

BEHAVIORAL SEXUAL MALADAPTION CONTAGION IN
AMERICA: AN APPLIED THEORETICAL ANALYSIS

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ABSTRACT: Massive increases in the availability and explicitness of pornography in the United States are correlated with increasing rates of sexually maladaptive behaviors. Correlation-causation issues are acknowledged and barriers to resolving this molar question are noted. However, agreement among various theoretical predictions and experimental findings on functional relations between pornography and behavior suggest that changes in the intensity and prevalence of certain classes of pornographic stimuli have probably contributed to increased rates of maladaptive sexual behavior in the US. New conceptions of *behavioral contagion* and *social entropy* are offered to unify this field of information into an explanatory whole that suggests a resulting decrease in cultural viability. I advise an experimental reversal of current culturally endemic pornographic self-stimulatory practices.

Science is only beginning to understand the diverse forces that can strengthen or weaken the probability of long term survival for a particular culture. One such force is a population's sexual practices. Like other organisms, humans are genetically endowed with strong motivation to engage in sexual behavior. But more than other organisms, the sexual behavior of humans is regulated by conditioning and learning and cultural rules (Rosman & Rubel, 1995). Rules can be viewed as analogs to contingencies of punishment and reinforcement (Malott, 1988). Their function is to regulate sexual behavior by age, gender combination, and kinship. Cultural rules also regulate the conditions under which stimuli that normally cause sexual arousal and behavior may be presented. I will analyze the profound changes in rules governing the general availability of pornography in the US and possible effects upon population sexual behavior..

A review of anthropological data, published in 1952 and 1976, on the near universality of genital and sexual privacy among 191 human cultures found that

AUTHOR'S NOTE:

Please address all correspondence to V. Thomas Mawhinney, Ph.D., Indiana University South Bend, Northside Hall, 1700 Mishawaka Avenue, Post Office Box 7111, South Bend Indiana, 46634-7111. I am grateful to Craig Mixon who noted that my ideas about the relationship between behavioral maladaptation contagion and cultural impairment were similar to principles of physical entropy. I thank Diana Streevey and Mary Ann McGuin for their skilled library research and useful suggestions. I am also indebted to Carrie Fried, Sally Mawhinney, and John McIntosh for reading this manuscript and providing helpful editorial comments. Appreciation also goes to Lee Sones, John Hundly, and Anne Richard for assistance with proof reading.

there was very little genital exposure, except under very restricted conditions. Also, "every human culture is characterized by an insistence on seclusion for sexual union, although physical conditions may make absolute privacy difficult to achieve" (U.S. Attorney General's Commission on Pornography, 1986, p. 121).

B. F. Skinner (1953) also described similar Western traditions of control of sexual behavior and the relationship of aversive contingencies to the emergence of self-control in sexual matters. He stated that:

Such severe measures could be justified only by arguing that sexual behavior was wrong, that it was nevertheless very powerful, and that aggressive sexual behavior on the part of the male must be met with exceptional defenses on the part of the female. (p. 420)

He then noted that the "repression of sexual impulses had many of the neurotic effects" which led to changes in these controlling practices (p. 420). Skinner further characterized and evaluated the newly evolving cultural sexual practices, entering the 1950s, as follows:

Instead of removing from the environment all stimuli which could possibly lead to sexual behavior, a knowledge of the anatomy and function of sex is supplied. Friendly relations with the opposite sex are more freely permitted, and severe punishment of sexual behavior is avoided in favor of instruction in the consequences of such behavior. It is possible that these techniques are not so effective as earlier measures. Sexual behavior is probably not so deeply repressed, and it is also probably commoner at the overt level. The net result may or may not be to the advantage of the individual or group. (p. 421)

Regarding these control methods, or the further reduction of controls, Skinner would have defined them as "good" or "bad" depending upon whether the outcomes were reinforcing or aversive to the individual and group. However, his ultimate criterion for such value judgements is very clear: "Survival is the only value according to which a culture is eventually to be judged, and any practice that furthers survival has survival value by definition" (Skinner, 1971, p. 136). Therefore, those practices that further a culture's survival are *good* and those that weaken its viability are *bad*. This value system guides the following analysis.

Sexual behavior is a potent variable in the evolution of societies. At its most elemental level, sexual behavior is prerequisite to the genetic, behavioral, and cultural contingencies which determine cultural evolutionary outcomes. The material product of sexual behavior is new life, the future human energy required for cultural evolution. The environmental conditions into which an infant is born mediate both the "*goods*" and "*bads*" that accrue to the child and to the culture. Infants are subjected to the selecting and shaping forces of countless behavioral

contingencies made probable through various cultural practices. The combined results of these and other processes either strengthen or weaken a culture's viability.

During the past three decades, Western culture has embarked upon an uncontrolled "social experiment" in which a great variety of vivid explicit depictions of sexual behavior patterns have been made widely available to its citizens. Less explicit, yet highly suggestive, portrayals of such stimuli have also come to pervade the common media. The increase in production rate, availability, variety, and explicitness of these stimuli in the United States is unprecedented in the history of all cultures.

Why this sexual evolution, among other evolutions, has occurred at this time is a complex question addressed by anthropologist Marvin Harris (1981) in his book, *America Now: The Anthropology of a Changing Culture*. According to Harris's (1979) theory of *Cultural Materialism, infrastructural determinism* (changes in modes of cultural production and reproduction) is a major force that alters the *structural modes* (domestic and political economy) and *superstructural modes* (arts, rituals, leisure, and science) in cultures. He contends that various infrastructural determinants (automation, depletion of natural resources, inflation, employment of women, and more) have summated to alter traditional marital and procreative values in the US (1981, pp. 166-183). Harris concludes that the resulting contemporary value of sex for recreation, not necessarily procreation, has led to numerous changes in our population sexual patterns, including the wide-spread production, distribution, and use of pornography. Despite these noted cultural determinants, this new cultural pattern of pornographic self-stimulation is probably modifiable. But, the salient question is: Why should such a cultural redesign be considered at this time?

B. F. Skinner judged that a culture would have special survival value "if it encouraged its members to examine its practices and to experiment with new ones," but he also warned cultures about avoiding both "excessive respect for tradition" and "excessively rapid change" (1971, p. 153). Recent major U.S. pan-cultural changes in sex-regulating contingencies may be an example of just such an excessively rapid change.

Skinner viewed such new cultural practices as analogs to *genetic mutations* which may strengthen or weaken a culture's prospects for survival (1971, p. 130). If this analogy holds true, the presumed benefits of such a cultural mutation must be viewed with caution. A genetic mutation is not likely to benefit the organism and "is usually an unfortunate event for the offspring since most mutations have

harmful effects that often prove to be lethal" (Sheppard & Willoughby, 1975 p. 38).

The focus of this analysis is upon pornography, sexual maladaptation contagion, and its effects upon our culture. There are three reasons to pursue this analysis: (a) such a causal chain could relate powerfully to cultural viability; (b) the pornography-behavior research area is better developed than is commonly known; and (c) this method of analysis may be useful for other cultural analytic enterprises. This paper will attempt a theoretical analysis of three large correlated cultural changes. These changes have occurred among rules regulating the prevalence of certain classes of public sexual stimuli in the United States, massive increases in the prevalence and intensity of these classes of pornography, and very large changes in rates of population maladaptive sexual practices and outcomes. The products of this analysis will be placed within the molar theoretical contexts of *behavioral contagion* and *social entropy* to qualitatively assess (good or bad) their impact upon the viability of this culture.

For my purposes, stimuli designed to increase sexual arousal in the observer will be termed pornography. Traditionally, pornographic stimuli judged offensive to prevailing social standards have been labeled as *obscene*. I will not contend with the vaporous standards of obscenity.

Sexual Metacontingency and Metabehavioral Changes in the United States

The present analysis is concerned with changes in particular cultural practices and outcomes. Glenn (1988) defined the *metacontingency* as "the unit of analysis encompassing a cultural practice, in all its variations, and the aggregate outcome of all the current variations" (p. 168). Examples of metacontingencies can be changes in legal and marketing practices mediating the availability of pornography in a culture. Infrastructural changes appear to determine such metacontingency changes. In turn, Metacontingency changes lead to outcomes that can be measured in aggregate population behavior patterns. A *Metabehavior* is "an aggregate measure of a class of acts performed by individuals in a particular population" (Mawhinney, 1995, p. 35). One example of a metabehavior would be the rate per 100,000 of population of rapes in the US in a one-year interval. The plural form of this term, *metabehaviors*, is used to simultaneously refer to several classes of aggregate behavioral measures such as rates of child molestation, sexually transmitted diseases, and teen pregnancy. Steady states or changes in metabehaviors can result from metacontingencies that support or modify

population behaviors and thereby mediate both cultural outcomes and cultural viability.

Legal Metacontingency Changes Relevant to Pornography

The US has had laws regulating the availability of pornography since 1842. In the 1930s federal courts ruled that the use of "dirty words" in a "sincere and honest book" did not make the book "dirty." In the 1950s the Supreme Court relaxed its restrictions on the marketing and possession of pornographic materials. Since that time many trials have been brought regarding the content of pornographic media and legal judgments have generally favored the producers and distributors of pornography (*Microsoft Encarta*, 1994). The subjectivity of these concepts along with profit motives, technological developments, population demand, and changing interpretations of the First Amendment to our Constitution (freedom of speech and religion) have produced dramatic changes in metacontingencies governing the availability of pornography within the past 30 years.

In 1967, President Lyndon Johnson appointed a Commission on Obscenity and Pornography (COP). The COP (18 individuals from fields such as law, sociology, religion, psychiatry, and publishing) investigated the relationship between pornographic materials and antisocial behavior. In 1970, the final COP report concluded that there was no evidence that exposure to explicit sexual materials led to antisocial behavior or harmed society (COP, 1970). It therefore recommended that government (federal, state, and local) not interfere with the right of adults to read or view sexually explicit materials. However, a minority report alleged that this conclusion was biased and based upon studies with many flaws. The minority also reported that evidence suggesting harmful effects of pornography viewing was omitted from the Committee's summary of findings (Eysenck & Nias, 1978).

John Court (1984) criticized the 1968 commission's "no harm" findings on the grounds that violent pornography was relatively infrequent at the time of their investigation and sexual aggression became more prevalent in pornography during the 1970s. On this basis, he also criticized the commission's interpretations of two important cross-cultural studies that suggested no harm, or even a negative correlation between pornography and sex crimes (Ben-Veniste, 1971; Kutchinsky, 1971). Court expressed concern with these studies because they did not include measures of serious sex crimes such as rape or attempted rape. Donnerstein, Linz and Penrod (1987) also reviewed the findings of the 1970 COP report and noted that only one series of studies (Tannenbaum, 1970) evaluated the effects of erotica

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on aggressive behavior. They reported that in this study, "not fully described in the panel's summary report" (p. 32), there was evidence that when subjects were angered after seeing aggressive erotic films they showed increased levels of aggression.

In 1973, the Supreme Court (*Miller v. California*, 1973) made the censorship of pornography almost impossible when it ruled that in order to censor such materials it must be demonstrated that

(1) the average person, applying contemporary community standards, would find that the work, taken as a whole, appeals to the prurient interest; (2) the work depicts or describes in a patently offensive way, sexual conduct specifically defined by the applicable state law; and (3) the work, taken as a whole, lacks serious literary, artistic, political, or scientific value. (Bork, 1996, p. 146)

Ofcourse, the problem with these definitions is their subjectivity.

In 1985, the U.S. Attorney General appointed another federal commission to investigate the possible relationship between pornography and antisocial behavior. The Attorney General's Commission on Pornography issued its report in 1986 and it was in high conflict with that of the 1970 Commission. The findings of 1986 report will be discussed below (see *The known effects of pornography*).

Technological, Marketing, and Economic Changes in the Media

It is difficult to find quantitative data pertaining to the historical development of pornography. Our 1996 query of the Congressional Research Services of the Library of Congress brought the following response by J. Manning (personal communication, February 9, 1996): "There are no official statistics on the sales/size of the 'adult entertainment' or 'pornography' industry in the United States." Perhaps the most comprehensive historical report on the growth and diversity of pornography in the US is that of the Attorney General's Commission on Pornography's Final Report (1986). Unless otherwise indicated, the following information has been abstracted from this Commission report.

The pornography industry grew over the three decades preceding 1986 by expanding to new markets. It progressed from a disorganized, covert, low profit, industry to a pervasive multi-billion dollar business. About 25 years ago the yearly income from hard core pornography was estimated to be from less than five to ten million dollars. A 1997 *U.S. News & World Report* (Schlosser) has provided the most current evaluation of pornography marketing and economic developments. The pornography industry now produces estimated revenues of eight billion dollars per year. These earnings are now thought to be much larger than domestic

movie receipts and also greater than earnings from country and rock music recordings.

Analog to Baseline Conditions

In the 1950s adult movie and magazine stores sold black and white images of partially clad women behaving seductively. These establishments were mostly located in low socioeconomic areas. Magazines were of a grainy black and white quality and the pubic areas of models were obscured. Nudist magazines were popular. Poor quality films depicted "strip tease" dancing in which only the breasts were bared. Men generally remained partially clad. In the 1950s, Los Angeles had five adults-only outlets which fronted as general newsstands but kept the pornography out of sight.

Analog to Change Through Prompting, Fading, and Shaping Procedures

Pornography became more available to the general public in the early 1960s. Most of the materials showed simulated sex acts, but genitalia remained obscured. The exposure of genitalia was still considered indecent in almost all jurisdictions. In the middle 1960s implied sexual activity became more frequent in "pseudo-nudist magazines." Traditional nudist magazines were largely replaced by nudist-formatted photographs of more erotically posed and more attractive models. By the late 1960s court decisions overruling obscenity convictions had prompted increased growth in the pornography business. The Supreme Court reversed previous decisions and allowed nudist publications to show the genitals of men, women, and children. Nudist magazines changed their practice of segregating the sexes in photographs, although they avoided any pictures implying sexual activity.

By about 1968, a new class of magazines had evolved called "spreader" or "split beaver" magazines. These terms referred to explicit images of vulvas spread open in various ways and to various degrees. Concurrently, favorable Supreme Court decisions allowed the emergence of what was then called homosexual magazines, which began to evolve along similar lines of explicitness. Small quantities of products featuring various fetishes (boots, rubber, and leather, etc.) also appeared. Sadomasochistic materials showing domination, bondage, and spanking with whips, and so forth, were available in small quantities. In 1968 and 1969 two additional classes of illustrated books entered the market. The first was the "marriage manual," which showed photographs of sexual intercourse, fellatio, and cunnilingus for purported educational purposes. Another class of publications showing explicit sexual behavior was presented as cross-cultural historical studies of pornography. By the end of the 1960s pornographic films showing oral and genital copulation were more easily available. There was a significant expansion of

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the market for pornographic material throughout the 1960s. Smaller operations remained in business, but large wholesale warehouses began to appear. The channels of distribution became more varied and producers and wholesalers provided a greater variety of pornography to outlets which then provided a greater diversity of materials to consumers. In Los Angeles, the number of adult-only outlets and theaters increased from 5 to 18 between 1960 and 1965.

The greatest proliferation of pornographic materials occurred in the 1970s. During this time, outlets for pornography in Los Angeles increased from 18 to 400. During the 1970s, the producers of pornography continuously tested the limits of pornography laws. Materials that showed actual sex acts were widely distributed. Materials depicting paraphilias became more prevalent. The clinical term *paraphilia* (American Psychiatric Association, 1994), refers to actions that include sadism (gratification through inflicting pain or humiliation on others), masochism (gratification by receiving pain or humiliation), pedophilia (child molestation), and fetishism (sexual gratification using certain nonsexual human body parts or inanimate objects). Materials depicting sex with animals—as well as visuals of ejaculation, urination, and defecation—also became more common. For a time, adult bookstores openly sold commercially produced child pornography magazines entitled *Moppets* and *Where the Young Ones Are*. Similar materials were sold surreptitiously in other locations. Adult theaters began to openly advertise and show films of improved technical quality such as *Deep Throat* and *The Devil and Miss Jones*. At that time, these were the two most widely distributed films in pornography history. In the late 1970s the industry expanded in another way. Adult stores began to provide peep show booths in which customers could pay to see pornographic films in privacy. The distribution of pornographic materials had become a very large and sophisticated business.

Financial Metacontingencies in the Pornography Industry

In the 1980's the pornography industry grew exponentially with mass distributors, theater chains, home videos, compact discs, subscription television, telephone "Dial-A-Porn," and computer sex subscription services. By the middle 1980s, the pornographic film industry was transitioning from a theater-based business to a video cassette home viewing market. With the growth of the video market, it was estimated that by 1990 the pornographic theater would be largely replaced by home viewed videos. Pornographic scenes were shot directly onto video tape because cost of production was lower than film, the results could be viewed immediately, and the time and cost of editing were greatly reduced. The estimated cost of producing a pornographic movie on film was once about

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\$75,000. The new practice of shooting scenes directly onto video tape had reduced production costs to between \$4,000 and \$20,000 as of 1986. In that time, the retail markup on general release films was reported to be about 400% while the markup on a pornographic film was 800% to 1,000%. In 1997 one producer estimated that one pornographic video cost \$8,000 to create and might earn 30 times that investment (Schlosser, 1997). The 1986 Commission predicted that there would be approximately 27,000 pornographic video stores by 1987 and that pornographic videos would become increasingly available through general video rental stores.

The following summary of recent pornography market financial contingencies and outcomes in the US is based upon Schlosser's (1997) estimates:

1. The number of X-rated video rentals increased from 75 million in 1985, to 490 million in 1992, and to a record high of 665 million in 1996.

2. The US is the world's leading producer of X-rated videos. The number of yearly new titles produced since 1991 has increased by about 500%. Current production is about 150 new titles each week for a total of almost 8,000 per year.

3. Most pornography profits go to traditional businesses such as AT&T (telephone sex); Time Warner and Tele-Communications Inc. (pay-per-view television pornography); Hyatt, Sheraton, and Holiday Inn (in room pay-per-view pornography); and general neighborhood video rental stores (adult rental sections).

4. Last year about \$150 million was spent ordering pornography on pay-per-view television. Cable operators keep about 70% of this revenue.

5. Last year about \$175 million was spent for hotel room pornography viewing. Hotels keep about 20% of these revenues.

6. Last year Americans spent close to \$1 billion on telephone sex.

7. The Playboy web site, offering free viewing of its playmates, averages 5 million hits per day.

8. The best sex video performers earn from \$80,000 to \$100,000 per year. Female stars are paid about \$1000 per scene. Most female performers work for \$300 per scene. Beginners will work for \$150 a scene. Performers try to do two scenes per day, four or five days a week.

9. Amateur performers video record sexual activities in their homes and send them to amateur pornography companies. Amateurs earn \$20 for every minute of their video used in productions.

In summary, new financial metacontingencies which maintain U.S. production and world-wide distribution of pornography have become an enormous force in this culture during the last 30 years.

Qualitative Changes in Pornographic Stimuli

Science is generally best served when variables are quantified. However, important dimensions of pornographic stimuli can be revealed only through qualitative description. Previous sections have documented the increase in *rate* of occurrence of pornographic stimuli in the US and the increased profits to related businesses. To document the increase in *intensity* of these stimuli requires that the topographies of various pornographic response classes be clearly described. Such specificity is also necessary to understand how these stimuli could naturalistically combine with well known principles of conditioning and social learning to increase socially damaging metabeaviors in our society.

X-Rated Video Rentals

Anyone over the age of 18 years can now go to approximately 25,000 neighborhood video rental businesses and visit the "adult" section. There, clear and close-up video recordings of real-life oral, anal, and vaginal sex between people of the same and opposite sex, in pairs or in mixed groups, can be rented for several dollars. The sexual depictions are very frequently of sexually aggressive females who crave high sexual stimulation and penetration of their vaginas or anuses with dildos, penises or other objects. These females commonly depict delight when men ejaculate onto their hair and faces or onto their breasts, buttocks, and backs. Often two or more men ejaculate onto the females simultaneously, or in tandem. Two men are commonly shown penetrating ecstatic women vaginally and anally at the same time. The women are frequently treated in rough or disrespectful ways as men slap their buttocks or grab and pull their faces and mouths onto a penis by the hair of their head. The women act as if they crave and enjoy this treatment. Similar homosexual and sadomasochistic depictions are also plentiful at these outlets. Frequently there are simulated rapes in which a struggling female ultimately becomes aroused and shows extreme sexual pleasure.

R-rated Video Rentals

R-rated "horror" sections of neighborhood video rental stores typically offer large quantities of rentals that depict a mixture of violence and sex of far greater magnitudes and intensities than those commonly shown in the "adult" or X-rated sections. Several nonsystematic acquisitions by my research assistant and me yielded vivid and realistic color depictions of the following behaviors: (a) A shrieking and terrified naked woman's breasts are pierced with meat hooks and she is then hung by them, suspended by ropes, until she dies an agonizing death.

Blood flows freely from her breasts down her body. (b) A satanic man sits on top of a bare breasted woman and plunges a large knife into her chest, cuts out her heart and eats of it. (c) A man anally rapes a woman who is held across a large rock by his friends. The woman acts out horror and pain in highly realistic ways as the men laugh and jeer. (d) A naked woman is tied spread-eagled on her back in a torture chamber while a grotesquely deformed and intellectually impaired man tears the pubic hairs from her bleeding vulva as she shrieks and writhes in terror and in agony.

Pornographic Magazines and Mail-Order Resources

A wide variety of popular sex magazines (*Hustler*, *Penthouse*, *Club*, *Cheri*, etc.) are commonly available at neighborhood drug stores, magazine stores, or news stands. These magazines feature high resolution images of naked woman with vulvas and anuses spread wide. Men are shown with penises erect or semi-erect in various sex act topographies. Autoerotic, heterosexual and lesbian sexual depictions are shown in single, couple and group contexts. This medium is still evolving. In 1997, there appeared high-speed macro photographs of penises ejaculating sperm onto female faces (frozen at the moment of impact). This class of pornography has long been available in X-rated pornography shops, but it is now beginning to appear in regular magazine/greeting card stores. Future popular pornography media evolutions are in the making. For example, in 1998 *Penthouse Magazine* (July, p. 6) invited women over 18 to send photographs of sexualized urination (often called "golden showers") stating: "you'll have an opportunity to make publishing history."

Another pornographic marketplace exists in the many "back pages" of these magazines. There, graphically depicted in high-resolution color photographs, are a variety of less common sexual materials that one can order through the mail. Advertisements for simulated child pornography are pervasive. The women shown in these ads are made up to appear prepubertal, or just coming into puberty. They look very young and are often attired in school-girl clothes (cheer leader costumes, private school uniforms, etc.) and they frequently wear their hair in ponytails or pigtails. These models are selected for their very small breasts, and sparse pubic hair. Frequently their pubic areas are shaved to make them appear prepubertal. There are also ads for materials pertaining to oral and vaginal sex with animals such as horses, dogs, and snakes. Other ads promise sex among humans involving bodily excrement. Another class of ads explicitly depicts transsexual materials (models with both breasts and penises) and also models who are unusually configured or disfigured. These ads show models who are grossly obese or who have amputations, deformed genitalia, giant penises, double penises, or who have

abnormally long labia, nipples, or tongues. There are also many ads for materials that show simulated bondage, humiliation, pain, and suffering. One comprehensive review of pornographic magazines found that almost 25 % of them contained an act of paraphilia. Among the paraphilias, sadomasochism was found, by far, to be the most common type (Lebegue, 1991). All of the above forms of pornography can be mail-ordered, or they can be directly purchased in any of the pornography stores that now exist in most communities.

The Internet

The internet provides for private, seemingly anonymous, access to huge quantities of all manner of pornography. An informal survey of various classes of cyberpornography was conducted, using the Excite search engine, during August of 1998. This search produced the following numbers of sites per specified descriptor: *torture sex* (641,913); *naked children (1,692,144)*; *fisting* (fists forced into vaginas or anuses, 6,385); *golden showers* (449,184); *bestiality* (human sex with infrahumans, 5,532). These classes of websites and the associated numbers are not mutually exclusive. Although most sites require payment for viewing, they commonly include highly explicit free samples for anyone capable of typing the search words. To illustrate the extreme nature of cyberpornography, pedophilia is strongly advocated by the North American Man/Boy Association (NAMBLA) on a webpage entitled "Free Spirits" and also at 623 other websites available using the descriptor NAMBLA. Also, Simon Winchester (1995) reported that the internet contained a pedophile bulletin board as well as materials describing "snuff sex" (i. e., how to torture and kill sexual victims). He also noted a graphic and detailed depiction of the kidnapping, sexually mutilating, and killing of two children. Another theme, with detailed written depictions, was of mothers and fathers having sex with their young children.

Probable Effects of Pornography on Human Behavior

The 1986 Attorney General's Commission concluded that the 1970 COP report, which found no relation between pornography and antisocial behavior, was "starkly obsolete." This conclusion was based upon an impressive increase in the amount of high quality programmatic research into the effects of pornography on viewers; substantial improvements in quality of both independent and dependent measures in current research efforts; and dramatic increases in the explicitness, diversity, and pervasive availability of pornography within our culture. The 1986 Commission summarized its findings by dividing pornographic depictions into four categories. *Category 1: violent*. These materials are of a sadomasochistic nature

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(whips, chains, pain, and suffering, etc.) and include rape, violence, and forced sex. *Category 2: degrading but not violent.* Degrading materials depict women (less frequently, men) in very subordinate roles, seemingly existing only for the sexual pleasure of men. They are shown engaging in sexual practices that "most people" would consider degrading. *Category 3: neither violent nor degrading.* Participants in these depictions are portrayed in relatively "equal roles,"—they are willing participants, and there is no evidence of coercion, pain, or violence. *Category 4: mere nudity.* The commission was troubled by the definitional problems encountered when "mere nudity" is sexualized in degrees.

In their review of existing research literature, the 1986 Commission evaluated possible harm done by each of the four categories in terms of three tiers: *social science evidence; totality of evidence;* and projected *moral, ethical, and cultural* outcomes. The commissioners agreed that evidence of harmful effects had been found in all three tiers for violent and degrading pornography. In the totality of evidence tier, they judged that there was sufficient evidence to conclude that these classes of pornography increased acceptance of the Rape Myth (that protesting women will enjoy sex once they are forced into it); that it promotes the "degradation of the Class/Status of Women"; and that it has harmful "Modeling Effects" (p. 1034). It was further concluded that these effects were harmful to our culture by damaging its moral and ethical precepts. The Commission's findings were mixed regarding harms caused by nonviolent/nondegrading depictions and mere nudity. However, "all Commissioners agreed that some materials in this (i. e., these) classification(s) may be harmful" (p. 1035).

Current data and theory-based arguments for and against the deleterious effects of pornography are also detailed in three important books (Donnerstein, Linz, & Penrod, 1987; Eysenck & Mas, 1978; Malamuth & Donnerstein, 1984). These scholarly efforts represent scientifically objective analyses and methodological critiques of a vast literature which has been often distorted by powerful emotional biases. The present analysis is informed by this literature. A presentation of all non-science-based arguments against and in favor of pornography is beyond the scope and intent of this paper.

Eysenck and Nias (1978) asserted the importance of interpreting the pornography research database from the perspective of established psychological theories. Based upon a review of important advances in other sciences they state: "a good theory is often more reliable than empirical determinations: these may require a lengthy process of refinement before they can be taken very seriously" (p. 42). Skinner's (1950) warnings against theories were not directed at empirically based predictions about functional relationships derived from a mature science. He

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stated that a useful theory "will not stand in the way of our search for functional relations because it will arise only after relevant variables have been found and studied" (p.216). He also noted that "a theoretical construction may yield greater generality than any assemblage of facts" (p. 216).

Using solid theoretical projections, 16 years before the fact, Eysenck and Nias (1978) anticipated the conclusions of the 1986 Commission when they stated:

It can no longer be said that the evidence is ambiguous, or too contradictory to allow any conclusions to be drawn; the evidence is remarkably consistent and congruent in its major aspects. Much still clearly remains to be discovered, but our major conclusions are unlikely to be changed by such future work. (p. 275)

Malamuth and Donnerstein (1984) reviewed a vast research literature, since the 1970 Commission report, which indicated that anger induction and exposure to highly arousing *nonviolent* pornographic literature appeared to facilitate aggression in males. They described a new investigative model which involved angering or not angering male subjects, showing them highly explicit nonaggressive pornography, and then providing an opportunity to aggress against female or male accomplices. Based upon a series of such studies, Donnerstein (1984) concluded "that under certain conditions exposure to pornography (nonaggressive) *can* increase subsequent aggression against women" (p. 62). However, it was concluded that the lowering of aggressive inhibitions was necessary for such effects to be manifest. He also noted that real-life frustrations as well as "drugs, alcohol, or other aggression disinhibitors very likely increase the aggressive response to pornography" (p. 62).

Donnerstein (1984) also concluded

that a single exposure to aggressive pornography can result in (1) self-generated rape fantasies, (2) an increase in sexual arousal in both normal and rapist populations, (3) a less sensitive attitude toward rape, and (4) an increased acceptance of rape myths and violence against women, (p. 63)

He added that the most important general finding is "that these changes in attitudes and arousal are directly related to aggression against women [and further] that these effects have occurred after only one exposure of a relatively short duration" (p. 63).

Regarding the effects of massive exposure to pornography, Zillman and Bryant (1984) concluded that (a) it increased acceptance of such material and diminished repulsion; (b) the general findings of a causal connection between pornography and aggression for both sexes were confirmed; (c) massive exposure to such depictions caused viewers to overestimate the popularity of unusual sexual

behaviors (fellatio, anal, group, sadomasochism, bestiality); and (d) massive exposure to explicit pornography led to both men and women recommending shorter sentences for rapists. Zillman and Bryant (1988) also found that prolonged consumption of pornography produced greater acceptance of premarital and extramarital sex and strengthened beliefs in male and female promiscuity. There were also lowered expectations about the durability of marriage, reduced desires for children, and an acceptance of male dominance and female servitude. These results were reported to hold, with few exceptions, independent of sex or student status.

Donnerstein, Linz, and Penrod (1987) also reviewed the research of Zillman and Bryant, and others, on the effects of pornography upon attitudes and beliefs. They concluded that exposure to nonviolent pornography did not appear to increase aggressive behavior and suggested that the main attitudinal and belief effects may have been caused not by the sexual explicitness, but by the demeaning of females. Evidence was also cited to suggest that "contrast effects" in which observers of attractive models in pornography find their mates or selves less attractive can occur independently of a sexual context (Cash, Cash, & Butters, 1983). Donnerstein, Linz, and Penrod (1987) guardedly concluded that

the data, overall, do not support the contention that exposure to nonviolent pornography has significant adverse effects. In reaching this conclusion we do not deny that there have been studies finding negative effects or the possibility of finding such effects in the future. We only mean that the evidence, on balance, is mixed. Some studies find negative effects; others do not. Nor does this discount the possibility that the effects of these materials are rather subtle and cannot be detected with the instruments that have been devised by social scientists so far. (p. 85)

These researchers confirmed the harmful effects of violent pornography, although they questioned whether the explicit sex or the violence had differential effects. They also discussed their great concern over the high volume of R-rated "slasher films," in which women are tortured, raped, killed, and dismembered within erotic, but less sexually explicit, contexts. They cited overwhelming evidence to support the harmful effects of media violence gathered by the National Commission on the Causes and Prevention of Violence (1969), The Surgeon General's Study of Television and Social Behavior (1972), the strong warnings expressed by the American Medical Association (1976), and the National Mental Health Association (Baron, 1977).

In sum, it is anomalous and irrational to view culturally endemic pornographic depictions of aggression and abuse as harmless while similar portrayals, in mildly sexual or nonsexual contexts, are known to be harmful.

Are the Predicted Effects of Pornographic Stimulation in Evidence in the US?

Violent pornography increases aggression in males in laboratory settings. Callous and demeaning depictions of male domination of women in sexual contexts can negatively influence the attitudes and beliefs of viewers. Although it is a long way from traditional experimental environs to cultural ones, strong experimental findings that accord with strongly established theory should guide the search for possible cultural manifestations of harmful effects. Under the best conditions, such correlations may warn of something, but they will prove nothing. Proving cause and effect at mega-cultural levels may be nearly impossible. During the last 40 years, our culture has undergone numerous massive social and economic changes. Measures of population sexual behavior are impacted by a great variety of cultural practices. For example, increases in divorce, children in poverty, teen runaways, child supervision by nonparental custodians, drug and alcohol use, and so forth, certainly impact rates of a variety of sexual metabehaviors, such as adolescent pregnancy, rape, and child molestation. Unfortunately, influences between these metabehavioral classes are almost certainly bidirectional and they probably interact in catalytic and synergistic ways. Despite the "gordian knot" of uncertain causation, cultural planners must take serious note whenever multiple theoretically related correlations are identified—that is, large predicted metabehavioral outcomes (suggested by experimental data), well-established theory, and recent potentially catalyzing metacontingency changes.

The following sexual metabehaviors increased dramatically shortly after the federal deregulation of pornography. Unfortunately, these measures are imperfect because they suffer from intensified or slackened measuring efforts, changing definitional criteria, and from changing probabilities of reported occurrences. Nevertheless, such metabehaviors provide for otherwise unavailable gross estimations of rates of occurrence of important cultural phenomena and they control for local sampling biases.

Figure 1 represents a record of percent changes in forcible rapes for the population of the US over the past four decades. Forcible rapes per 100,000 of population increased from 8 in 1957 to a high of 41.2 in 1990. The rate of increase for rape was slow through 1965, but it positively accelerated from then to 1980 before stabilizing through 1985. Forcible rape rates increased moderately in 1990 and then declined to 1980 levels in 1995. This represents a total rape rate increase of 364% since 1957 (U.S. Bureau of Census [USBQ, 1975, p. 413, Table

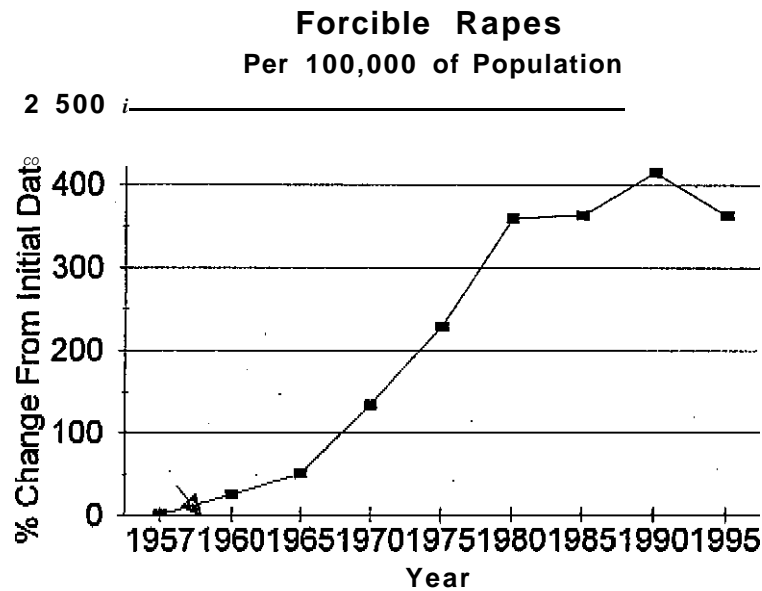


Figure T. Forcible rapes per 100,000 of U.S. population, shown in percent changes from the initial data year.

H952-961; USBC, 1997, p. 205, Table 320). The arrow on the abscissa marks an unequal time interval produced by the first measure of rape rates.

Figure 2 shows reported percent changes in child sexual abuse in the US over the past two decades. Reports of child sex abuse were 3.2 per 10,000 in 1976. Reports of child sexual abuse increased by close to 100% in 1977 and stabilized at that level until 1982. Child sexual abuse then sharply accelerated from 1983 to 1986 where it stabilized for three years at about a 400% increase (15-17 children per 10,000). Child sex abuse reports then declined to approximately 300% from 1992 through 1995 (USBC, 1990, p. 176, Table 297; USBC, 1995, p. 215, Table 346; USBC, 1997, p. 218, Table 352). The arrow on the abscissa indicates an interruption in reported percents from 1987 to 1989.

Figure 3 displays percent changes in U.S. illegitimate births among 15-19 year olds per 1,000 of this population during the past 5 decades. The illegitimate birth rate was 7.4 per 1,000 in 1940 but had increased to 46.4 by 1994. This change represents a 527% increase in rates of illegitimate births to adolescents for that interval. The illegitimate birth rate increased moderately from 1940 to 1965, but then sharply accelerated to much higher percents of change through 1994 (USBC, 1975, p. 52, Table B 28-35; USBC, 1993, p. 78, Table 101; USBC, 1997, p. 79, Table 97). Arrows on the abscissa indicate unequal time intervals.

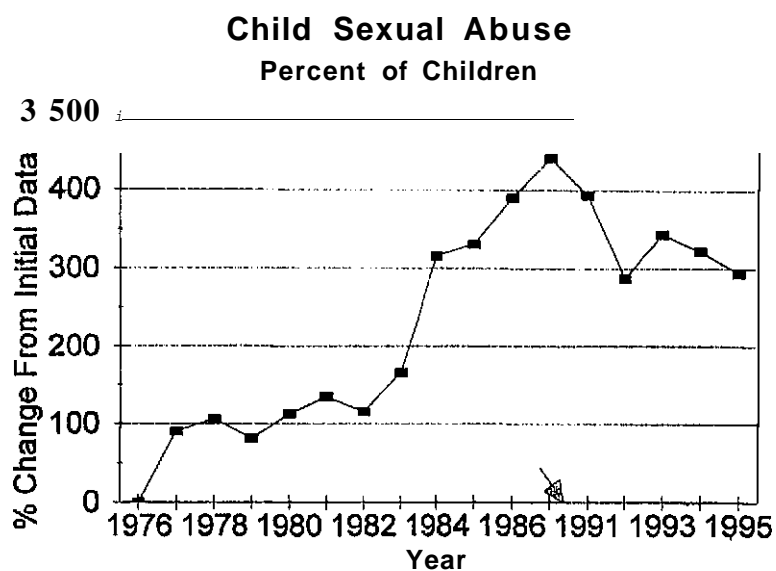


Figure 2. Percent of U.S. children experiencing sexual abuse shown in percent from the initial data year.

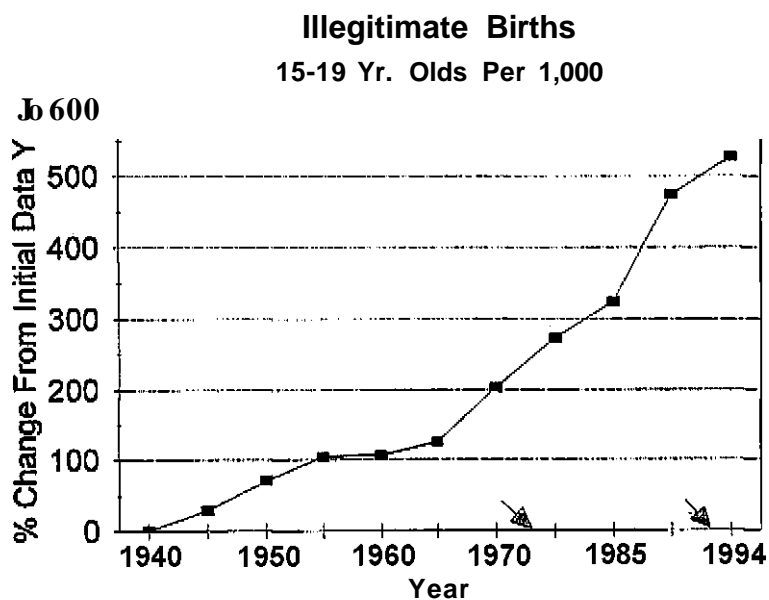


Figure 3. Illegitimate births per 1,000 U.S. 15-19 year olds shown in percent changes from the initial data year.

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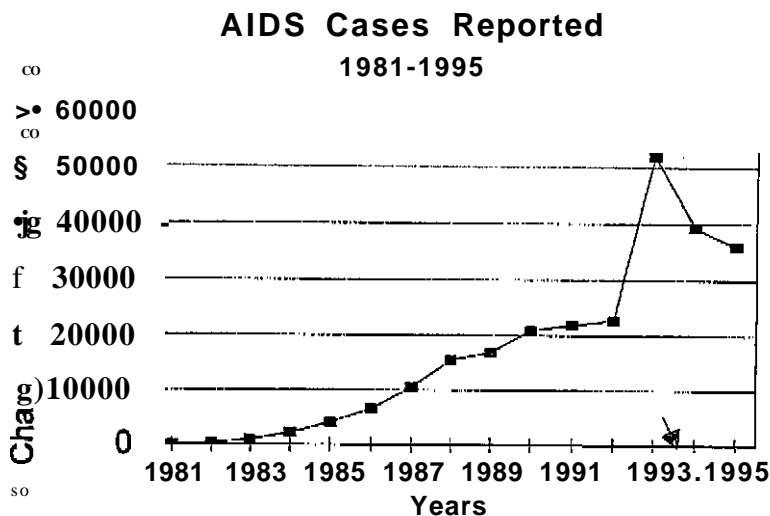


Figure 4. Number of reported U.S. AIDS cases shown in percents from the initial data year changes.

Figure 4 displays percent changes in AIDS cases reported in the US from 1981 (199) to 1995. AIDS cases reported increased steadily from 1983 (21,170) through 1992 (45,472). As indicated by the arrow, the reported rates increased markedly in 1993 (103,533) due to changes in the classification and case definitions. Reported cases then declined in 1994 and again in 1995 (71,547) for a total percent increase from 1981 of 35,853% (USBC, 1990, p. 116, Table 185; USBC, 1997, p. 141, Table 213). These data are not controlled for population growth.

Although the validity of each of the preceding measures can be questioned, clearly they all represent aggregate measures of U.S. population sexual behavior and their composite trend is in a worsening direction.

Behavioral Contagion and Social Entropy Theories

Pornographic stimuli are spread throughout our culture via its media (printed word, photographic magazines, cinema, video, internet, telephone, and television). I hypothesize that this widespread pornographic stimulation has contributed directly and indirectly to the increases in damaging sexual metabeaviors presented in the last section. If this hypothesis is correct, what, specifically, would be the psychological principles that power these increases? Furthermore, how could these principles be organized into an integrated whole that might someday

allow for the probabilistic explanation, prediction, and control of such molar phenomena?

Behavioral contagion generally pertains to the spread of certain patterns of behavior within a population. The earliest behavioral contagion research citations are to Polanski, Lippitt, and Redl, (1950); Redl, (1949); Wheeler, (1966); and Wheeler, Smith, and Murphy (1964). Mora (1963) extended the concept to the dark ages explaining the phenomenon of tarantism in Europe. Many fields of behavioral science have documented the dynamics of behavioral contagion. There have been applications to social and political phenomena (Hill & Rothchild, 1986; Midlarsky, 1978); to emotional behavior (Freedman & Perlick, 1979; Joiner, 1994); to aggression (Berkowitz & Rawlings, 1962; Wheeler & Caggiulla, 1966); to performing prohibited behavior (Walters & Parke, 1964); and to traffic violations (Connolly & Aberg, 1993). Unfortunately, definitions of behavioral contagion have often lacked utility because of the use of subjective and mentalistic language.

The following definitions represent a behavioralized conception of this pervasive phenomenon. A new theory of behavioral contagion may be useful to the enterprise of cultural analysis because it systematizes the effects of a multiplicity of known behavioral determinants upon population behavior. More specifically, behavioral contagion theory may help in the evaluation of the probabilistic effects of pornography upon the U.S. population.

The concept of behavioral contagion is behavioralized by defining it as *the spread of particular behavior patterns within a population via scientifically validated biopsychosocial mechanisms*. *Biological mechanisms* include behavioral-genetic influences (see Plomin, DeFries, & McClearn, 1990, for methodological critiques and findings). Also included are infectious diseases (e.g., STDs) or physical damage that alters the behavior and/or behavioral potential of individuals within a population. *Psychological mechanisms* include well researched and documented principles from operant and respondent conditioning, social learning theory, and social psychology. *Sociological mechanisms* include the effects of political organizations, economic conditions, social connectedness or insularity, and the strength and functioning of various social organizations and systems within a culture (families, schools, churches, etc.). Finally, various technological developments (media, medicine, military, chemicals, waste byproducts, etc.) can influence population behavior through any biopsychosocial avenue. This class of strong cultural determinants, among others, falls under the rubric of infrastructural determinism (Harris, 1979).

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I classify behavioral contagion as *maladaptive* or *adaptive*. Maladaptive contagion refers to the spread of behaviors (and associated thoughts, emotions, or perceptions) that (a) are prohibited by law and (b) are represented as a diagnostic category in the *Diagnostic and Statistical Manual-IV* (American Psychiatric Association, 1994). Conversely, adaptive contagion refers to the spread of behaviors (and associated thoughts, emotions, or perceptions) that are competitive or incompatible with maladaptive behavior definitions *a* and *b*.

The main idea is that behavioral contingency or metacontingency changes that strengthen or weaken adaptive or maladaptive behavioral contagion will eventually increase or decrease the rates of occurrence of associated, "tell-tale," population metabehaviors. Also, in the presence of very catalytic (perhaps synergistic) metacontingency changes, behavioral maladaption contagion may transition to exponential rates which will be observable in similar rate changes among relevant metabehaviors.

If sexual maladaption contagion has been catalyzed by intense pornographic stimulation of the U.S. population, the *resulting cultural damage* cannot be perceived without yet another molar concept. Increasing rates of sexual maladaption contagion (whatever the causes) must lead to increases in rates of *social entropy*. This conception is derived from the second law of thermodynamics (Fast, 1960; Rifkin, 1980). I define social entropy as: *The proportion of human behavioral energy, within a population, which is not available to build and maintain the culture—but functions as a drain upon it.* Generally, increases in social entropy represent a triple cost to afflicted cultures. The first cost is exacted by the loss of the culture's developmental investments in the behavioral repertoires of its impaired citizens, whether they be perpetrators or victims (rape, sex abuse, STDs, births to teens, etc.). The second cost comes in the form of the financial and human energy expenditures necessary to support, provide treatment to, incarcerate, or execute these individuals. The third cost relates to the effects of the impaired individuals' behaviors upon others with whom they interact (i. e., new instances of behavioral maladaption contagion). Without intervention, the theoretical effects of this self-feeding process are increasing rates of behavioral maladaption contagion and simultaneously more rapidly increasing rates of social entropy. Unfortunately, the summation of these three dynamic cultural costs are difficult to detect and to relate to particular metacontingency changes because related cost changes are normally incremental and they are delayed. Additionally, any attempt to tally these costs must contend with the likelihood that they combine synergistically. Therefore, the whole cost to cultural viability may be greater than the sum of these particular totals. The fact that these three classes of

costs of sexually transmitted disease, births to teens, births out of wedlock, rape, and child molestation are not easily calculable should not obscure the fact that their combined costs are enormous. They represent both unnecessary losses of present and future human energy resources and impairments to cultural viability.

Psychological Principles of Behavioral Contagion

The following are some of the psychological principles generally accepted as important causes of human behavior. They also represent classes of basic mechanisms that mediate population rates of many forms of behavioral contagion. The assumption of this field of psychological principles as operational during the pornographic stimulation of a population is a prudent empirical generalization. Theoretically, it is both parsimonious and highly plausible that any of the following principles, singularly or in various combinations, are partial determinants of the increasing rates of sexual maladaptation contagion in the US. Each of the following principles is numbered to assess their total.

The following elementary principles are strongly documented and have long been taught to the general public (Becker, 1971; Mawhinney, 1978; Patterson & Gullion, 1976); to high school students (Mawhinney & Petersen, 1990); and to college populations (Kazdin, 1994; Malott, Whaley, & Malott, 1997). These principles will not be given individual research citations because they are well known and generally accepted. Citations to research literature can be found in the previously referenced college textbooks (Kazdin, 1994; Malott, Whaley, & Malott, 1997). Physical stimulation of erogenous areas, sexual arousal, and orgasm are powerful *unconditioned reinforcers* [1]. In the *operant paradigm* [2], unconditioned reinforcers probabilistically increase the frequency of behaviors that produce them. For example, if an adolescent observes a pornographic sexual scene he may become highly sexually aroused. The high sexual arousal and specific sensations involved will *differentially reinforce* {3} those actions which produced them (i.e., observing, imagining, fantasizing, masturbating). The unconditioned reinforcers of sexual arousal and orgasm (should he or she masturbate) will be directly associated with whatever stimulus configuration is salient (sadoomasochistic, rape, pedophilia, or heterosexual/homosexual, etc.). The *respondent conditioning* paradigm [4] would predict that a salient constellation of sexual stimuli can acquire new *conditioned reinforcing* value [5]. (Barlow & Agras, 1973; Barlow, Reynolds, & Agras, 1973; Freeman & Meyer, 1975; Herman, Barlow, & Agras, 1974; Marquis, 1970; Rachman, 1966; Rachman & Hodgson, 1968; VanDeventer & Laws, 1978). If the acquisition of these new sexual reinforcers motivated actual interpersonal sexual experiences, other closely associated stimuli (olfactory, gustatory, cutaneous, and

visual) would also likely become conditioned reinforcers. With repeated conditioning trials (masturbatory or copulational/in vivo or imaginal), many associated classes of stimuli would be likely to increase in reinforcing power and to become sexual *discriminative stimuli* [6]. The *dualfunction of discriminative stimuli* [7] is well known. Discriminative stimuli not only increase the frequency of the units of behavior that produced them, but they also occasion other units of behavior that are reinforced *on some schedule* [8]. These complex and interacting conditioning paradigms can produce a constellation of sexual stimuli capable of reinforcing the behaviors that produced them and occasioning other *chains of behavior* [9] that produce more classes of sexual behavior and reinforcers. *Stimulus generalization* [10] is likely to occur within both operant and respondent paradigms. Therefore, both sexual arousal and sexual behavior chains are likely to occur in the presence of stimuli that are somewhat different from the original ones. *Response induction* [11] would also be expected to occur. Somewhat different responses to similar stimuli are likely to emerge. The result could be a greater diversity of stimuli capable of eliciting sexual arousal, which occasion increasingly diverse sexual behavior chains, which summate in behavioral/cognitive repertoires that are increasingly effective at producing more instances of sexual arousal and orgasm.

The literature of behavior therapy is rich with many cognitive behavioral and social learning principles that are commonly used to change sexual perceptions, emotions, arousal patterns, and behaviors. Therapeutic methods include *masturbatory conditioning* [12], in vivo and imaginal *desensitization* [13], *cognitive rehearsal* [14], *cognitive reinforcement* [15], *covert sensitization* [16], and *modeling and imitation* [17]. These methods have been used to therapeutically weaken sexual excesses and to strengthen sexual deficits (Craighead, Kazdin, & Mahoney, 1976; Kazdin, 1994; Redd, Porterfield, & Anderson, 1979). It is noted that variables used to change certain behavior patterns may not have been involved in their creation.

' During the 1970's research evidence appeared to be in strong support of conditioning principle involvement in sexual learning. However, after a detailed critical review of the research literature, O' Donohue and Plaud (1994) concluded that the literature, though improved, "is inadequate to support the vast weight of the diverse theories dependent upon the role of learning in sexual behavior" (p. 339). These researchers identified a variety of methodological problems within the existing literature and concluded that, although there is some support for both classical and operant conditioning of male sexual arousal, there is a need for more sophisticated research. Roche and Barnes (1998) have also recently questioned the strength of the data supporting the conditionability of human sexual arousal.

Although they concluded that many sexual arousal patterns appear to be acquired through operant and respondent conditioning in childhood or adolescence, that some unusual arousal patterns cannot be explained using these paradigms. They suggested that *Relational Frame Theory* (Hayes, 1994), or derived relational responding [183, may be an important mechanism for learning in human sexual arousal. Accordingly, arousal patterns may be influenced through conversations with others, or through sexual fantasies, when words and ideas leading to sexual arousal are associated with other words or ideas, thereby establishing equivalence.

In both coerced and cooperative sexual interactions, social learning principles in the form of modeling and imitation may combine with operant and respondent conditioning principles in powerful ways. These principles are naturalistically embedded in all sexual activities (fetishism, heterosexual, homosexual, pedophilia, sadomasochistic, bestiality, etc.). They are also influential during sexual arousal and masturbation to pornography. *Prepared learning* [19] (Seligman, 1970) is a concept used to describe how some behaviors condition more easily than others. A related concept is the *critical period* [20]. Critical periods are intervals along the developmental continuum during which time classes of behavior condition much more readily than at other times. For example the development of paraphilias appear rooted in late childhood and adolescence (Comer, 1995, chapt. 14). The strong correlation between sex and violence suggests that they serve as mutual *establishing operations* [21]. Malott, Whaley, and Malott (1997) define an establishing operation as "a procedure that affects learning and performance with respect to a particular reinforcer or aversive condition" (p. 147). Also, sexual stimuli sometimes function as *addictive reinforcers* [22] for some proportion of the population. One explanation of this phenomenon is that this segment of a population *habituates* [23] to (or develops a "tolerance" for) less intense classes of sexual stimuli and then works to acquire ("craves") classes of sexual stimuli that are more intense. Malott, Whaley, and Malott (1997) define an addictive reinforcer as one "for which repeated exposure is an establishing operation" (p. 161).

Social Psychological Principles

Behavior analysts have been appropriately careful about the research methods used to establish their data base. Criticisms of various traditional research methods are well documented (Sidman, 1960) and need not be reviewed here. Still, for the purposes of this analysis, it would be a mistake to exclude robust principles derived from a closely related traditional psychological science. The following principles are included only as *secondary* sources of support for predictions made

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from our own paradigm. As such, they may serve as a concurrent validity check upon our own findings and predictions.

The field of social psychology has identified a variety of principles that influence behavior (Myers, 1996). These principles can also be operational when individuals interact with pornography. There is a measurable *contrast effect* [24] for men who have recently looked at centerfold nudes. These men find "average" women less attractive. This effect can also extend to their own wives (Kendrick, Gutierrez, & Goldberg, 1989). Also, watching passionate sexual behavior in pornography can produce decreasing satisfaction with a person's own mate (Zillman, 1989). Contrast effects may also operate when the viewing of one extreme sexual activity such as rape, makes other less severe forms of coercion seem more acceptable or less deviant. The *availability heuristic* [25] describes how people judge the probability of certain events. Powerful or otherwise salient events (real or fictional) are easier to remember and can markedly alter individual's estimations of the future likelihood of similar events (Gerrig & Prentice, 1991; MacLeod & Campbell, 1992). For example, the man who views a vivid pornographic rape scene of a woman whose terror finally turns to passionate joy may overestimate the probability of a female's similar reaction to his own aggressive sexual advances. It is also thought that viewing aggression and sexual behavior has a *priming effect* [26] in that it causes the viewer to experience an increased frequency of violent or sexual thoughts (Berkowitz, 1984; Bushman & Green, 1990).

More than 200 experiments have demonstrated that repeated *mere exposure* [27] to novel stimuli increases individuals' liking and favorable rating of them (Bornstein, 1989). Persuasion of opinion or attitudes about various messages is enhanced through "good feelings." The *effect of good feelings* [28] upon the evaluation of messages is to increase the likelihood of their "acceptance" (Galizio & Hendrick, 1972; Petty, Schumann, Richman, & Stathman, 1993). In behavioral terms, the association of positive reinforcers with previously neutral stimuli tends to condition new positive reinforcers. In terms familiar to social psychologists, pornographic depictions represent the "messages" to the viewer and concomitant "good feelings" (sexual arousal) should serve to "enhance the acceptance of these messages."

Psychologists have clearly demonstrated both correlational and causal relationships between television violence and violence in the viewer (Bandura & Walters, 1963; Eron & Huesmann, 1980, 1985; Friedrich and Stein, 1973; Park, Berkowitz, Leyens, West, & Sebastian, 1977). Media portrayals of sexual violence will evoke imitation in some observers. The concept of *vicarious learning* [29]

(Bandura, 1969) further describes the fact that observers not only learn discriminative stimuli and associated behavior patterns, they also learn to expect certain reinforcing or punishing consequences. Social and cognitive psychologists use the concept of *scripts* [30] (Schank & Abelson, 1977) to describe the fact that people learn a complex set of behavior patterns appropriate to complex social settings by observing and/or experiencing the contingencies in their environments. Pornographic depictions provide a high density of opportunities to learn maladaptive expectations and associated behavior patterns (i. e., women enjoy being raped or treated in rough and disrespectful ways).

The principle of *social referencing* [31] suggests that when a correct response is not clear, individuals use the responses of others as cues for how they should deal with novel or ambiguous situations (Sroufe & Cooper, 1988, p. 300). Pornography can encourage acceptance of behavior patterns formally considered abusive or demeaning. *Behavioral confirmation* [32] refers to a form of self-fulfilling prophecy in which person A's expectations cause them to act in ways that influence person B to conform to person A's expectations. This social psychological principle is based upon research findings that in social interactions individuals often get what they expect (Olson, Roese, Sanna, 1996; Snyder, Tanke & Berscheid, 1977). This principle can operate within a population that observes others behaving in sexually promiscuous ways and then transmits these self-fulfilling expectations to their own potential sex mates.

Several classic social psychological studies of *norm formation* [33] in groups, may be considered analogs to cultural norm influences. These experiments use artificially induced consensus among the majority (experimental confederates) with the strong effect of producing conformity in the minority subject (Asch, 1955; Crutchfield, 1955; Jacobs & Campbell, 1961; Sherif, 1937). Social psychologists view the results of these experiments as striking because there were no observable contingencies of reinforcement or punishment in the direction of conformity to the group. By analog, the culture that showcases sexual stimuli in all of its media provides the implied message of majority consensus regarding the acceptability and normative status of the behavior patterns depicted. Changes in rates of sexual metabeaviors that conform to behavioral patterns depicted in the media would be predicted by social psychologists and social learning theorists. Such changes should also be predicted by behavior analysts. Finally, viewing abusive and violent sexual behavior can have a *disinhibiting effect* [34]. Disinhibiting effects refer to the reduction in a population's anxiety levels which formerly inhibited a forbidden behavior (Berkowitz, 1962). In behavior analytic terms, "disinhibition" may occur

because violent pornography suggests a change in prohibitive controlling *rule governed contingencies* [35](Malott, 1988).

Conclusions

Effective planned cultural evolution is not possible without the development of new science-based ways of identifying metacontingency changes and their probable effects upon cultural viability. This may be the penultimate methodological challenge for analysts as cultures evolve pellmell into the twenty first century.

I have attempted to evaluate the probable effects of pornography upon the US from new research-based theoretical perspectives, guided exclusively by some values of *applied* (Baer, Wolf, & Risley, 1968) cultural analysis: empiricism, pragmatism, and objectively improving the viability of the culture under study. The new theoretical perspectives are those of behavioral contagion and social entropy. The concept of behavioral maladaption contagion has been used to systematize a diversity of psychological principles (35 identified in this paper) and their probable effects upon sexual metabehaviors. Social entropy has been used to conceptualize the resulting impairments to cultural viability. These conceptions may connect known molecular cause-and-effect variables, unique metacontingency changes, correlated increases in maladaptive metabehaviors, and the resulting cultural costs in comprehensive and meaningful ways. Without such integrated theoretical perceptions, declining cultural viability will be experienced as a blizzard of aversive stimuli that defy understanding and incremental solution.

Correlation is not proof of causation. But what should cultural planners do when definitive research designs are impossible due to ethical constraints and when available research designs are poor at discerning such molar cause and effect relationships? The present analysis sharply illustrates this dilemma. It is traditional to call for more research and, of course, that is appropriate. However, more experimental analogs, cross-cultural comparisons, meta-analyses, or other quasi-experiments are unlikely to *incontrovertibly* answer questions about the real-life effects of various kinds of pornography viewing upon entire cultural populations. Cross-cultural comparisons of the effects of pornography are difficult because cultures differ in countless ways. Similar practices among different cultures may often have different outcomes because of the interaction of other concurrent catalyzing or inhibiting metacontingencies. In spite of these problems, Court (1984), presented some evidence that countries that allow violent pornography have shown increases in rape rates and that countries that restrain the availability of violent pornography have not experienced such increases. It impossible to make

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causal statements about these correlations, but Court concluded that there is sufficient experimental evidence that "a strong case can be made for the restraint of porno-violence in contemporary society" (p. 169).

The use of cultural within-subject designs (withdrawal, multiple baseline, or changing criterion, etc.) are appropriate cultural experimental paradigms, but the control of molar-level independent and extraneous variables is generally not feasible. A rare example of an ABA design occurred naturalistically in Hawaii and appears to support a causal connection between increases in pornography and sexual maladaptation contagion (Court, 1984, p. 163). From about 1964, when pornography became increasingly available in the US, until 1974 the state of Hawaii experienced a 900% increase in rape reports. A significant reduction in reports occurred between 1974 and 1976, when pornography was restricted. The restriction of pornography in Hawaii was removed in 1977 and reported rapes increased again. Unfortunately, the reversal condition was very short in this study and replicability is problematic. Other similarly designed within culture naturalistic experiments could be highly informative.

Many scientists and intelligent nonscientists believe that the connection between pornography and cultural damage in the US has not been proven. Others provisionally accept this causal hypothesis, but are so acculturated into the concepts of individual freedom and autonomous man (Skinner, 1971), that they oppose cultural efforts to reduce the prevalence and intensity of pornographic stimuli exclusively upon these philosophical grounds. Based upon liberalized Supreme Court decisions, many insist that the production and distribution of pornography is protected under the first amendment of the U.S. Constitution. Others demand that pornography be censored simply because they think it is obscene and/or it clashes with their religious values. As with many cultural analytic applications, the current one confronts difficult issues involving both methodology and values. The effects of pornography upon populations are certainly mediated by many cultural variables. Unfortunately, no one knows how long it will take to understand such complex interactions, or, if we ever will. There must be a way for cultural planners to make sensible science-based decisions in the interim.

In medical research, potentially dangerous drugs are approved for use only after extensive and rigorous study. There is no reason to exercise less caution before making *elective* metacontingency changes regulating potentially dangerous behavioral practices. In either case the scientific value system should be to guard against damaging false negative errors. Like medications, major behavioral practice changes should not be considered harmless (innocent) until proven guilty.

This is especially true when various research-based theories predict harmful - outcomes. Clearly, the elective decision to allow massive doses of pornographic stimulation of the U.S. population should have been approached with greater caution. Criticism of the deregulation of pornographic stimuli in the US can be based upon the following elements: (a) There was a lack of appropriate scientific conservatism in this elective cultural change; (b) from 1970 to date, there has been increasing evidence of harm, but science has not been able to fully resolve aspects of the harm verses no harm issue; and finally, (c) Given the increased evidence of harm, it is important to note that there have been no scientific demonstrations of *benefits* resulting from the intense pornographic stimulation of our population.

There are times when the products of science can best inform cultural planners and times when they cannot. Massive cultural changes resulting from the 1970 Commission report were based upon a relevant, but immature area of science. Without so much as one pilot study in the culture to be changed, a system-wide transformation was made. In any systematic research program, such a move would be criticized and dismissed as simple protocol error. In the realm of cultural planning such incompetence could lead to fatal cultural outcomes. It is in the nature of science that it may take generations to clarify complex cause and effect issues, if they are ever to be clarified. The newly emerging amalgam of applied cultural analysis and its important goal of furthering the survival of the culture under study will not soon resolve bewilderment and uncertainty over such matters; at times it may even deepen it. But when the findings of science cannot guide cultural planners, its conservative methods can.

Cultural planners will often need to make decisions based upon hints born of incomplete or mixed scientific knowledge and the vagaries of the history of cultural changes and outcomes. As in all such endeavors, bold and dramatic changes are best reserved for emergency conditions when more conservative actions are likely to fail. Therefore, it is my contention that historic culture-wide U.S. sexual metacontingency changes have also broken an elemental rule for cultural evolutionary success: *moderately conservative metacontingency change under nonemergency conditions*. There is now sufficient provisional scientific evidence to assert that America's elective cultural experiment with pornography was ill-advised and may be more damaging than we can presently assess.

Skeptics are fond of asserting that cultures do not evolve according to the rational plans of their populations. But the evolution of cultures will someday yield this promising mutation. A good step in that direction would be for cultural planners to exercise greater experimental caution before implementing elective culture-wide changes in metacontingencies involving noncontingent reinforcers

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(welfare entitlements), life-termination practices (at either end of the developmental continuum), and addictive reinforcers (the deregulation of illegal drugs and gambling), and so forth. The direct and iatrogenic effects of such metacontingency changes are poorly understood and they may significantly increase rates of various classes of behavioral maladaptation contagion and social entropy. Regarding pornography, I suspect that its relentless infusion into the US has been catalytic to numerous classes of sexual maladaptation contagion, thereby increasing social entropy and weakening this culture's viability.

The US may never elect to deprive itself of the rich schedule of powerful sexual and economic reinforcers gained through its methodologically flawed deregulation of pornography. However, this fact is immaterial to my conclusions and recommendation. The U.S. deregulation of pornography has provided a valuable object lesson on *how not* to use science to strengthen cultural viability. I therefore advise an experimental reversal (Sidman, 1960) of our culturally endemic pornographic self-stimulatory practices.

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