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Order and Creativity in Virtual Worlds

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ABSTRACT

Economies are driven by dynamic creativity, but too much creativity, especially if it is predatory, can destroy an economy. This tradeoff has been known for centuries to political philosophers who have analyzed physical space, but has not been addressed in virtual space. Like physical economies, virtual economies face the tradeoff of encouraging freedom to experiment, while discouraging experiments that drive people away. Physical societies solve this problem both through encouraging competition and giving government the unique power to punish destructive activities. In virtual societies, this tradeoff has yet to be adequately assessed. Guided by the economic modeling of order and creativity, in this paper we discuss two types of behavior, constructive and destructive, to provide some guidelines, with references to experiences in physical economies, for establishing limitations on the freedom of action of virtual-economy participants.

Keywords

Order, creativity, virtual worlds, governance.

INTRODUCTION

In his masterwork Leviathan, Thomas Hobbes writes:

"The only way to erect such a common power, as may be able to defend them from the invasion of foreigners, and the injuries of one another, and thereby to secure them in such sort as that by their own industry and by the fruits of the earth they may nourish themselves and live contentedly, is to confer all their power and strength upon one man, or upon one assembly of men, that may reduce all their wills, by plurality of voices, unto one will: which is as much as to say, to appoint one man, or assembly of men, to bear their person; and every one to own and acknowledge himself to be author of whatsoever he that so beareth their person shall act, or cause to be acted, in those things which concern the common peace and safety; and therein to submit their wills, every one to his will, and their judgements to his judgement. This is more than consent, or concord; it is a real unity of them all in one and the same person, made by covenant of every man with every man, in such manner as if every man should say to every man: I authorise and give up my right of governing myself to this man, or to this assembly of men, on this condition; that thou give up, thy right to him, and authorise all his actions in like manner. This done, the multitude so united in one person is called a COMMONWEALTH." (Hobbes, 1972, p. 227)

The problem of how to organize social authority has preoccupied many of the greatest social thinkers in cultures around the world for thousands of years. Throughout most of this history, the creation of a new society was a matter either for abstract models of societies founded in a state of nature, or a question for historians investigating societies from the past. We could look into the results of a society's founding, or we could create an abstract conception of what its founding might have been like, but we could seldom observe the creation of a new society.

But thanks to modern information technology, now we can. People around the world now routinely create self-contained societies, with all the features of the broader ones outside – conflict, commerce, loyalty, betrayal, and more. Such societies are created on the platform of the Internet, which has the ability to bring many people together regardless of their physical locations. For instance online gaming, more formally known as massively multiplayer role-playing gaming (MMORPG), had grown to 217 million players by 2006 and is now a $4.5 billion global market (ComScore, 2007). New technology, including the much increased bandwidth and speed of the Internet and powerful computer systems, has now enabled the creation of much more sophisticated online societies, for instance virtual worlds.

Virtual worlds are 3D graphically detailed and highly interactive environments functioning through a computer-application interface on the Internet. While there is not an agreed-upon definition, virtual worlds can be said to have three characteristics: community, commerce, and collaboration. People participate or "live" in virtual worlds in the form of their avatars, a digital representation of an individual in either human or non-human form. These avatars are known as residents, who have friends and live in communities. As of 2007 there were more than 100 virtual worlds on the Internet (Barnes, 2007), taking various forms and with different purposes. Some virtual worlds such as World of Warcraft (WoW) are gaming societies. Players work in teams and develop strategies for combat with other groups. Other virtual worlds are built with the intention to resemble the physical world, i.e. highly immersive and interactive. Second Life, reportedly inspired by the 1992

novel Snow Crash, is the most popular and fastest-growing virtual world in this category and is said to be "as complex as the real world" (Rosedale, 2007).

Commerce is a substantial building block and catalyst of human activities in these virtual worlds. Buying and selling in virtual currency is very common and highly encouraged. In the third quarter of 2008 in Second Life, resident-to-resident transactions reached US$102 million[1]. More importantly, Second Life is a user-created community. Given the ability to build content in virtual worlds, people own the intellectual property of the created content and can give away, sell, or trade it with any other resident. Often, people collaborate with each other in teams on creations and work, play, and live their virtual lives. The Internet makes it possible for people to meet and work without the restraint of their physical locations. Collaboration, together with community and commerce, serves as the key element supporting virtual world societies.

But despite their technological trappings, these societies are made up of humans, who bring their virtues and flaws with them. The question of how to order a virtual society is in many respects similar to its physical-world equivalent. This topic has never been explored in depth in the information-systems literature. Given the popularity of virtual worlds and their promising role in practice, it is critical to understand the mechanisms of these self-sustaining societies. We believe that the study of governance in physical space can benefit from thinking about how it occurs in virtual space, and vice versa. Taking an economic perspective, in this paper we focus on one particular question – that of the proper tradeoff between order and creative freedom. We begin by setting out the key issues in Sections 2-4 before investigating in Sections 5-8 the ways in which governance in virtual space is likely to be different. We end by speculating on the likely effect on politics in physical space of the lessons learned in virtual space.

ORDER AND DISORDER

The question of the proper balance of order and liberty is an ancient one. Hobbes depicted the state of nature absent government as a war of all against all, and erred on the side of order by arguing that the state must be given absolute power to maintain it. For others, such as Locke (1986) or Bastiat (1996), the state itself is not to be trusted with excessive power, because that power will be used in destructive ways. It is possible if not inevitable that even well-intentioned rules will create unintended consequences that the rule-drafters did not predict, which induces the rulemakers to draft ever-more complicated rules in a futile attempt to achieve the desired outcome, at tremendous consequence to both individual autonomy and social viability. The source of this problem, as the economist Friedrich von Hayek (1994) noted, is that planners know so little about the details of the world they govern that their clumsy rules inevitably cause people to react in unexpected ways, frustrating the planners' goals. The need to conform to or the cost of evading the planners' rules means that creative activity by individuals in possession of knowledge about particular opportunities, knowledge that is invisible to the planner, is stifled. In the limit, this ever-increasing control culminates in the catastrophe of totalitarianism. Thus, while a Hobbes might assert the need for a powerful state to prevent predatory behavior, a Hayek would emphasize the destructive effects of state control on individual freedom and creativity. There is therefore a compelling tradeoff between the order paradoxically necessary to enable creativity and the power that destroys it.

This tradeoff exists within the specific realm of economic creativity as well. On one hand an agent needs the freedom to experiment – to create a new business (or other social experiment) without restraint[2]. A controlling authority, even a well-intentioned one, may impose so many rules on starting entrepreneurial ventures, and on how they are run once they are established, that business costs will be cripplingly high. Fewer activities, even potentially promising ones, are undertaken, and society is poorer and less dynamic. On the other hand, the entrepreneur requires enforced order to a degree – his property rights must be protected, she must have a court system so that the contracts she enters into can be enforced, etc. He may even benefit if the government enforces various kinds of protections against unintentional harm, so that his customers have the confidence to do business with him.

PRODUCTION AND DESTRUCTION

These are the problems that governments in physical space face all the time. And in virtual worlds they are fundamentally the same, though different in some of the particulars. Some virtual worlds such as World of Warcraft and the Sims are purely gaming environments, while others, such as Second Life and Active Worlds, are developed for entertainment and commercial purposes (virtual commerce or virtual business). We focus here on these latter types of societies.

Such virtual worlds, which are as full of commercial activity as any physical society, allow users considerably more creative freedom than games. There are no pre-plotted scenarios, avatars do not normally die or lose their lives in the game, and most importantly, these virtual worlds allow creation of content by their residents, who own the intellectual property rights of the

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[1] Statistics were obtained from http://secondlife.com/whatis/economy_stats.php on January 6, 2009.
[2] A "social experiment" is any commercial or non-commercial challenge to existing practices and beliefs.

created content. They are worlds in which individuals choose their pattern of interaction, with (unlike physical space) few institutional and geographic constraints written into the code by the worlds' creators. Like human society in physical space, such worlds are unpredictable and constantly evolving – they are whatever the users collectively build. For instance, in Second Life, all content is created by its users except for some standard objects provided in the default library repository of "structures." The ability to create in this way in virtual worlds, and the value such creativity has to users, is the fundamental reason why governance, which can excessively or insufficiently restrict individual creativity, is a balancing act. In virtual worlds, too little creativity makes a world uninteresting and therefore unprofitable, while too much makes it unpleasant or dangerous to the avatars who use it.

It is useful to distinguish between two kinds of activity – productive and destructive. Productive activity, through voluntary cooperation with other agents, leaves both better off – in physical space, such profit or not-for-profit activities as opening and operating businesses, or creating new cooperative social institutions such as a Boy Scout troop or a bowling league. Destructive activity leaves at least one participant worse off. And there are two varieties of destructive behavior – intentional and unintentional. Intentionally destructive (ID) behavior has the goal of forcibly limiting others' options, often by trying to seize their wealth – robbery, war, lobbying the government for special benefits unwillingly or unwittingly funded by other taxpayers, etc. Unintentionally destructive (UD) activities make someone worse off if certain contingencies happen, even though a seller may have (perhaps unreasonably) expected they would not. For example, in the physical world, selling medicine the seller knows to be ineffective but claims is safe is ID, selling food with ingredients purchased from the lowest-cost supplier despite being subject to poor quality control may not be intentionally so, although from the buyer's point of view the effects are the same. Similarly, ID and UD activities are seen in virtual worlds. Examples of destructive behavior there include a "griefer" assaulting another avatar (a concept clearly analogous to physical-world assault) or the coding of malicious scripts into seemingly benign objects such as a bouquet of roses. On the other hand, virtual banks may fail, taking the savings of participants with them, a form of UD behavior – the bank was not founded with the intent of destroying savers' deposits. This exact phenomenon led to a decision by Linden Labs in January 2008 to prohibit any business from offering "interest or any direct return on an investment." The trick for the designer of a virtual world is how to maximize the welfare of its residents knowing that some residents will engage in either variety of destructive behavior.

MODELING THE ORDER-CREATIVITY TRADEOFF

A way of thinking about the problem is to imagine first that a (physical or virtual) world's governing authority has the choice of two regulatory regimes, High or Low. In a Low regulatory regime there are no limits on individual freedom to carry out various activities, while in a High regulatory regime many activities are prohibited in the name of stability. The world has two agents, who have the choice of devoting their resources to constructive or destructive activity (intentionally or unintentionally). The curves AA' and BB' in Figures 1 and 2 represent two levels of *potential* income for each actor. ("Income" is used in its broadest economic sense – not just the proceeds of salaried labor, but the returns to providing any good or service that is valuable to someone else.) The curves represent the Pareto frontiers of each economy – the set of all combinations of income x_1 and x_2 that make it impossible to make either actor better off without making the other worse off. A society with no loss due to destructive activity would be on that frontier.

What differentiates AA' and BB' is that in the economy subject to productive possibilities BB' there are more restrictions on the ability of participants to engage in different kinds of activities. In the economy with potential production BB' actors are free, for example, to start virtual banks without obtaining a license from the world's authorities (or without being required to participate in a mandatory deposit-insurance program, the analogue of the Federal Deposit Insurance Corporation in physical space), or in physical space to use ingredients that have not passed government safety inspections, etc. If in a virtual world the banks are solvent or a partner's code is non-malicious, or if in a physical world the food ingredients are safe, then actual income will be somewhere along AA', which clearly exceeds any possible outcome along BB', in which various regulations of individual creative freedom do exist.

But potential income is not the same as actual income. Potential income is eroded by both types of destructive behavior. The actual outcome will be below the frontiers, at point *a* (with incomes x_1^A and x_2^A) in the High world and point *b* (with incomes x_1^B and x_2^B) in the Low one.   A less regulated economy thus raises potential income but may or may not raise actual income for each actor. While AA' and BB' thus represent the set of potential incomes for each agent, i.e., the set of possible outcomes if there is no destructive activity, the distances between *a* and *b* and AA' and BB', respectively, represent the loss of income due to destructive activity.

In Figure 1, actual income in the Low world at *a* is higher for both agents than at *b* in the High world. But in Figure 2 the losses from destructive activity are so great without high regulation that the actual income for each party in that world is quite close to the origin, and considerably worse than the outcome with a High regime. In this case substantial limits on social experimentation are justified despite their negative effects on potential income. The simple model illustrates the classic

argument between those who believe in conserving traditional cultural patterns and those who believe in changing them, or at least allowing them to be changed, in the pursuit of progress[3].
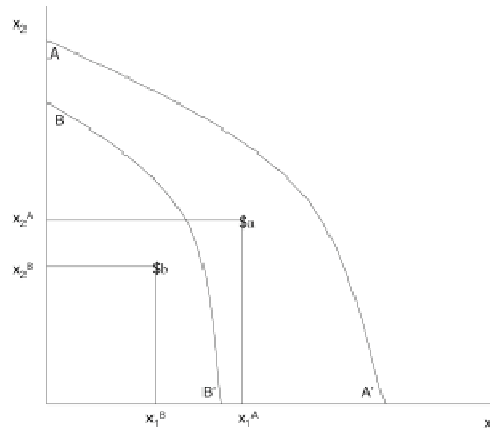

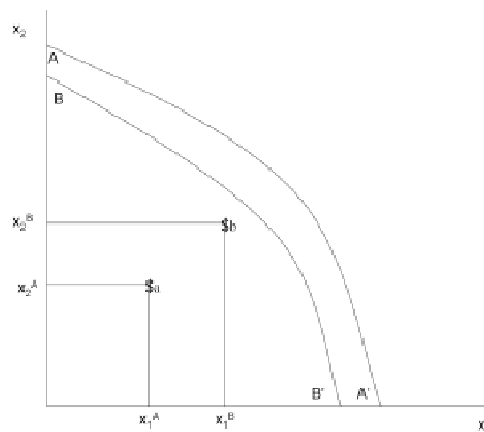**Figure 1. A world where more freedom is preferable.**

Figure 2. A world where less freedom is preferable.

INTENTIONALLY DESTRUCTIVE (ID) BEHAVIOR

The question of interest becomes whether virtual worlds, compared to the physical one, are better served by a Low or High regime. There is no way to answer for certain, but the model suggests some guiding principles. First, ID activity should generally be policed to the extent possible. All ID activity moves the participants in any virtual world away from the Pareto frontier. It is thus unsurprising that virtual worlds generally police purely predatory activity to the extent the technology allows.[4] So-called "griefers" mimic physical-world vandalism, assault and homicide, and (also in imitation of physical-world behavior) frequently do it through organized gangs, with command structures, division of labor and meticulous planning. Their efforts are often profoundly resented by other virtual-world users. This is why firms such as Linden Labs take them so seriously. (Dibbell (2008) has an account of the constant war between griefers, their victims, and the owners of virtual worlds.)

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[3]. For a useful more recent analysis of this problem, and the implications it has for governance, see Raeder (1997).

[4] An exception is environments where players take pleasure in defending themselves against predatory behavior, as in many network gaming worlds.

Constant vigilance against such actions will be a requirement for the success of virtual worlds, all the more so because of the ease with which people can exit virtual as opposed to physical worlds. While a resident of a country in physical space may be threatened by widespread violence, if so her options are primarily limited to self-defense rather than migration. She may hire security guards or place defense mechanisms in her home, but the high degree of society-specific investments she has made in herself (mastering the local language rather than a foreign one, understanding local business culture but not that of a foreign land) combined with the cost of uprooting her household and moving to a foreign land make migration comparatively difficult. Movement from one virtual world plagued by ID behavior to another where it is much better controlled is, in contrast, a relatively simple act. The control of ID behavior is likely to be a key requirement of successful virtual worlds. The user who in one society must constantly defend his avatar or island is likely to strongly prefer the world where the world's creator instead does this job for him, just as individuals in physical space prefer societies with law and order to those where they must rely primarily on themselves for defense.

UNINTENTIONALLY DESTRUCTIVE (UD) BEHAVIOR AND THE VALUE OF EXPERIENTIAL VARIETY

The challenge arises with UD behavior. Should the attitude of the owners of a virtual world, absent the intention to defraud (fraud being ID behavior), be one of *caveat emptor*? Or do they maximize the freedom to experiment by their participants, even at the cost of a great deal of UD activity?

An answer to this question is suggested by the role of variety in virtual worlds. We believe that the primary attraction of virtual worlds for the consumer is their astonishing variety and creativity. Variety in physical space is valuable to consumers, though only up to a point. Consumers like to have more kinds of cars to choose from, but too many choices can become paralyzing, as recent research suggests (Botti and Iyengar, 2006). But in virtual worlds diversity of experience is often the goal itself. The proper comparison in virtual-world design is not to a consumer having difficulty choosing from among several dozen different kinds of toothpaste, but to a person who enjoys traveling and wants to visit as many countries as possible.

The role of diversity in virtual worlds has been explored before. Castronova (2006) invokes the economic model of club goods to describe virtual worlds. A club good is a good that is public, in that benefits can be provided simultaneously to many members, but is also subject to crowding costs when too many people use it simultaneously. More participants can be better for the user, because more variety makes the product more enjoyable, but too many participants make the club undesirable, for search-cost (it is too difficult to find a good trading partner) or infrastructure-cost reasons. A country club with too few members is one where opportunities to socialize are limited, but a club with too many members is one where it is difficult to reserve time on the golf course, because building enough courses to accommodate so many users with reasonable waiting times would be prohibitively expensive. The former effects are known as network effects, in which the bigger the network of participants, the greater the opportunity for valuable exchange and interaction. The latter effects are crowding costs, the difficulties that arise, either from search costs or overuse of the club's resources, from too many members. Castronova argues that as the number of participants increases from zero, synthetic worlds benefit from having more players for a time, but crowding costs eventually mean that adding players makes the world less desirable. Note that the crowding costs are not simply the claim on computer time from more users, which can be addressed by the purchase of more processing power and memory, but the actual occupation of virtual space by avatars – the problem, to borrow from the baseball player Yogi Berra's famous remark, of the island that is so crowded that no one goes there anymore.

But we believe that the worlds under study here the network effect will dominate. While games built around specific achievements and experiences – combat games, for example – may quickly be subject to crowding, games built around social interaction are much less so. For such worlds the variety of potential experiences cannot help but make the experience more attractive, subject to two qualifications. First, the interactions must be primarily productive rather than destructive. Second, there must be a technology making it easy to seek out new experiences and to store and retrieve enjoyable ones. If these conditions are met, interaction in a virtual world is not like consumption of such physical objects as cars or food, where decisions are often driven either by a desire for durability or by habit. While an observer just arriving from another planet might marvel at the dozens of breakfast cereals that the consumer in a typical supermarket has to choose from, the average consumer chooses relatively few of them over time. In part this is a function of the quality provided by known brands – a consumer may not wish to risk low quality from a producer he does not know and thus continues to consume the same brand rather than be adventurous and try another. In addition, many physical products are not bought often enough for variety to be a compelling trait compared to reliability. But in a virtual world like Second Life, visiting many different islands adds to the attractiveness of the experience.

Variety is costly to manufacture, but this effect is much more dramatic in physical than in virtual spaced. Often producing new varieties of physical-world products is costly, requiring a multitude of resources unnecessary in the virtual world, such as electric power, manufacturing equipment, advertising space, etc. These resources are much more meaningfully scarce than

the key ingredient in virtual worlds, which is human creativity.[5] Recalling that ID behavior, no matter how creative, should always be controlled, what makes UD behavior problematic is that competition is relatively ineffective as a remedy. But because of the ease of producing variety, competition is more powerful in virtual space than in physical, and thus it is more likely that the losses to UD behavior in a Low world will be outweighed by the much greater potential income. Part of the reason that a bank failure is more problematic in physical than virtual space is that there are relatively few banks in the former, because banks are difficult to start there. Banks in physical space are less damaged by this constraint, and the fact that it is easier to start one suggests erring on the side of creativity rather than regulation. It is true that Linden Labs recently took the extreme step of banning such financial institutions, but we wonder whether such a response is excessive. This presumption in favor of creativity is all the more true if (as seems likely) people in virtual space develop systems for rating the quality of various services (e.g., banks) offered there.

This effect is even more enhanced by the non-arbitrary dictatorship that is likely to prevail in most virtual worlds. In physical space, governance occurs through both more dictatorial and more consensual systems. It is not obvious that a non-consensual ruler, e.g. a hereditary monarch rather than an elected president, is intrinsically hostile to human happiness. The key issue is not the fact that a dictator is a dictator, but what it is he dictates. If rule is by ironclad custom or otherwise made predictable and non-arbitrary, citizens may still be free to pursue their interests. Dictatorial rule that nonetheless left substantial room for individual autonomy within expansive limits, such as took place in nineteenth-century Austria-Hungary or in British-ruled East Asia (Sowell, 1994), might be preferable to democratic societies where the rules – who is permitted to do what, what government services are provided, and who pays for them – oscillate wildly from one government to the next. And virtual worlds are dictatorships, but profit-maximizing ones. The owners set the rules for interaction and social experimentation, but everyone knows what the rules are, and knows they are likely to be stable, because ownership of the rulemaking power will not change much, and because the ruler's goals – profit maximization – are transparent. Political instability – that is, instability in what the rules for social experimentation and interaction are – is a major deterrent to creative activity. Worlds run strictly for profit may have rules that differ substantially from those in physical space, but they will nonetheless be stable, and hence will lend themselves to more creative experimentation.

In short, in virtual space both demand and supply favor the creation of variety. Less regulation of activity that might be UD allows for more activity that will in the end be constructive, while the losses to UD activities are also minimized relative to physical space by the features of virtual space.

AN EXAMPLE OF CREATIVITY IN VIRTUAL SPACE – INTELLECTUAL-PROPERTY RULES

Some confirmation of the tilt toward creativity and against restricting it can be found in the intellectual-property rules of the virtual world Second Life. Note first that intellectual-property protection, particularly copyrights and patents – is in physical space a tradeoff. The granting of a copyright or patent is legal recognition of a monopoly right. Monopolies charge higher prices and produce less compared to a competitive market, and so this monopoly grant is costly. However, if innovations are costly to create but cheap to copy once someone else has incurred this cost, the incentive to create without intellectual-property protection is severely diminished. To see how these issues are handled in virtual space, consider excerpts below from the user agreement of Second Life[6]:

"Users of the Service can create Content on Linden Lab's servers in various forms. Linden Lab acknowledges and agrees that, subject to the terms and conditions of this Agreement, you will retain any and all applicable copyright and other intellectual property rights with respect to any Content you create using the Service, to the extent you have such rights under applicable law.

Notwithstanding the foregoing, you understand and agree that by submitting your Content to any area of the service, you automatically grant (and you represent and warrant that you have the right to grant) to Linden Lab: (a) a royalty-free, worldwide, fully paid-up, perpetual, irrevocable, non-exclusive right and license to (i) use, reproduce and distribute your Content within the Service as permitted by you through your interactions on the Service, and (ii) use and reproduce (and to

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[5] Creativity is not the only resource required; others include "land" sold by the world's owners, and the time of agents hired as "employees" on the land to make it more attractive. But these constraints are often not as severe as those of the physical world – those resulting from a disastrous harvest or pressure on physical land, for example. Indeed, while physical land is finite, and its geographic relation to other physical land is sometimes unalterable, virtual land can be created at will without such geographic constraints. Once a social experimenter has created something, its only opportunity cost is a trivial one, computer storage space and maintenance. It is true that the ways in which creativity can be deployed are limited by the virtual world's coding, and whatever restraints the owners choose to write into it. But this constraint is one that can be easily worked around in a world that has the emphasis on the variety we believe is necessary. It is similar to the constraint that a novelist can only write in his native language – binding, but still leaving a great deal of room for experimentation.
[6] Obtained from http://secondlife.com/corporate/tos.php, accessed on January 7, 2009.

authorize third parties to use and reproduce) any of your Content in any or all media for marketing and/or promotional purposes in connection with the Service.

...

You also understand and agree that by submitting your Content to any area of the Service, you automatically grant (or you warrant that the owner of such Content has expressly granted) to Linden Lab and to all other users of the Service a non-exclusive, worldwide, fully paid-up, transferable, irrevocable, royalty-free and perpetual License, under any and all patent rights you may have or obtain with respect to your Content, to use your Content for all purposes within the Service. You further agree that you will not make any claims against Linden Lab or against other users of the Service based on any allegations that any activities by either of the foregoing within the Service infringe your (or anyone else's) patent rights."

The first feature of the agreement to note is that in any virtual world, physical-world copyright law does not cease to hold. Anyone who writes a song and incorporates it onto her island in a virtual world still holds all legal rights to the song that she possesses in physical space in her country. (Whether copyright can be meaningfully enforced in virtual space, particularly given that companies may incorporate anywhere and the identities of those who appropriate copyrighted material are harder to trace, is a separate question.)

But apart from these exceptions, Second Life allows any resident to click on an object and learn the rules on distribution and modification that the creator has attached to it. That the creator can define such rights so easily is the key point. Avatars in Second Life have the ability to create almost any digital content – a table, a tree, a store, or even a whole town or city. Such content is owned by the creators, who can buy, sell, or give it away. For instance, the popularity of fashions for avatars has led many people to open fashion stores in Second Life. Clothes, accessories, and even body shapes and skins are created and put on sale by the owners. The incentive to create such things is diminished if the owner cannot control re-use or modification. (Such control can be motivated by emotional satisfaction as much as a desire to make money.)

But Second Life uses technology to vest the creator with a near-absolute intellectual-property right that the physical world can only crudely duplicate through such tactics as copyrights and patents. Physical-world enforcement of intellectual-property rights generally involves uncertainty over such questions as whether an invention is truly novel, or whether fair use should govern the reproduction of a book excerpt. Such questions often create expensive litigation, and new technology generates new issues that may take years to resolve in the courts, creating delay that may retard innovation further. But Linden Labs has used technology to create a near-perfect property right for objects, songs, etc., with the only limitation being the ability of other residents to circumvent the Second Life code that allows creators to set the rules for use of their creations. This means that Linden Labs itself enforces the property right, which is defined in absolute terms, much as rights to, say, a television set are defined and enforced in physical space. Intellectual property in Second Life (with the exception of the prohibition on taking creations out of Second Life into another virtual world) duplicates the theoretical ideal of economic models of intellectual property, and thus maximizes the creativity that physical-world laws can only imperfectly promote. This is unsurprising, given that the monopoly costs of intellectual-property rights are lower in an environment such as Second Life, assuming that consumers desire variety and that the creation of variety is easy.

TRANSPARENCY

UD activities are still costly, although they are a negative side effect of an activity that may be on balance beneficial. How are they to be policed? Transparency is the key requirement. Transparency here refers to the ease with which users can obtain information, financial and otherwise, about the partners they contemplate doing business with. In physical space this is accomplished through both public and private means. The former include such reporting and monitoring agencies as the Securities and Exchange Commission, as well as the policing of fraud. The latter includes such devices as standards set by the accounting industry and groups such as Consumers Union, which test products for reliability. Virtual worlds should make it easy for any user to access the history and reputation of any commercial enterprise, perhaps through such tactics as establishing (or importing from physical space) accounting standards that its enterprises must adhere to and make readily accessible, or allowing (and making easy) the creation of ratings from other enterprise customers. Since users will be able to create on their own a wide variety of assessment or vetting methods for virtual businesses, the world's owners need only to not prohibit the creation and use of such methods. We predict that the development of such ratings systems will become a common feature of virtual worlds, and perhaps even a substantial money-making opportunity in its own right.

LESSONS FOR PHYSICAL SPACE

The key features of virtual space – the ease of creation of new experiences in a given world and of the creation of new competing societies – will never be perfectly duplicated in physical space. But over time the borders between societies in physical space – which, unlike those in virtual space, have never been airtight – have become ever-more permeable.

Migration barriers – transportation costs, cultural and linguistic obstacles, etc. – will continue to fall. To some extent, this will fuel the rise of the consumer state – in which a society is not defined by a common ideal of citizenship, but merely access to a particular set of social services and set of laws that is different from that in other countries. Migrants will more and more choose their societies, and will choose them not on the basis of loyalty to a culture but of the extent to which they prefer its combination of public services, taxation, legal code, etc.

If this is true, then virtual worlds provide some hint of what this is likely to mean for governance in physical space. We believe that if global migration spurs a transition to the consumer state, physical governments, despite their lack of "ownership" analogous to the proprietors of virtual worlds, will more and more support social experimentation, just as virtual worlds do. Intellectual-property laws will be loosened, regulations on financial experimentation and business flexibility will (further) decline, and requirements for citizenship will be relaxed. Whether we are right or not, it is clear that virtual space is useful as a place to observe what is likely, to a lesser extent, to happen in physical space. Will banking regulations increase or decrease? Will citizens demand more protection against crime, even at the cost of a loss of civil liberties, or the reverse?[7]

Finally, it is possible that in some (but not all) instances, governments that are slow to conform to the wishes of citizens who demand greater freedom in social experimentation may find that some activities move to virtual space. Objections, e.g., to gambling on moral grounds, even if effectively enforced in physical space, may simply chase gamblers into virtual worlds, where the infinite creativity of entrepreneurs will always keep them one step ahead of regulators. (Here we do not mean just Internet gambling, the regulation of which has frustrated some governments, but the conversion of gambling itself into an activity that takes place in virtual worlds.) Controls on currency movements or frustration with taxation may cause the movement of more income-generating activities into virtual worlds, where it will be less subject to regulation by national physical governments. As virtual worlds become more and more like physical space – three-dimensional, more attuned to the human senses, more graphically complex, etc. – this trend may accelerate. There are obviously limits to this process, but they are likely to be less binding than many believe. Physical food and clothing cannot ever be created in virtual space, but the income to pay for them, and the medium of exchange in which trade is carried out, can be generated there, as long as people can find a virtual world in which the exchange of virtual for physical-world money is easy. (Perhaps the offense of "digital money laundering" will soon enter physical-world criminal codes, although this will ultimately be difficult to enforce.) This, however, may be an issue to watch out for in the medium term. In the shorter run, virtual space will be the place to go to forecast political pressures soon to face many physical-world societies.

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[7] Admittedly, the relevance of virtual-world trends for physical-world governance on civil-liberties question is limited by the absence, in virtual space, of a frequently asserted reason for limiting such rights, the prospect of war with another society. In virtual space there are no equivalents of invasions from another virtual world, although as noted above there is the equivalent of crime.