds choose to battle only computer-controlled enemies, but some also participate in combat between players, generally known as player-killing (PK). As experience accumulates, each character gains access to new skills and abilities, generally along a predetermined evolutionary path that defines a distinctive class or type of character within the game. Skill improvements are permanent. Most of these skills make the character more effective in combat against enemies, and allow the character to defeat progressively more powerful creatures and enter regions of the gameworld that were previously too dangerous to traverse.

Ultima Online works somewhat differently. Players have two major kinds of skills they can develop, combat skills and trade skills. With both kinds of skill, the character's

performance of the ability improves through repeated use of it, but the character is limited in the number of skills he can improve and the relative degree to which he can improve them. He could choose to generalize and be reasonably good in a large number of skills, or to specialize and perfect only a few. If skills go unused over time, they degrade, and players can deliberately choose to degrade one skill in order to improve another.

Trade skills, like smithing, lumberjacking, baking, and mining, can be improved without ever entering into combat with computer-controlled enemies or other players. Ultima Online's players rely to a significant degree on goods manufactured by other players using raw materials from the gameworld. Trade skills are used to harvest and work with these materials. A combat-oriented character who specializes in archery may regularly purchase large numbers of arrows from another character who specializes in lumberjacking and the manufacture of arrows from the resulting wood. The raw materials necessary for these tasks are rapidly renewed ("spawned") and for most purposes, available in nearly infinite supply. Near densely populated regions of the game, minerals and wood are more likely to be depleted by constant harvesting as these regions are more secure for characters with few combat skills and more convenient to centers of player activity. Early in the game's history, server overpopulation combined with a slow respawn rate extended this feeling of depletion throughout the gameworld.

There are trade skills in the other two games, but they are relatively insignificant. Other kinds of service that one player's characters will compensate another player's characters for in all three games are more combat-related. In a few cases, one character may actually hire another character to aid him in completing a specific quest or defeating

some particular enemy. More often, one character may compensate a more powerful character for helping him to acquire experience a more rapid rate, which is a crucial part of the practice commonly known as “twinking” or “powerlevelling”. (Twinking also includes giving powerful objects to characters who could not acquire such objects on their own.)

Ultima Online’s designers also attempted at the outset to implement a complementary economic system involving “non-player characters” (NPCs), who are computer-controlled. In the main cities of the gameworld, NPC merchants and vendors will purchase items either made by or acquired by players. In the initial design, their willingness to purchase such items and the price they will pay was responsive to supply and demand. If a NPC smith had too many suits of armor, he would refuse to purchase more, but he would readily buy them if he had none. In reality, the supply-demand dynamic, both initially and currently, is governed by fixed limits and has little connection to the real value of items to players in the gameworld. Merchants that buy and sell arrows, for example, will only purchase a fixed number before refusing to buy any more—but player archers would gladly buy far vaster quantities from these NPC merchants if they were available.

In Asheron’s Call and Everquest, the only meaningful raw material is computer-controlled monsters, and the only real “mining” consists of killing and looting these creatures. Different monsters have different types of items on them, and the more powerful the monster, the more desirable the objects it is likely to be carrying.ⁱ Looting of monsters is also a significant part of Ultima Online, but not as exclusively as in the other two MMPGs. “Lootomatic” items, as they are known in Asheron’s Call, are randomized

Burke, Rubicite Breastplate

in their placement and relative power. In Everquest, it has been much more common for a geographically fixed spawn of a particular creature to always have a chance to yield the same objects time after time. Some of these spawns are so difficult to battle that they necessarily require massive numbers of powerful players and considerable organization to defeat. Also, in Asheron's Call and Ultima Online, players who have elected to participate in player-killing sometimes loot the bodies of defeated characters, and at various times in the history of these games, this activity has also been an important source of valuable items within the economy.

Both games place certain limits upon the use and exchange of items. Some are "no-drop", meaning they cannot be given to any other character or even removed from the inventory of the character who acquired the item in the first place. Other objects are restricted in the type of character who can use them, or require a certain minimal skill level to use—the more powerful the item, the higher the skill needed. The net effect of most items is to make the character who uses them more capable of killing more powerful adversaries, who have more desirable loot, which makes the character more powerful still, and so on. However, if an item is not useable by the character himself, he may still be able to trade it, assuming it is not a no-drop object. Thus, many players kill monsters less to enhance their own power directly than to acquire useful trade goods to barter for what they need—or to enhance the abilities of weaker characters with whom they share some in-game social connection. As with Ultima Online's physical resources, the supply of monsters is constantly renewed as they are harvested through battle.

All three games have a set currency used by NPC merchants. Economic transactions between players are most likely to involve trade through pure barter or with

alternative quasi-currencies that players value for various reasons, such as “shards” or “sturdy iron keys” (SIKs) in Asheron’s Call. The official currency in Ultima Online was far more valued at the outset of the game, however, and once figured more prominently in transactions between players. All three games have “money-sinks”, NPC merchants to whom players must regularly make significant payments to obtain certain supplies or services. For most of the history of Asheron’s Call, for example, anyone wishing to cast spells has had to buy “components”, and the most powerful spells have very expensive components which must be replaced periodically. Ultima Online has far more extensive money-sinks which give players significant incentive to accumulate vast amounts of money—houses and boats which players can purchase and own, with the former being particularly desired and in short supply due to finite storage space on the game’s servers.

Ultima Online also has a crucial dynamic missing in the other two games: items, whether looted from monsters or manufactured by players, decay over time, and need to be repaired and then eventually replaced. In the other two games, objects are infinitely durable, and so infinitely accumulate if kept on the person of the characters. As a result, in Asheron’s Call, players often designate one or more of their five allotted characters as a “mule”, whose only function is to store objects of potential value in its personal inventory. The only force in these two games that takes looted items out of circulation is if they are lost through mishap (when killed, characters can lose items that disappear if not recovered in a set period of time) or if they are sold to NPC merchants because they are judged insufficiently worth keeping. Ultima Online, in contrast, allows characters to store items and cash in a bank, but has discouraged the use of mules through technical limitations on rapid logging out and in. Item decay in Ultima Online is slow enough that

Burke, Rubicite Breastplate

many players have nevertheless hoarded vast amounts of goods, many of them of their own manufacture. (Kolbert 2001).

Don't Feed the Carebears: Three Economic Populations

Though the economic structure of the three games differs, all three are divided between the same three fundamental economic constituencies, often sharply so. Richard Bartle's useful typology of multiuser game players has considerable overlap with the categories I will use in this paper, but his categories are more focused on general modes of gameplay rather than the specific way that players interact with the internal economy of the game. (Bartle)

The first of these groups, and by far the largest, are what I call *utility-maximizers*. These players are the classic *homo economicus* beloved by economists, relentless seekers of the most efficient way to accumulate the most wealth in the least amount of time and with the least effort. Utility-maximizers, also sometimes called powergamers, seek to find the quickest way through obstacles between them and economic rewards, or if possible, a legitimate way to circumvent them entirely. They compare the relative value of items in the gameworld and converge, sometimes with frightening collective speed, on the best possible version of any tool or the best pathway for character development, best in this case being defined by whatever allows still greater degrees of maximization.

In Asheron's Call, for example, maximizers have responded to various changes in the game's dynamics since its inception by ruthlessly discarding characters that they have developed if a more effective or powerful character design has been discovered. They find which monsters convey the greatest reward for the least risk, whether that reward is

Burke, Rubicite Breastplate

expressed as large amounts of experience or especially valuable loot. They then kill these monsters repeatedly. Monsters that return neither good experience nor loot relative to the risk entailed in killing them are completely ignored by maximizers. The locations that maximizers regard as useful are frequently jammed with hundreds of players attempting to carry out the same tasks simultaneously. Two remote towns, Ayan Baqur and Fort Tethana, had until mid-2001 NPC merchants who paid 120% of the normal currency price for looted goods, and as result, they were exceptionally crowded with players who found ways to travel instantaneously to these towns whenever they had accumulated large amounts of expensive but otherwise useless loot. In another town, there is a “subway” of magical gateways to many parts of the world, which allows maximizers to avoid the time-consuming task of running from place to place, making it an equally crowded locale. Large monkey-like beasts called tuskers give good experience for relatively little risk, and as a result, maximizing players congregate like locusts in sites where tuskers abound.

In situations where there is no limit on the number of players who can perform a task simultaneously, such crowding is only inconvenient, as Asheron’s Call’s designers control the resulting burden on their servers by randomly teleporting characters away from the most densely populated areas. In circumstances where crowding leads directly to competition between maximizers, as in the case of harvesting tuskers or other desirable monsters, there is ruthless one-upmanship to find the best character design for killing the most of these creatures in the least time and so deny such kills to other players. It is hard to find a more straightforward illustration of that basic parable of neoclassical economics, the tragedy of the commons.

For example, as an Asheron's Call character gets the lion's share of experience for a kill by doing 51% of the total damage to it before its death, one type of maximizer "skims" tuskers, doing 51% and moving on, leaving other characters stuck with the remainders. In other cases, characters who can attack at a distance but who are more vulnerable to direct physical assaults, like archers, may follow at a distance behind a warrior and wait for him to engage an enemy, whereupon the archer can "steal" the kill at little risk to himself, as the monster will concentrate on the first character which attacked it. (The hapless warrior is often referred to as a "meatshield" by the archer or wizard using this trick.) In some dungeons, it is possible to "drain" and then kill enemies through walls, leaving them unable to retaliate, and many maximizers can be found at the specific locations where this is possible, repeatedly performing this sequence for hours and hours without moving. Crowded locations also allow weaker characters to be present and reap some share of the rewards, as the dangerous enemies in that location are killed almost instantaneously as they spawn. Powerful characters will only pick up loot that is highly valuable, and weaker characters that follow behind them may be able to make significant profits simply by taking whatever is left.

Maximizers have had a roughly similar impact on all three MMPGs: the sequence of actions that they uncover, which they evaluate with algorithmic precision for their superior risk/reward ratios, quickly become dominant routines within the culture of the game. When new elements or regions in the game are introduced, maximizers quickly test them and their discoveries are transmitted with astonishing speed to the whole community. Even when the most skillful maximizers attempt to keep a particular hunting ground or sequence of actions secret from others so as to minimize competition, there is

only a short lag time before their knowledge becomes public--if nothing else, through astute observation and imitation by competitors. Acute competition sometimes leads maximizers who have slightly suboptimal character templates or equipment to move to slightly less optimal hunting sites, but there is a steep drop-off between the very small number of locations judged to be optimal or nearly so and all other routines and activities. In many parts of the gameworld of Asheron's Call, a player can wander without seeing another player for hours.

The second major population is small in number but is often quite vocal and influential within these communities. I characterize this faction as the *moral economy* faction. Anthropologists and other social scientists understand the term "moral economy" to apply where social actors believe that economic transactions should be governed by social and cultural rules or ethics which transcend or precede the logic of the marketplace—for example, a belief that certain goods or services should never be commodified, such as the holding of land in usufruct or other non-market systems. In these MMPGs, the moral economy faction asserts a simple foundational argument, that these are *games*, and that the guiding question that should govern all player actions should be, "Is this fun"? For most of them, maximizing behavior is more like work than fun. Many of these players also have a preferred style of participation generally known as "role-playing", meaning they construct fairly elaborate personalities, backgrounds, and motivations for their characters and attempt to act in the gameworld as if they were participating in an interactive fiction.

These players often can be found exploring remote areas of the gameworld, holding lengthy meetings or conversations, maintaining small subcommunities within the

game, or engaging in other highly suboptimal or nonoptimal activities with little or no economic impact. They may actively avoid congregations of maximizers.

The third faction is the most difficult to describe as they are necessarily secretive. These are the *exploiters*. There are subgroups within this group: exploiters tend to make strong distinctions between themselves based on the extent to which they will pursue their approach to the virtual economy of the game, and their motivations for doing so.

The mildest form of this strategy involves discovering and using bugs, design errors or unintended behavior of game features that return unplanned or aberrant economic rewards. These exploiters may find an easily killed monster that repeatedly drops far better loot than it was meant to, or they may discover that some unexpected interaction with the game environment causes resources or currency to become available with little effort. In Asheron's Call, exploiters found that in certain locations, powerful monsters could be enticed to fall off of high cliffs and that the monsters would then focus largely on trying to return to where they came from, which made it relatively safe for weak characters to attack—an exotic form of a general tactic sometimes known as “kiting”. More ambitious exploiters found that by giving extremely large amounts of a valuable commodity to a NPC merchant, that merchant would accidentally drop even larger amounts of an exceptionally valuable item because of a software bug, goods which could then be collected off the floor and resold to another merchant for a massive profit.

More extreme exploiters make use of third-party software that may or may not be approved of by the designers, software which gives them some advantage over other players. Everquest and Ultima Online have generally banned most such software, while Asheron's Call has been relatively open to such programs. Common third-party programs

include those which locate all valuable items of a particular kind within the player's vicinity, that aid characters in casting spells or tracking their inventory, that allow players to locate their own corpses for purposes of recovering items from them, or that give players an enhanced sense of the creatures in their environment, including those that they cannot directly "see". More controversial programs include Gear, which speeds up a player's interactions with the gameworld, and various "macros", which allow a player to automate his character's actions while the player is not at his computer terminal. In the latter case, for example, some players of Ultima Online made macros that caused their characters to mechanically repeat the use of the same trade skill indefinitely until that character achieved the highest possible level of skill. In Asheron's Call, some players have used macros to hunt monsters from safe "perches" or to gain experience through repeatedly and rapidly casting spells on themselves.

The first faction of exploiters generally argue that they are merely more canny maximizers who seek useful exceptions to the rules of the game, while the users of third-party programs tend to rest on legalisms (if it is not forbidden, it is permitted), or on arguments that poor game design justifies the use of shortcuts to avoid absurd tedium. A last sort of exploiter rarely tries to justify his actions, or admit to them, as they are unambiguously a form of impermissible cheating. The schemes used by such exploiters vary widely. Some use tricks or con games on gullible players either inside or outside of the game that cause them to give up valuable objects or even their entire account to the exploiter. In Asheron's Call, another kind of exploiter acts as a "mulejacker", surreptitiously following a player who intends to transfer items from one of his characters to another by dropping the items, rushing in at the moment when the player is in between

his two characters and grabbing the items. The most common and economically destructive form of cheating, however, involves the use of bugs or hacks to duplicate (“dupe”) valuable items. Early in the history of Ultima Online, for example, massive amounts of gold were illicitly duped, and it is now impossible for the designers to distinguish clearly between purchases made legitimately and those that involve counterfeit currency. In Asheron’s Call, some dupers discovered that a bug would allow players to deliberately crash subervers, and those who had prepared properly would find they had two copies of certain items when the server rebooted. Essentially, this kind of economic activity corresponds to criminal forms of economic behavior in the real world, with the singular difference being that the most ambitious and unscrupulous criminals can actually alter what amount to the local laws of physics.

Exploiters are usually maximizers, and if their strategies become effective or widespread enough, the general population of maximizers usually adopts them in turn, arguing that they have no choice. Use of a third-party software program to research the difficult spell formulas employed in Asheron’s Call became so widespread that it quickly became less an exploit and more a standard maximizing tactic, eventually receiving the tacit endorsement of the designers. Most maximizers will not engage in activities that directly risk retaliation from the game administrators, but some exploiters will take the risk of being banned from the game for violating the rules in order to achieve even greater rates of quasi-illicit economic return.

Crucially, some exploiters do not experiment with bugs in order to maximize, but simply out of curiosity, as noted by Richard Bartle in his taxonomy of MUD players.(Bartle) Equally, some exploiters do not act as maximizers, but instead act as

“grief” players whose primary purpose seems to be to make the experience of other players less enjoyable. In a sense, these exploiters actually operate more within the terms of a moral economy approach in that they seem to put having fun ahead of the more efficient accumulation of value. It is merely that their sense of fun involves spoiling the fun of others. For example, this kind of exploiter may deliberately lure monsters to attack another player while that player is already engaged in a difficult battle, or may exploit a bug to block all access to a particular location for the pure nuisance value of doing so.

There is actually one further division which has some bearing on the economic posture of all three of these factions, and that is the difference between player-killers (PKs) and those whose only adversaries are computer-controlled. Ultima Online, which was the first of the three games released, initially allowed all players to attack and kill other players. Within towns, any player who attacked another was immediately attacked in turn by powerful computer-controlled town guards, but outside of the towns, it was generally a Hobbesian experience, kill or be killed. This had a huge impact on the game, as players themselves were generally a more cost-effective and less dangerous source of wealth than monsters. As a consequence, both maximizers and exploiters (of all sorts) tended to pursue player-killing fairly exclusively, often hovering at the edge of towns waiting for fresh prey, the more unsuspecting and weak, the better. Even some moral economy players did so on the logic that they were acting out the role of an evil bandit.ⁱⁱ PK-ing was more of an afterthought in the other two games, and the economic benefits of engaging in it are far more limited in Asheron’s Call and nearly non-existent in Everquest. All three economic factions I have described are involved in PK battles, depending on the circumstances, but the antagonisms between those who prefer PK and

those who refuse to participate in it (a group that PKs sometimes call “carebears”) often intertwine with other economic divisions and debates.

STFU: Strategies and Struggles in the Battle for Control of the Virtual Economy

Imagine if anti-globalization activists and multinational corporations could both pray to deities, asking them to spontaneously alter the laws of physics and the basic determinants of social relations in their favor and actually have a reasonable expectation that their prayers might be heard and answered. The ether between Heaven and Earth would buzz incessantly if so.

This is exactly the situation as it stands in persistent-world MMPGs. All three of these games changed considerably since their launch, and the majority of changes both small and large were aimed at adjusting the functioning of the virtual economy within the gameworld. Such changes are invariably preceded and followed by a great online din as players debate their impact. The administrators of the games vary in their attitude toward the players, ranging from haughty disdain for much of Everquest’s history to fading amicability from the designers of Asheron’s Call, but all of them are unmistakably affected by the online discourse of the players as well as patterns of player behavior within the gameworld.

Antagonism between the three player constituencies is always present, and frequently escalates to serious invective and ill-will. For one, moral economy players tend to assert the superiority of their mode of participation and to try and build sub-communities who share in this ethos within the game. Some moral economy players argue that whether a player role-plays or not is immaterial, but that maximizing is never

“fun” and always to be avoided. Different members of this faction attribute the dominance of maximizing to different causes, some asserting that it is a consequence of stupid, greedy or unimaginative players, often scorned as “d00dz” for the abbreviated, semi-literate pidgin that many maximizers employ to communicate, while others assert that it is a consequence of basic design flaws in the games themselves.

Moral economy advocates often argue that the hegemony of maximization effectively forces them to engage in maximizing economic behavior themselves. In order to explore the whole of the gameworld, for example, players must become more powerful—and to become more powerful in any reasonable time frame, without a great deal of tedium, players must engage in maximizing behavior. Being powerful also requires the best equipment and correct character design, both of which cannot be achieved without maximizing. Some moral economy players may celebrate the extent to which their characters are “gimped” or non-maximized, but they also find themselves excluded as a result from some activities and regions within the game. This is often the dilemma that advocates of a moral economy find themselves in within any society which is experiencing a rapid transition to market relations: their views quickly slide into obscurity and powerlessness unless they themselves participate in that transition, which of course makes their ethical views of political economy a moot issue.

Role-players in particular also suffer from another related dilemma. In all three games, the underlying “story” behind the virtual environment tends to be fairly weakly developed. The fundamental perspective that all players operate with (particularly role-players) is that they are the central protagonists within the “emergent narrative” of their own gameplay. They are the hero of their own story, and in the general fantasy genre

from which these games draw, that usually means the fastest, strongest, wisest, most valiant and most powerful warrior or wizard, the central protagonist in the key events of the storyline.

When new content or quests are made available in these games, both maximizers and role-players rush to complete them, but for radically different reasons. The maximizers want to be the first to gain whatever rewards are available, and so enjoy a brief competitive advantage, or if the rewards are unique, as sometimes happens, gain the only available copy of a powerful item. The role-players wish to be the heroes of the story. In Asheron's Call, when an evil demon of great power was released upon the gameworld, the competition to gain access to his dangerous lair and banish him was intense—but one group of players wished only to see what loot he might have, while another wished to accomplish this goal because it was in their minds an appropriate deed within the personal narrative they were developing for their character. For role-players and other moral economy-oriented participants to achieve these goals, they often have to be capable of competing with maximizers—which in turn means acting like maximizers.

For their part, maximizers recognize that they are dominant within these game worlds, and rarely seem to feel directly threatened by moral economy players in debates outside of the game environment. Many do, however, react with intense negativity to their presence within the game itself, verbally abusing role-players in particular with great intensity and persistence. While role-players complain that maximizers spoil the immersiveness of the game, maximizers complain that role-players are pretentious, psychologically unbalanced and unable to appreciate that the game is *merely* a game, a game in which the goal is to out-compete all the other players.

However, while moral economy players generally form a loose community, and recognize a commonality of interests, maximizers find more often that they are engaged in a struggle for domination against other players who share their view of the economy of the game. Both inside and outside each of these games, no discussion is as intense and vituperative as the question of balance between different player classes or templates. Any nerf or other related change is likely to be met by jubilation by some maximizers and intense, sustained fury from others.

If maximizers and moral economy players agree about anything, it is about their low regard for exploiters. For moral economy players, exploiters represent the logical extension and final terrible consequence of maximizing behavior, while maximizers see exploiters as destroyers of stable forms of economic value, either because they directly attack the worth of accumulated wealth or because they are likely to provoke designers into a systematic nerf. Exploiters of the more moderate sort tend in turn to defend their style of gameplay as a more intelligent and technically capable form of maximization. Exploiters, especially the more extreme ones, are not so much involved in contests against other player factions for control of the game economy as they are involved in contests against the software that runs the game, against underlying programming and administration.

For moral economy players, issues of value, accumulation and exchange within the game are always social issues, involving the relations between players. For maximizers, such issues may be social, they may involve forms of economic practice within the game, or simply be technical concerns. For exploiters, on the other hand, such

issues are always technical and practical unless they involve “social hacking”, fooling or deceiving other players.

The diversity and technical simplicity of older and existing text-based MUDs has allowed their designers and players to consciously experiment with focused economic models intended to produce particular kinds of practices and behaviors within the gameworld. Such experiments include Habitat, Point MOO, and PecuniaMUD. (Dibble, 1995; Leonard, 1998; <http://www.wu-wien.ac.at/usr/ai/mitloehn/pecunia/>) The three commercial MMPGs, by contrast, have been compelled to try and be all things to all players. Raph Koster, one of the lead designers of Ultima Online, has argued that the original complexity of Ultima Online’s economy was simplified largely because players of all kinds did not find it “fun”, and that anything which leads players to regard a commercial MMPG as less enjoyable is something which threatens its viability. (Koster) This imperative has confined the management of the virtual economy to a delicate ecological dance, trying to preserve niches for all types of players save extreme exploiters.ⁱⁱⁱ Struggles between players over the economy are therefore only partially expressed in terms of antagonistic forms of practice within the gameworld. Equally important is the rhetoric used by players to appeal to designers (mostly through game-related websites), which is often aimed at persuading the designers that one faction or another is so comprehensively disadvantaged in economic terms that its players may leave the game.

Complaints about exploiter behavior are the most likely to lead to direct changes, but other pleas receive favorable attention. When a representative of Turbine, the designers of Asheron’s Call, revealed that their tests showed that at high levels,

Burke, Rubicite Breastplate

specialists in unarmed combat had a significant advantage over other kinds of warriors, many maximizers immediately developed new characters with this specialization. When warriors specializing in sword-fighting complained that their skill was unfairly costly at the initial design phase, the design team added a new kind of sword which had major advantages over any other kind of weapon in the game. Designers also intervene to protect perceived imbalances in risk-to-reward ratios, feeling that a game where everything is too easy or too hard rapidly becomes a game which loses customers. In Asheron's Call, for example, one of the hardest quests in the game was redesigned multiple times in order to preserve its difficulty as maximizers relentlessly found ways to make it quicker and simpler and exploiters found ways to "steal" the quest from those who had legitimately initiated it.

Why Do We Play? The Sources and Meaning of Economic Behavior in MMPGs

These conflicts do not arise spontaneously within these games. It has become commonplace to scold the first generation of cyber-utopians who viewed online communication as something which would intrinsically, technologically produce a new and better society. The users of online media, we have been warned, bring prior attitudes, behaviors, consciousness, identities, and social status with them into the online world. Such scolding has become so common as to become a banality in its own right. The players of MMPGs enter the games carrying many cultural and social predicates, but the games also highlight and transform what the players bring to the table in some striking ways, some of which are technologically mediated, and some of which are a result of the evolving internal culture of each game.

The extent to which players gravitate towards one of the three basic economic postures has something to do with their real-world economic philosophies, and the justifications that players offer for their style of economic practice within the game often draw on familiar real-world discourse about economic competition and the marketplace. Successful exploiters and maximizers frequently make use of economic Darwinisms, scorning critics as insufficiently adaptive players who seek to subvert a fair meritocratic order. Maximizers who feel that that design changes have unfairly impinged on their ability to compete tend to borrow anti-governmental or anti-statist rhetoric from free-market advocates, viewing such changes as a form of anti-competitive regulation. Moral economy players criticize maximizers as greedy profiteers whose slavish devotion to economic competition destroys the civil society of the game, using arguments that would be perfectly at home in such anti-market critiques as Barry Schwartz' *The Costs of Living: How Market Freedom Erodes the Best Things in Life* or Amartya Sen's essay "Rational Fools". (Schwartz 2000; Sen 1996) Exploiters, when they bother to justify their practices, can sound uncannily like defiant white-collar criminals, arguing that whatever you have to do to get ahead, you should do it.

However, players rarely **consciously** link such real-world debates to economic contests within the gameworld. They do occasionally characterize the real-world economic identities of their opponents, with moral economy players viewing maximizers as wealthy and spoiled teenagers and maximizers viewing moral economy players as maladjusted adults who are trying to compensate for being social and economic losers in the real world. Real-world debates about economic behavior and free-market ideologies tend to rest on axiomatic assertions about human nature and fundamental moral values.

Almost all players of MMPGs accept that they are involved with a simulation in which “human nature” is plastic and manipulable, a simplified construct produced intentionally by the collective action of designers and players. In a sense, the relatively simplified economy of a MMPG exposes what Sen argues is a fact of real-world economic life, that favoring an economic conception of social life, whether maximizing or otherwise, is always a conscious philosophical choice and not a predetermined natural fact. It also exposes, however, the extent to which maximizing strategies are overwhelmingly effective in achieving their goals whenever a social world, real or simulated, is structured around competitive hierarchy. MMPGs which model the accumulation of economic power as the mechanical acquisition of experience points and the possession of looted items inevitably choose (whether designers recognize it or not) to have their games dominated by maximizers.

However, the consequence of these choices, both by players and designers, is less predictable than it might at first seem. The dominance of maximizers does not always or even often lead to the results that a good neoclassical economist might expect. For one, the institution of the market in each game is often a very unstable or unresponsive one without the political or social consequences that such instability would entail in the real world. Currency, both the literal money used by NPC merchants and informal currencies like SIKs or shards, is effectively in infinite supply, and total holdings of such currencies are absolutely non-transparent to the players. There is no way to even guess how much is in circulation at any time. Players sometimes relate to developers as if developers represented the state or government, but in fact, most of the economic functions of a state

are absent from the gameworlds, particularly in terms of protecting trade and making its terms transparent to all participants in the economy.

It is common to hear complaints in the most crowded locales within these games about the instability of price values and the unpredictability of trade. It is hard to tell how much commodities are worth. NPC merchants buy and sell at fixed prices, except in the model used initially by Ultima Online, but player-to-player trade is hugely volatile, determined as much by the game-relevant knowledge, in-game social relations and the in-game social status of the players involved in a trade as by the intrinsic value of the items being traded. Exchange is often also strongly influenced by the real-world relationship between players. In fact, powerful items are frequently given by real-world friends and associates to each other rather than traded, or are hoarded monopolistically by in-game guilds or social organizations as a way of denying such items to others. Players who are heavily involved in trading within the games sometimes try to create and enforce stable price structures by publishing suggested prices on unofficial web pages, but these price structures tend to hold only for a very small circle of experienced players.

Most services provided by the NPCs in the gameworlds are totally unresponsive to market fluctuations, even in Ultima Online's more sophisticated economic model. It is clear, for example, that the demand for stables in which to store trained animals in Ultima Online vastly outstripped the available supply, but expanding such storage apparently was thought to have a seriously negative impact on the technical functioning of the game itself. Small changes in the technical functioning of the environment by designers in all three games have had dramatic hyperinflationary or deflationary effects on both official and unofficial currencies. If designers represented a government, then that government

would surely have been overthrown many times over by revolutions after such changes. It can be difficult to even find out if the destabilizing effects of such changes were even intended or desired.

A good deal of my own scholarly work has concentrated on commodification, the process by which goods acquire value and enter into circulation within market economies. In a very different context (Southern Africa in the 20th Century), I have argued that commodification is a historically contingent process. Manufactured goods introduced to Africans did not have fixed values directly related to their usefulness. Their value was substantially determined by what those goods meant to African peoples and African individuals, and that the meanings of commodities were always subject to shifting and contestable interpretations over time, influenced by a vast array of social and cultural changes. (Burke 1996)

By contrast, in an MMPG dominated by self-professed maximizers, it would be reasonable to expect that commodity value would have a direct and stable correspondence to utility. Strikingly, it does not. The value of tradeable objects not only fluctuates in response to supply and demand but also in response to aesthetics, the meaning of things to the players, and the changing internal culture of the game. In Ultima Online, among the most desirable and expensive commodities that can be traded for are “rares”, artwork and craft objects that can be used to decorate a character’s home. They are called rares because they have been discontinued by the designers: the only ones in circulation are those that existed at the time that the objects were discontinued. They confer no real advantage in terms of power over the gameworld. In both Asheron’s Call and Everquest, there are highly valued trophy items which have no intrinsic power but

signify that a character has participated in a difficult quest or defeated a powerful monster, perhaps a unique monster which no longer exists. These items are generally only worn or displayed in safe—i.e., social—settings, and not during the labor of harvesting loot from the gameworld environment. Some of the most active traders in Asheron's Call are maximizers who are trying to assemble a suit of armor of one particular color or style and who may pass up superior pieces of armor while pursuing this goal. Maximizers in all three games will expend considerable amounts of currency or resources acquiring titles, houses or other marks of distinction that have no direct impact on their power over the virtual environment of the game.

If objects are valued for their meaning as much as their utility, and the characters who have the most wealth, or the most power over the game environment, are not necessarily those who have accumulated the most currency, commodities or experience, then the initial impression that these games are dominated by simple maximization needs revision. Social status in each game is also determined to a great degree by the maintenance of a stable identity and reputation, and status of this kind often has direct economic consequences in that it helps more powerful players to call upon the labor of less powerful ones.

In Everquest and Ultima Online, in fact, group play is an absolute necessity for high-level or high-skill maximizers, and in Asheron's Call, the developers have actually incorporated a formally hierarchical allegiance structure into the game mechanics. The paradox is that maximizers cannot achieve the necessary status to mobilize labor through maximization alone. Two high-level characters may be equal numerically, with the same possessions, but only one may have the accumulated respect and reputation within the

culture of the gameworld to tap into that crucial last layer of economic benefits achieved through social relations. Even exploiters rely on a shared culture within and outside of the gameworld, as few of them have the technical skills to actually locate bugs, create third-party programs or hack the code themselves. They rely on others to do that labor and make their work available to others, which is often just what happens.

Swarms of maximizers camping at fixed monster spawns are only the surface: underneath that surface is a more communitarian, relational sort of economy which is powerfully influenced by maximizing but is not, in the last instance, determined by it. They might gain little satisfaction from it, but the moral economy faction speaks to more of the underlying dynamic of these games than they might guess.

Satisfaction is the issue in more ways than one. If maximizing does not create a transparent and meritocratic economic order, ultimately requires participation in a social system which is not directly determined by the game mechanics, and involves a tremendous investment of time in repetitive tasks which arguably seem more like work and less like leisure, why does anyone do it, let alone the majority of the players? I have already suggested that basic design choices have a good deal to do with this, but there is more to it. Psychologist Barry Schwartz suggests that maximizers in market economies are doomed to perpetual dissatisfaction compared to people who accept suboptimal results as sufficient. For Schwartz, such a choice can only be explained as addiction, habituation to routine, or subordination to a dominant social system. (Schwartz 2000)

My own work on mass consumption makes me think that these arguments are too neat. The moral economy perspective, both within MMPGs and in the real world of liberal democracies, has long assumed that lasting satisfaction can only come through

communitarian civil society, that the extreme individualism of the free-market ethos offers only short-term and socially destructive benefits. But dissatisfaction can be a source of pleasure in its own right, the engine of desire. In MMPGs, for some players, maximizing is itself fun, a playful hyperexaggeration of real-world labor, a strategy that allows the player to act independently of social structures when desired but be part of them when necessary, to follow predictable routines that produce predictable results when the player has too little time or energy to become involved with more demanding or creative styles of play, to thoroughly explore the underlying technical structure of the simulation without breaking it as exploiters do. Many maximizers understand the argument of moral economy players, but find their vision confining, regulatory, and elitist, one that replaces a concrete economic hierarchy built on measurable achievement with a slippery hierarchy built on rhetorical and cultural skills that originate from outside the frame of the game. I find myself allied with the moral economy faction when I play these games, but I do not underestimate the deliberate passion and energy of many maximizers in the way they approach the virtual economy and their place within it—even as I would also argue that at least some of that passion is less an expression of their own choice and more an adaptation to (less than optimal) foundational choices made by the developers.

Topsy-Turvy: eBay and the Labor Theory of Value

In one sense, all of what I have argued so far misses the point. At the end of the day, good maximizing strategy or superior reputation within the culture of the gameworld may matter less in economic terms than the raw amount of time that a player spends

Burke, Rubicite Breastplate

connected to the game. More than one commentator has noted that in economic terms, MMPGs actually come oddly close to acting out Karl Marx's labor theory of value: individual labor time invested has a direct correspondence to the production of wealth. There are exceptions, but generally the players who have the most economic power either in terms of possessions or social reputation are the ones with the most free time to waste on non-economic activities.

This is why many assume that the players who are dominant in MMPG economies are people who in real-life terms have tremendous amounts of available time not consumed by actual labor: children, students, the idle rich, the unemployed, or (ahem) academics. Peak times in all three games correspond to times that most US players are not working (weekends and evenings) but it is possible to identify a significant population of prominent characters with lots of in-game wealth who seem to be connected a large portion of every day, only some of whom are exploiters using macros.

What has unsettled this picture is the rise of a real-world market for virtual goods from these MMPGs. On eBay and several similar auction websites, items, currency and even characters from Asheron's Call, Ultima Online and at one point, Everquest, have been fetching considerable sums of real money. The first such auction was of in-game currency from Ultima Online in March 1999 and the response was so overwhelming that the market quickly mushroomed to substantial proportions, drawing attention from mainstream media in the process. (Cook 1999; Branscum 1999) Complete accounts with houses in Ultima Online have sold for thousands of US dollars, as have accounts in all three games that have several very advanced or powerful characters and all their possessions. Individual items of various kinds from all three games have been known to

sell for over \$500. Before Verant took steps in the spring of 2001 to radically curtail eBay sales of accounts and items^{iv}, one active Everquest seller that I was in contact with made over \$13,000 in a period of six weeks harvesting and selling a single item from a powerful monster. In an average day before Verant's crackdown, somewhere between \$5,000 and \$12,000 in virtual goods from all three games changed hands on eBay.

There are some delicious ironies here. Many maximizers despise eBay "pharmers" both because the single-mindedness of pharmers even outstrips and thus outcompetes the dedication of most maximizers and because players who purchase their characters and possessions off of eBay have somehow not truly "earned" the right to their wealth and power within the game environment. Maximizers (and other players) scorn any detectably eBay-purchased character as inauthentic, without the knowledge and social networks any wealthy or powerful character should possess. Players protest that they are playing a game with rules where achievement should reflect the investment of labor and that eBay sales spoil their fun by taking in-game aspirations and turning them into an issue of real-world money-making. In short, they deploy a moral economy argument against real-world utility-maximizers.

Ebay sales also completely invert the time/wealth equation. Without such sales, wealthy and powerful characters would usually be produced by people with the most real-world time to expend, but with such sales, people with little time but lots of money are effectively able to purchase the labor-time of maximizers and achieve what formerly required the investment of time in virtual labor. In part, maximizers protest because they understand the time spent accumulating in the MMPG as leisure time. Pharming exposes the labor-like quality of that time and actually attaches a real price tag to it. As

Burke, Rubicite Breastplate

maximizers transform into pharmer, they become something in between workers on a virtual factory floor and driven entrepreneurial middlemen. Furthermore, the existence of the eBay market has completely altered the activities of exploiters. Duping was once a strictly internal crime with strictly virtual effects, but it is now a kind of real crime, with real financial consequences.

The hall of mirrors does not end there. At first, pharmer literally seem to be earning “money for nothing”, as one journalist put it—but pharming takes time, just like maximizing does. The returns seem impressive until one begins to cost out the actual hourly rate of return and the overhead involved. Earning \$13,000 in six weeks required the initial purchase of two accounts with high-level characters, keeping two computers open and connected at most times, and remaining alert and focused on both screens while waiting for a random monster spawn for a large portion of the available hours in a given day, seven days a week. This is still a fairly good living, but it is a demanding one. If the pharmer was distracted for even a few moments when the spawn occurred, he did not get the item that he was selling, and it could be hours before another opportunity presented itself. Were pharmer truly rational economic actors in the neoclassical sense, many of them could probably find more impressive conventional rates of return on labor time invested. What a number of pharmer I spoke to said was that in the end, this was a “fun” way to earn money if not always a sensible one. Moral economy triumphs again in the last instance, or at least has the last laugh.

MMPGs as Economic Simulations: Diversity is Interesting *and* Fun

To conclude, it seems to me that MMPG economies have the potential to reveal both to players and observers some important truths about how contemporary people behave economically and how they think about behaving, perhaps precisely because they are games that bring together large numbers of strangers. The players do not expect to learn such lessons through the game, nor do mainstream thinkers expect such games to teach anything important, though “The Sims” and “Sim City” have attracted a certain amount of attention for their educational value. (Starr 1994) Psychologists and experimental economists have been far quicker to grasp the value of interactive computer games as tools for thought, (Peters, Vissers and Hejine 1998) but in accord with their disciplinary traditions, generally seek to use simple and custom-designed games as part of controlled experiments.

What makes these three commercial MMPGs so interesting as social and economic simulations is that they are *uncontrolled*, natural, holistic. (Porter 1995) Like any simulation, they are less complex than the real world. It is possible for designers to alter a single variable or feature and produce dramatic economic consequences, just as it is possible for a small group of players to effectively accomplish the same through deliberate action. Such experiments tell us a great deal about the behavior of dynamic economic systems. But these virtual economies are also opaque and mysterious like real life, the alchemical byproduct of their internal history, of shifting cultural practices within the community of the game, of endless rhetorical and behavioral struggles between players and between players and developers, of radically different conceptions of selfhood and subjectivity resolving themselves through the simultaneous actions of thousands of three-dimensional computer avatars. The rational self-interested individual

of much economic theory is a presence in these games, but only up to a point, after which more intricate and unpredictable social and cultural logics take over.

MMPGs may well be a major part of the digital future, not just as a form of mass entertainment with the same revolutionary possibilities that cinema had in the 20th Century, but as a model for graphically-based virtual communities of all kinds. As such, the first three commercial MMPGs are both promising and unsettling. They build well on some of the most socially intriguing possibilities of text-based MUDs, MUSHs and MOOs. They are obviously compelling to their users even with considerable technical and social problems, or even when their administrators manage to alienate large portions of the player base, as is the case with Everquest.

If these are the templates for an online future, then we desperately need a more pluralistic, diversified range of models to draw upon. Their economies, which are the most powerful force shaping the whole spirit of their communities, ultimately prescribe a kind of relentlessly hierarchical accumulation within the game and service some of the least admirable impulses of commodity capitalism as it exists outside the game, surrendering to maximizing and pharming. The energy and productivity of both impulses can be awe-inspiring, but they are also something of a dead-end, a loss of creative potential.

A MMPG which tried to eliminate the accumulative impulse altogether, or which wholly favored the moral economy approach, would likely to be boring if it succeeded, though I suspect very much that players would find a way to subvert such designs in any event. The MMPG economies which will be both exciting as a form of play, instructive as a form of simulation and useful as a template for the future will be those which put the

greatest number of social and economic tools in the hands of the players themselves. What is needed is not a more confining and prescriptive design but a more open one. A more open MMPG economy begins in some ways with closing it, with making all pre-existing resources, currencies and so on finite within the gameworld. After a certain point, nothing new of value but what the players make themselves using trade skills should exist. This would compel players to face the inevitably social nature of economic life in an MMPG, to stop behaving as if they were Robinson Crusoe hacking out a livelihood in a jungle full of electronic phantoms. Closed economies coupled with a full set of social tools, tools allowing players to open businesses, run governments, pass laws, demand rights and so on, is certain to produce economic diversity both within a single gameworld and within the larger genre of MMPGs.

What is needed, in fact, is for these virtual economies to mature by design into *political economies*, where social life and economic activity are not optionally related but instead are understood as intertwined. The technical potential is already there: what will be needed now is the creative courage. If designers build it, players will come. They endure the considerable flaws of the current games, after all. Surely they—and perhaps many others—will eagerly seek out MMPGs which transcend those limitations.

Burke, Rubicite Breastplate

Anonymous, <http://www.wu-wien.ac.at/usr/ai/mitloehn/pecunia/>.

Bartle, Richard. "Hearts, Clubs, Diamonds, Spades: Players Who Suit MUDs", <http://www.mud.co.uk/richard/hcds.htm>.

Branscum, Deborah (March 1999). "The 'Ultima' Gold Rush", *Newsweek*, 133.

Burke, Timothy (1996). *Lifebuoy Men, Lux Women: Commodification, Consumption and Cleanliness in Modern Zimbabwe*. Durham NC: Duke University Press.

Castronova, Edward, "Virtual Worlds: A First-Hand Account of Market and Society on the Cyberian Frontier", December 2001, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=294828.

Cook, John A. (August 8, 1999). "Money For Nothing", *The New York Times Magazine*.

Dibble, Julian (1995). "MUD Money: A Talk on Virtual Value and Incidentally the Value of the Virtual", <http://www.levity.com/julian/mudmoney.html>.

Kolbert, Elizabeth (May 22, 2001). "Pimps and Dragons", *The New Yorker*.

Koster, Raph. "Economics in a Virtual Setting", <http://www.legendmud.org/raph/gaming/economy.html>.

Leonard, Andrew (1995). *Bots: The Origin of a New Species*. Penguin Books.

Peters, Vincent; Vissers, Geert; Heijine, Gerton, (1998). "The Validity of Games", *Simulation and Gaming*, 29:1, pp. 20-30.

D.B. Porter, D.B. (1995). "Computer Games: Paradigms of Opportunity", *Behavior Research Methods*, 27:2, pp. 229-234

Rheingold, Howard (2000). *The Virtual Community: Homesteading on the Electronic Frontier*. Rev. edition. Cambridge, Mass.: MIT Press.

Schwartz, Barry (2000). *The Costs of Living: How Market Freedom Erodes the Best Things in Life*. Xlibris, 2000.

Sen, Amartya (1996). "Rational Fools: A Critique of the Behavioral Foundations of Economic Theory", in Aafke Komter, ed., *The Gift: An Interdisciplinary Perspective*. Amsterdam: Amsterdam University Press, pp. 148-163.

Starr, Paul, (1994). "Seductions of Sim: Policy as a Simulation Game", *The American Prospect*, 17, p. 19.

ⁱ Monsters carry items whether they have evident physical ability to do so or not—in Asheron's Call, large yak-like quadrupeds called mattekars may turn out to be 'carrying' magic wands, though they lack any hands or clothing in which to do so.

ⁱⁱ Partially as a result of this dynamic, which many players found frustrating for understandable reasons, Ultima Online later implemented a new system in which there are two parallel worlds that the players can cross between, one in which all players may attack other players, one in which no player may attack another

ⁱⁱⁱ The three companies define "extreme" rather differently, however: Everquest's managers tend to view almost all kinds of exploiter behavior (and even some maximizer behavior) as a sanctionable violation of the rules.

^{iv} I am still puzzled by Verant's new anti eBay policy, both because the company tolerated eBay sales for so long and because their game design so strongly favors maximizing, of which pharming is a logical extension.