The Economics of Pornography

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I. Introduction

The effect of pornography on societal wellbeing depends on two areas well-suited to economic analysis: one, how it is distributed and consumed; and two, the externalities associated with these processes. In this paper, I attempt to make an initial contribution to the study of these areas by drawing on many underutilized data sources on a relatively new and significant branch of pornography: internet pornography. First, I explain the main mechanisms of pornography distribution on the internet. Next, I demonstrate that although the adult industry's own estimate of $2.5 billion in internet pornography revenues per year is often considered an exaggeration, it corresponds well with independent data sources and is in fact a significant underestimate of total pornography consumption: between 80% and 90% of internet pornography consumers seem to consume primarily free internet pornography. My analysis suggests that there is not yet any good statistical evidence of positive or negative externalities associated with the consumption of pornography, but that several promising techniques exist for improving this research. However, the relatively large market for help with overcoming pornography addiction strongly suggests that there are large personal costs to pornography consumption, which opens up the possibility of welfare-improving government regulation. I conclude this study by considering the possibility of regulation of pornography in light of the information above. I suggest that eliminating copyright will only succeed in limiting pornography consumption under certain conditions, but that regulation of Internet Service Providers could quickly reduce internet pornography consumption, especially the vast majority of such consumption that occurs for free.

II. Distribution and Consumption of Internet Pornography

How is internet pornography distributed?

Internet pornography does not differ substantially from other pornography in the manner of production, but rather in the manner of distribution. Today, with high speed internet connections quite common across the United States, internet pornography consists of (sometimes quite large) digital files containing videos or photographs, distributed to consumers through at least 40,634 websites around the world (Tancer, 2008).[1] These videos and photographs are sometimes

[1] The National Academy of Sciences study cites 400,000 pornography websites worldwide as of January 2001, information that was obtained from an interview with Bill Johnson, the director of Marketing of Flying Crododile, Inc, operator of SexTracker.com (Thornburgh and Lin, 2002). This number is older than the number in Bill Tancer's book, and furthermore, SexTracker does not seem to be a data analysis company, and therefore it may not have access to data from actual ISPs, but rather may only be using data from the adult websites that register with SexTracker. This would imply that the estimate by Johnson would probably be an extrapolation based on their own subscribers. Therefore, the data from actual ISPs, analyzed by Bill Tancer in (Tancer, 2008), is likely to result in a more accurate list of the total number of adult websites on the internet. Nevertheless, it must be considered a lower bound, since it is certainly possible that the ISPs that subscribe to Hitwise have customers who do not make use of

identical to those that can be purchased through pornographic print media or pornographic video vendors. In other cases, these videos and photographs are essentially only distributed through the internet.

There are several ways to distribute this content on the internet. Pornographic photographs or videos are stored on servers, often in the United States. Pornographic websites (e.g., .thisisapornographywebsite.com) contain links to this content. When a consumer searches for pornography on the internet, he or she first finds the address of a likely website (often through a search engine such as www.google.com), and then attempts to view and/or download the material linked to on that site. Viewing of photographs is typically flexible: they can either be downloaded and stored on the consumer's computer, or viewed directly from the website without downloading. Some pornographic videos are stored on websites in a way that allows for them to be downloaded and stored on the consumer's own computer. But other videos are presented in a "streaming" format that allows the video to be viewed on the consumer's screen, while preventing him or her from downloading the file containing the video. Finally, some streaming videos claim to be live video feeds from a "webcam" that is currently filming pornographic activity.

The websites that distribute this pornography may roughly be divided into three categories. First, there are pay sites that allow users to consume pornographic content for a fee, often paid by credit card over the internet. Second, there are free sites which allow consumers to view either samples of pornographic material or the full photographs and videos without paying. Third, there are pornographic videos, etc, uploaded to the various versions of Youtube that cater to pornography consumers.

The pay sites usually charge anywhere from $10 to $100 per month for access (Caslon, 2008). Some of these sites are connected with massive webs of gateway sites. A user who stumbles upon one of these gateway sites will be lead by a series of links to the main site, where they will have the opportunity to pay for pornographic content (Edelman, 2003). The free sites may be primarily for-profit ventures, in which case they will typically be supported by advertising, or simply personal home pages that contain (sometimes illegally copied) pornographic content. The pornographic versions of Youtube are for-profit ventures, and the pornographic content on them is sometimes produced by amateurs. Thus, there are several revenue models for internet pornography: the end-user model (in which pay sites charge individual customers for personal access to pornography), the advertiser model (in which websites distributing pornography support themselves by selling advertising space, sometimes to other pornography sites), and the model of various free pornography sites that may not be profitably supported by either end-user subscriptions or advertising.

How much web pornography is being consumed for payment?

Before one can analyze the likely effects of pornography distribution and consumption on society, it is important to get an estimate of the total amount of revenues involved in this industry. The adult industry publication AVN reports that total internet pornography revenues

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the gamut of adult websites, and furthermore it is possible that Hitwise does not make use of the full adult consumption data in the information gleaned from its ISP subscribers.

for 2005 were about $2.5 billion (Johnston, 2007). Although many mainstream news sources take AVN's numbers at face value, the AVN revenues are frequently cited as gross overestimates. In fact, some sources claim that the pornography industry has enough of an incentive to exaggerate revenues that their numbers simply cannot be trusted (Ackman, 2001). In light of this, it will be necessary to evaluate the reliability of the industry revenue reports using independent data sources. If I can obtain reliable numbers on the size of this industry, then I will already have made progress in understanding it's effects – if I cannot obtain reliable numbers, then there is little hope for assessing its impacts.

First, using information from the U.S. Census bureau on 2005 e-commerce revenues by industry sector, I can see that the AVN report of $2.5 billion in internet pornography revenues amounts to 18% of the total e-commerce revenues earned from publishing, arts, entertainment, and recreation services, 2.5% of the total e-commerce revenues earned from all business-to-consumer "service" industries combined, and 1.3% of the total e-commerce revenues earned from all business-to-consumer industries combined (U.S. Census, 2007), (U.S. Census, 2008). These percentages do not seem too large.

Furthermore, I can use a trick to jointly determine the reliability of both the AVN revenue numbers and the reliability of the Pew Internet and American Life (PIAL) Project's internet pornography consumption numbers. According to the PIAL 2005 May tracking poll, 66% of Americans aged 18 or over used the internet, and 11.25% of these accessed internet pornography (for a total of about 16.7 million internet pornography consumers). Using May 2004 tracking poll data, I see that 20% of internet pornography consumers admit to paying for any online content – combining this percentage with the May 2005 internet pornography consumption, I obtain about 3.3 million paying internet pornography consumers in 2005. These numbers could potentially be an underestimate, because of the fear of revealing oneself as an internet pornography user during a telephone survey (Tancer, 2008). But I can divide the revenue estimate by the pornography consumer estimate to evaluate whether either of them seems to be biased in the directions we fear. If the numerator is really a gross overestimate (i.e., an order of magnitude too high) and the denominator is really a gross underestimate (i.e., and order of magnitude too low), then the resulting fraction should be at least two orders of magnitude larger than reasonable.

So I divide the $2.5 billion by the total number of paying pornography customers from the Pew data (about 3.3 million), to get $737 per paying customer per year. This works out to each paying customer paying $61 per month. Caslon analytics reports that pay sites charge $10 to $100 per month (and in 2007, Vivid.com charged $30 per month). So $61 per month per paying customer is fairly reasonable. Thus, the $2.5 billion in annual internet pornography revenue seems reasonable, as does the 3.3 million internet pornography paying customers. Since this was calculated using the Pew pornography consumption data this also indirectly suggests that Pew's 11% to 15% rate of total internet pornography consumption is also not considerably too low.[2]

[2] Some examples might make this logic more clear. Suppose that the industry revenue numbers were correct, but that the Pew data on paying customers was an underestimate by a factor of 10 (this could occur if twice as many consumers actually view pornography as admitted it in the surveys, and if all of these consumers paid for pornography consumption, rather than only 20%. This would result in $6.14 of pornography consumption per month. This is outside the range of monthly rates reported by Caslon analytics, although it could be obtained if

How much web pornography is being consumed for free?

The numbers above reveal a potentially important fact about internet pornography consumption. Of the 14% of internet users who admitted to consuming internet pornography during the May 2004 Pew survey, only 20% of these said that they pay for online content. This implies that the majority of them were consuming pornography for free. This implication is backed up by the February 2007 Pew survey. In this survey, 4.5% of internet users admitted to watching adult videos from the internet. But only 10% of these pornographic video consumers said that they ever pay to access online video. Finally, Bill Tancer reports that "hits" on internet pornography websites are broadly distributed, more so than in internet retail (Tancer 2008).[3] But Caslon Analytics says that the industry is a winner takes all model in which a few firms bring in most of the revenue. These two facts can be reconciled if a large number of the hits on pornography sites are users downloading free material.[4] In short, the Pew data and other evidence suggest that a large number of internet pornography consumers – probably the vast majority – are usually consuming free internet pornography. This free material consists of samples of the pay material, illegally copied versions of the pay material, and amateur material.

Who is consuming internet pornography?

I argued above that the total number of pornography consumers and the total dollars of pornography revenues could both be estimated fairly reliably by combining independent data sources, in spite of the potential for aggregate measurement error. In order to further analyze the demographic characteristics of pornography consumers, I would have to evaluate whether measurement error in this pornography usage data is distributed unequally across demographic groupings. For instance, are men more willing to admit the truth about their pornography consumption than women? It is impossible to do justice to this question in this paper, but I can obtain some leverage by once again comparing results across independent sources of data.

There are three main sources of data that I draw upon in this section. One is the General Social Survey (GSS), administered since 1972 across the United States. The second is the Pew Internet and American Life (PIAL) project telephone surveys, which have occurred several times a year since 2001. Third, I draw upon data from Internet Service Providers collated by Bill Tancer of Hitwise and discussed in (Tancer, 2008). Claims about pornography usage that are common within each of these sources (over time) and across each of these sources are less likely to be artifacts of chance or survey methodology.

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people use the cheapest sites and spend half their months not subscribed. But if the revenue numbers were also incorrect by a factor of ten (ten times too large), then this would imply 61 cents spent per month per paying customer. This seems much too small. Thus, it seems likely that it is not the case that both the revenue data and the paid pornography consumption data are severely biased in the directions sometimes feared in the literature on pornography data.

[3] "One of the things that stands out about the distribution of porn sites is just how fractionalized the spread is. The top five hundred sites account for only 56 percent of all visits to the adult category. (In contrast, the top five hundred retail sites account for 76 percent of all retail visits)" (Tancer, 2008).

[4] It is also possible to reconcile these facts by Ben Edelman's observation that there exist some central sites that register innumerable gateway sites that link to the central site (Edelman, 2003).

Table 1 collects pornography usage data from the May 2004 PIAL survey and the GSS. It is clear that in both surveys, men more frequently claim to be pornography users than women. Furthermore the young are more likely than the old, and the married and widowed are less likely than people of other marital status. Each of these patterns is largely confirmed by pornography data from four other PIAL surveys (dating from February 2001 through May 2005). Furthermore, the data from Internet Service Providers reported in (Tancer, 2008), which may be less likely to have differential measurement error across demographic groups, confirms that men are more likely to use internet pornography than women. The GSS also contains data about religion, and Table 1 shows that admitted pornography consumption in the GSS varies considerably across religious groups.

All three data sources are consistent with a decline over the last several years in the proportion of people consuming pornography. In Figure 1a, I show the proportion of respondents who claim to have seen an x-rated movie during the past year, measured since 1973 by the GSS. It is clear that there has been a small decrease between 2004 and 2006. In Figure 2, I show the proportion of respondents who report using the internet to visit adult websites, measured since Feb 2001 by the PIAL. The PIAL data likewise show a small decrease from May 2004 to May 2005. Finally, in Figure 3, I replicate the figure in (Tancer, 2008) showing the market share of visits to adult websites from September 2005 to September 2007. It is clear that the adult website market share has declined from 17 percent of all visits to websites in September 2005 to 11 percent by September 2007. This decline in market share is consistent with constant consumption of pornography and an increase in the consumption of other services, but it is also consistent with a continued decline in pornography consumption.

Nevertheless, the GSS data in Figure 1a demonstrates that over the long term, the consumption of pornography has increased since a low point in the late 1970s up until the latest year of 2006. This is even more obvious in Figure 1b, where I restrict the GSS data to men aged 29 or under, where the most recent pornography usage figure in 2006 is 54%, almost twice what it was during the low point in 1978.

Summary facts on pornography distribution and consumption:

There are at least 40,634 websites that distribute pornographic material on the internet. About 11% of all internet visits are to one of these sites. About 14% of the online population in America visits these sites (17 million Americans), spending on average 6.5 minutes per visit.[5] About 80% to 90% of these people only access free pornographic material. This free material consists of samples of the pay material, illegally copied versions of the pay material, and amateur material. The remaining 3 million Americans who pay for internet pornography pay about $60 per month. This generates $2.5 billion in annual revenues for the internet pornography industry, making internet pornography revenues a very small percentage of total e-commerce revenues. While this number is frequently cited as an overestimate, it is reasonable in comparison with independent data sources, and in fact it is a severe underestimate of the total amount of pornography consumption, because of the prevalence of free material. Most of these revenues are apparently earned by a small number of top firms (Caslon, 2008). Most of the consumption, on the other hand, is spread widely across a number of websites, with the top 500 of these 40,000

[5] The minutes per visit number is taken from (Tancer, 2008).

websites earning only 56% of the total traffic. Consumption of pornography is spread unevenly according to gender, age, marital status, and religion, and has no clear relationship with education or income. In spite of a recent decrease in pornography consumption, as of 2006 the data is consistent with a considerably higher proportion of the population consuming pornography than at the recent low point in the late 1970s, especially among young men.

III. The Effects of Pornography Consumption

Are there positive externalities from consuming pornography?

The most difficult requirement in studying the existence of externalities (positive or negative) to the consumption of pornography is finding some random variation in access to, exposure to, or temptation towards using pornography. Two recent economics papers, one a working paper, and one a published paper, claim to have found such variation.

The first, by Todd Kendall, formerly an assistant professor at Clemson University, uses variation in state internet usage over time to proxy for variation in the "price" of accessing pornography. His first claim is that there exist unobservable reasons why residents in some states had an easier time adopting the internet than those in other states; that these reasons are unrelated to the outcomes that Kendall considers; and that, once a handful of other related variables are controlled for, the remaining variation we see in the speed of internet adoption across states is largely attributable to these reasons. His second claim is that this variation in the speed of internet adoption across states led to variation in the rate of rapes across states. His final claim is that it was internet pornography consumption that caused the link between internet usage and rape.

Each of these claims is difficult to prove empirically, and the fact that Kendall has found some evidence in support of them is impressive. Nevertheless, there remain important concerns about his approach. The first problem is an old one, and therefore a boring one, but that does not make it an irrelevant one: endogeneity. In an ideal experiment (ideal for identification, not ethics), people would be randomly exposed to pornography, and their sexual and criminal behavior would be subsequently observed. In Kendall's natural experiment, random exposure to pornography is replaced with differing rates of usage of the internet, which he believes should create differing rates of access to pornography. Kendall is aware that the differing rates of access to the internet are not necessarily unrelated to differing secular trends in sexual and criminal behavior, including rape. On the contrary, changes in internet usage could be caused by changes in other variables that are related to rape, such as preferences and unobserved demographics. Normally, what a researcher would do in this circumstance is find an "instrument" for internet access: a variable that would lead to random variation in internet usage but that would not directly affect outcome variables such as rape. Kendall could not find such a variable, so he relied on the older technique of simply including controls for whatever potentially related variables he could find. Given the prospect for omitted variable bias here, this is a serious issue.

The second issue is an odd one, and has been raised elsewhere (cite website): Kendall controls simultaneously for changes in the internet usage within states over time, and changes in computer usage within states over time. So the results are driven by states in which internet usage has risen by more or less than would be predicted just by their increase in computer usage. If it is unclear what makes some states have slower increases in internet usage than others do, it is even more unclear what drives some states to experience slower increases in internet usage *relative to their speed of increase in computer usage* than others do. What would make some states have large increases in the number of people with computers but small increases in the number who access the internet? Since we don't know where this variation comes from, there is no clear reason why we should assume that variation in this phenomenon is unrelated to important omitted variables.

The second paper, by Winai Wongsurawat, is entitled "Pornography and Social Ills: Evidence from the Early 1990s," and was published in the Journal of Applied Economics in 2006. Wongsurawat uses variation in availability of post office boxes as an instrument for variation in the "cost" of subscriptions to Penthouse Magazaine. The theory is that, ceteris paribus, greater ease of obtaining a private post office box will make it less likely that other people will notice one's Penthouse consumption, thereby lowering the overall psychological cost of subscribing. In order for this instrument to be valid, it must be the case that it has a statistically significant effect on Penthouse consumption (specifically, the effect of P.O. box availability on subscriptions should be the main mechanism here), and it must also be the case that availability of post office boxes is not related through another mechanism to the outcome of interest (in this case, rapes).

In the previous paper there was no instrument, but in this paper the instrument is not convincing. Wongsurawat demonstrates that in fact P.O. Box availability does not have a strong effect on Penthouse subscriptions, but rather has a borderline-strong effect on subscriptions plus individual (e.g., newsstand) sales. This implies that the main effect of P.O. Box availability is on the individual sales, which strongly suggests the existence of an unmeasured third variable affecting both P.O. Boxes and individual sales. Furthermore, he admits that the F-statistic on the joint significance of the instruments is not quite at the level sometimes used as a rule of thumb for avoiding the weak instrument problem. Finally, Wongsurawat finds that P.O. box availability has a statistically significant and apparently positive effect on Discover Magazine subscriptions. Without running a two-stage least squares regression using Discover Magazine subscriptions as an independent variable, he thus has no way of ruling out that Discover Magazine consumption is what connects P.O. box availability to rapes, rather than Penthouse consumption.

While both (Kendall, 2007) and (Wongsurawat, 2006) point out inadequacies in much of the statistical evidence in favor of negative externalities of consumption of pornography, their own evidence for positive externalities of consumption of pornography is not convincing. In both cases, their results are driven strongly by their proposed techniques for obtaining variation in the "price" of pornography consumption, and in both cases this variation is unlikely to be exogenous. Therefore, their results are not a substantial improvement on the older literature that showed positive effects of pornography consumption on rape.

Nevertheless, there is more that can be done to use statistical evidence to measure the existence of externalities associated with pornography consumption. The first step would be finding a

useful instrument for pornography availability or consumption: one that has a strong and measurable effect on pornography usage, and is also unlikely to have an independent effect on the outcomes of interest. One example of this would be variation in broadband internet availability that comes from a known source. For instance, it seems likely that localities that neighbor other areas that have already had broadband cables laid will be more likely to get broadband access than other similar localities that happen not to have been near such areas. Another example would be using the similarity in take-up rates of technology over time reported in (Stevensen, 2008) as an instrument for internet access. In fact, this approach is being used in ongoing work (Doran and Price, 2008).

What can economic consumption theory tell us about the consumption effects of pornography?

Economic consumption theory is based on the assumption that anything a person chooses to consume while subject to some scarcity constraints will be (subject to those scarcity constraints) the choice that makes that person best off. Under this assumption, it must be the case that those who choose to consume pornography are improving their own well-being by doing so, and that attempts to prevent them from consuming pornography by adding an additional constraint to their decision-making (such as raising the price of pornography or making pornography consumption a punishable offence) would necessarily reduce their well-being. As Samuel Cameron explains in Economics Uncut, "But why, from an economist's point of view should we be spending time trying to define porn in the first place? If individuals are rational utility maximizers, then why do they need to be barred from pornography?" (Cameron, 2006). The answer, that Cameron himself later admits, is that pornography may be addictive, and that the study of addiction in economics leaves open the possibility that it is optimal for the state to attempt to reduce consumption.

In fact, there is a lot of money being made helping people overcome their "sex-addiction," a condition that increasingly refers to the use and abuse of internet pornography (Landau, 2008). There is no money being made helping people with tooth brushing addiction, or kite flying addiction. It is thus very unlikely that consuming pornography has no worse consequences for the person doing the consuming than does brushing teeth or flying kites – otherwise no one would pay psychologists, doctors, and authors to help them overcome what they perceive to be a debilitating personal problem. (Landau, 2008) reports: ""We're seeing it with epidemic proportions now, particularly with regards to cybersex," said Mark Schwartz, psychologist and former director of the Masters and Johnson Institute in St. Louis, Missouri. "There isn't a week that goes by where I don't get two calls" about sex addiction." There are numerous self-help books on breaking pornography addiction, in addition to numerous internet filters designed to prevent temptation. All of this evidence should be sufficient to convince economists that using pornography can result in great costs for the person consuming, and that these costs are high enough that people will pay for such services as PureOnline's $165 counseling session for married men, or Covenent Eyes' $55 per year accountability software.

In short, if standard economic consumption theory claims that a lower bound on the value of a consumption good for a consumer is the price that that consumer is willing to pay for consuming that good, then we are left with a contradiction regarding pornography. It appears that the same

person is willing to spend a positive amount of money to consume pornography and a positive amount of money to be prevented from consuming pornography. The first expense would imply that a constraint to prevent him from consuming pornography would have negative value, but the second expense implies that such a constraint has positive value. Clearly, economists need to make use of various models of addiction to properly understand the effects of pornography consumption.

Summary Facts on the Effects of Pornography Usage:

There is not yet convincing statistical evidence in favor of either positive or negative externalities associated with consumption of pornography. However, there does appear to be a strong incentive to prevent oneself from consuming pornography, and the monetary value of this prevention is possibly much higher than the monetary value attached to the consumption of pornography itself. This suggests that there may be large personal costs of consumption associated with pornography, and opens up the possibility that it may be optimal for the state to use regulation to limit the distribution and consumption of pornography.

IV. Regulation of Pornography Distribution and Consumption

Is it possible to reduce the negative effects of pornography usage through eliminating copyright protection on pornographic material?

In Section II, I explained that between 80% and 90% of the people who consume internet pornography generally consume free content. This content is presumably inferior in quality to the pay content, but nevertheless it is the main source of internet pornography consumption in America. Thus, if we want to know the effects of eliminating copyright on pornography consumption, the most important question is: will the large number of consumers currently accessing free content still be able to do so after elimination of copyright? I will attempt to answer this question below.

This free content is a combination of legally posted content supported by advertising, legally posted content serving as an advertisement (e.g., samples), illegally posted pay content, and amateur content. Only the first two categories could possibly be negatively affected by elimination of copyright: illegally posted material will just become legally posted material, and amateur material will be posted for the same reasons it already has been. I have not found what portion of total free pornography consumption comes from these two sources, but whatever level it is at will be a lower bound for the amount of free pornography consumption that can persist after elimination of copyright.

The revenues that pay for the bandwidth used up in distributing the first two categories of free content will primarily come from end-users (since Caslon Analytics reports that much of the advertising on pornography sites is from other pornography sites). So it remains to find out whether the end-user revenue model can persist after elimination of copyright, whether some

other source of revenue can be found that would pay for the bandwidth, or whether these first two categories of free content will disappear entirely.

A useful way of answering this question is to ask whether there already exists an industry that distributes public domain works and supports itself through its own revenues. The answer is yes. As (Beers, 2006) and (Sloan, 2007) attest, there is money to be made from reworking public domain books and selling them, often over the internet. Furthermore, many major publishers sell large numbers of public domain books. Jane Austen's Pride and Prejudice is in the public domain. A search of "Jane Austen Pride and Prejudice" in the "Books – Literature and Fiction – Classics – British" section of Amazon.com produced 573 results. In addition to all of the older editions no longer available except as used purchases, I counted at least 15 editions currently available as new purchases, including several by major publishing houses. The bestselling Dover thrift edition of three Austen works packaged together has a sales rank of 2,140 out of the total number of books sold on Amazon.com, and according to (Rosenthal, 2008), this implies yearly sales of about 3,300 copies. These works are not being printed and distributed out of charity – it must be the case that the revenues are greater than the costs. Finally, the complete text of Pride and Prejudice is available for free online at (://www.authorama.com/) and at (://www.gutenberg.org/wiki/Main_Page). It is therefore clear that the fact that Pride and Prejudice is in the public domain has not reduced its availability for consumption whatsoever. In fact, it is currently quite cheap to consume Pride and Prejudice, and it would be much more expensive if it was still under copyright (consider, for example, the works of J.K. Rowling).

How can this be? The answer is that publishing houses can make money on public domain works by distinguishing their product from the other versions currently available. Many editions of Pride and Prejudice contain special annotations and essays to make the text more readable and interesting. Some contain illustrations, or are printed or digitally stored in an especially attractive format. This is likely to be what would happen to the internet pornography industry were copyright to be revoked. Some websites would package and organize the pornographic material in a better way than others. They would make an extra effort to ensure that the digital videos and photographs on their site were free of computer viruses. They would develop interfaces that were easier and more pleasant to use. It is likely that their profits would go down. But there would still be profits to be made from high quality distribution. The price would likely decline, and the consumption of pornography would either remain constant or increase.

The same cannot be said for production. In the absence of copyright protection, the service that is being profitably sold is efficient distribution, not quality production. Thus, there would be little incentive to continue to produce works for profit. If the moral costs of producing pornography are high, then eliminating copyright will thus reduce the total social costs of pornography. However, the numbers of consumers of pornography range in the tens of millions. Here is where the main social costs of pornography will be, and elimination of copyright will, in the short term at least, either leave constant or increase that consumption, as the price of consumption decreases. The one silver lining about copyright elimination will be that, as decades pass, the lack of new production will make the older pornographic material seem dated. Few people now consume the pornographic post cards of the late nineteenth century. Thus, after the changes in tastes that occur over generations, it is possible that elimination of copyright will succeed in reducing consumption of pornography.

Is there an easier way to reduce pornography consumption?

It is possible that regulating what information could be transferred by Internet Service Providers (ISPs) would be an effective way to reduce internet pornography. According to (Goldman, 2008), almost 80% of internet users nationwide make use of the top 25 ISPs, and this is an underestimate of the market share of top ISPs because it was not possible to obtain data for several key players. It would thus be relatively simple to prevent large numbers of consumers from accessing internet pornography by regulating the degree to which internet lines can be used to transmit obscene material, and heavily enforcing this regulation for the top 100 ISPs around the country. It is unlikely that the vast majority of internet pornography consumers (especially those who only consume free internet pornography) would be willing to undertake the risk of using a black market ISP just in order to access internet pornography. We already know the 80 to 90 percent of internet pornography consumers who consume free pornography are unwilling to pay rates as low as $10 or $30 per month in order to obtain higher quality pornography from subscription sites. This suggests that these consumers would also be unwilling to pay for an additional blackmarket ISP just for pornography consumption.

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VI. Tables and Figures

Table 1: Who is consuming pornography?

	May 2004 Pew Tracking Survey			General Social Survey	
Characteristics	Percent of sample	Percent who Consume	% who consume and pay	Percent of sample	Percent who Consume
Total:	100%	14%	3%	100%	23%
Sex:					
Male	48%	26%	5%	44%	30%
Female	52%	3%	0%	56%	17%
Age:					
18-29	21%	22%	5%	23%	38%
30-49	42%	13%	2%	39%	26%
50-64	27%	11%	2%	10%	14%
65 +	10%	11%	3%	18%	6%
Marital Status:					
Married	58%	11%	2%	55%	20%
Cohabit	3%	27%	5%	NA	NA
Divorced	11%	16%	4%	12%	25%
Separated	2%	21%	3%	3%	29%
Widowed	4%	4%	2%	10%	7%
Never married	21%	22%	5%	20%	36%
Highest Degree:					
Less than HS	4%	17%	2%	23%	17%
High School	28%	15%	1%	52%	25%
Some College	26%	18%	3%	5%	28%
Bachelor	25%	13%	3%	14%	22%
Graduate	16%	9%	2%	6%	21%
Labor Market Status:					
Work full time	60%	16%	3%	50%	28%
Work part time	14%	11%	3%	10%	23%
Retired	13%	11%	2%	13%	7%
Not working	12%	14%	2%	5%	30%
Keeping house	NA	NA	NA	18%	15%
Student	NA	NA	NA	3%	36%
Household Income:					
0 – $9,999	3%	15%	2%	10%	32%
$10,000 – $19,999	6%	16%	5%	13%	21%

$20,000 – $29,999	9%	18%	3%	12%	29%
$30,000 – $39,999	11%	18%	2%	12%	33%
$40,000 – $49,999	9%	11%	2%	10%	23%
$50,000 – $74,999	19%	13%	3%	20%	23%
$75,000 +	26%	14%	2%	24%	26%
Religion:					
Protestant	NA	NA	NA	61%	20%
Catholic	NA	NA	NA	25%	24%
Jewish	NA	NA	NA	2%	29%
None	NA	NA	NA	10%	36%
Other	NA	NA	NA	3%	29%

The May 2004 Tracking Survey by the Pew Internet and American Life project took place from May 14th through June 17th of 2004. The pornography consumption question was: "Do you ever visit an adult website [when you go online]?" The General Social Survey (GSS) has taken place from 1972 through 2006. The pornography consumption question was: "Have you seen an X-rated movie in the last year?" I use data from all available years in the GSS columns, except for the household income rows, in which, for the purpose of comparison, I restrict the data to that from 2004.

Figure 1a. The proportion of the population who watched x-rated movies in the past year

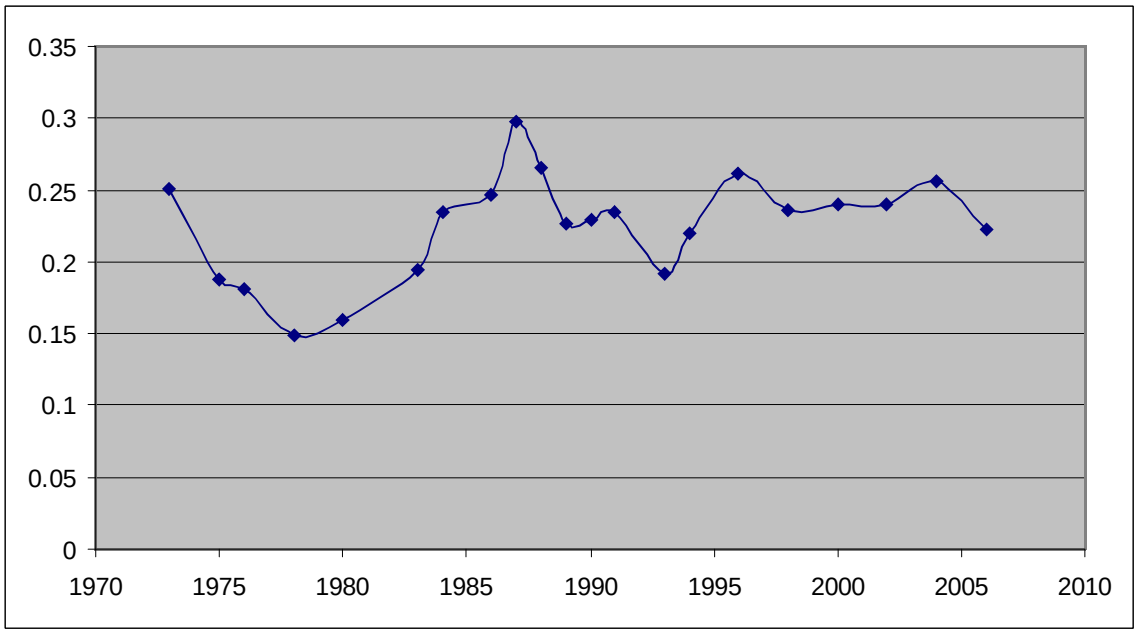
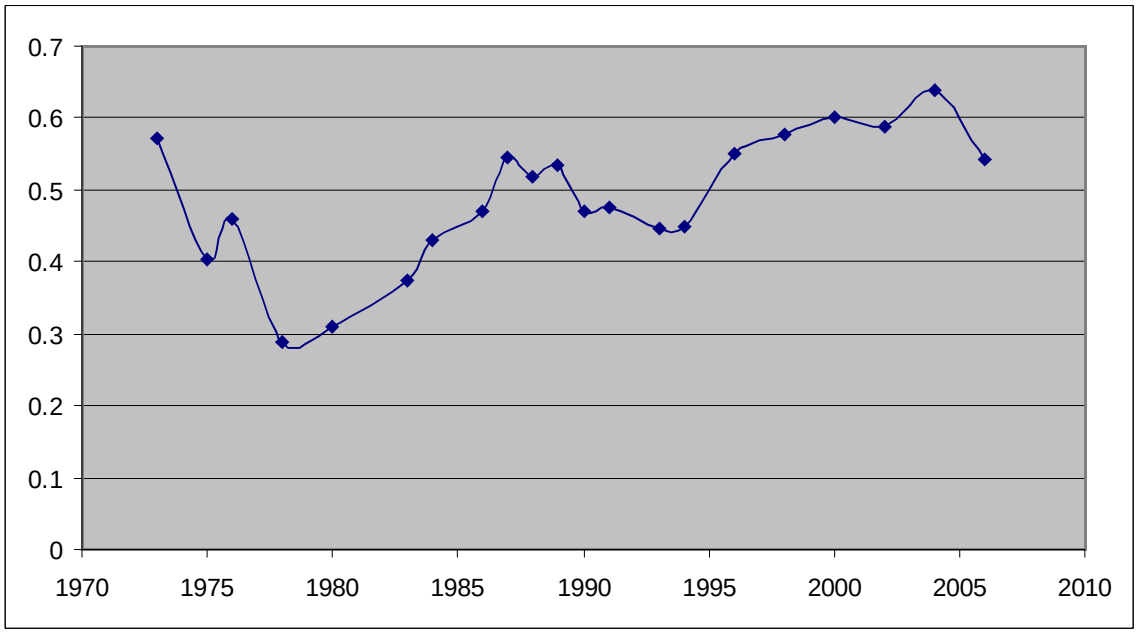
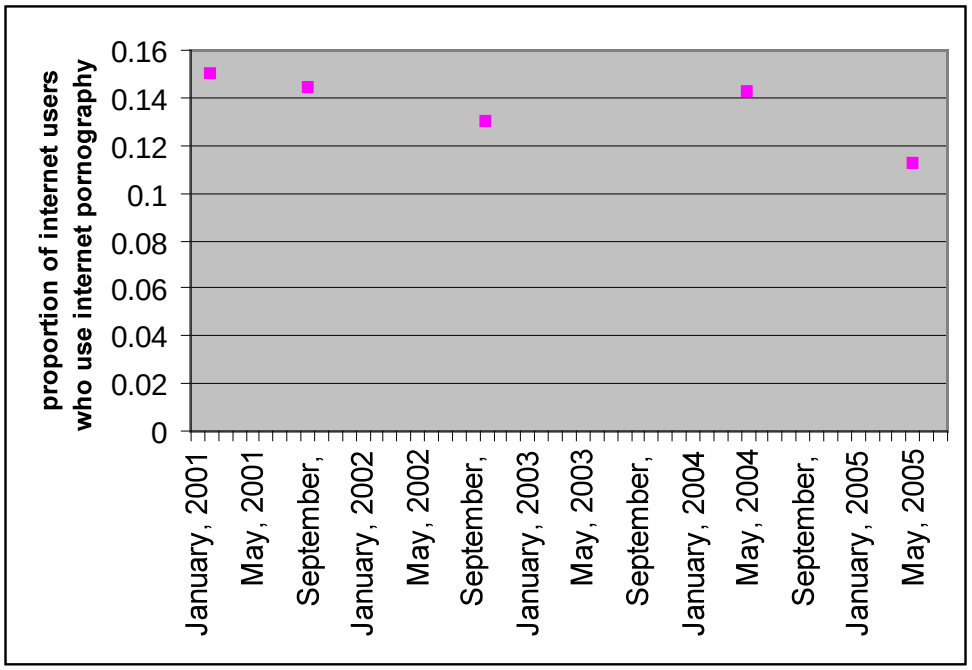


Figure 1b. The proportion of the population who watched x-rated movies in the past year (restricted to men aged 18 to 29)



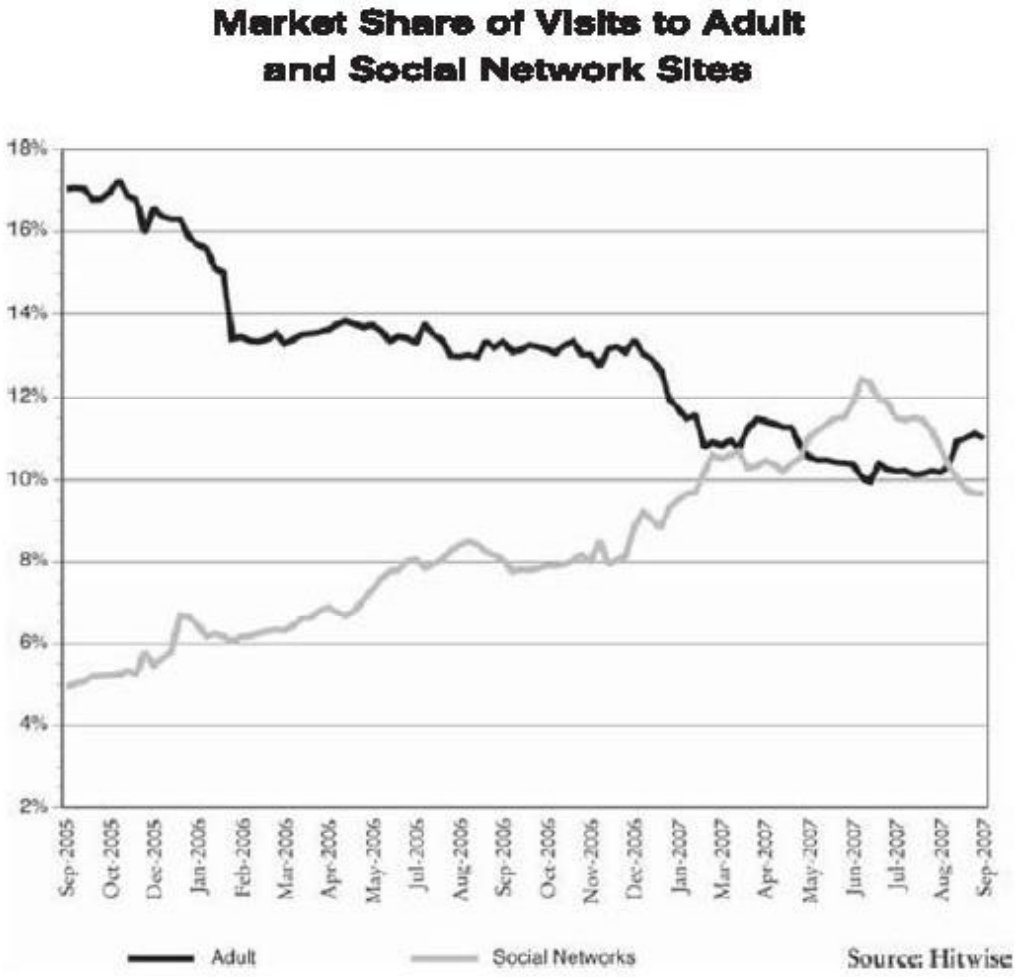
Source: The General Social Survey, ://www.norc.org/GSS+website

Figure 2. The proportion of internet users who consume internet pornography



Source: The Pew Internet and American Life Project Telephone Surveys

Figure 3. How Market Share of Visits to Adult sites has declined



Source: "Click: What Millions of People Are Doing Online and Why It Matters", by Bill Tancer, 2008.