SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

Subcommittee on Science, Technology, and Space

Witness List*

Hearing on the Brain Science Behind Pornography Addiction
and the Effects of Addiction on Families and Communities

Thursday, November 18, 2004, at 2:00 p.m.,
in Room 253 of the Russell Senate Office Building

Panel I

Dr. Judith Reisman, Scientific Advisor, California Protective Parents Association, P.O. Box 15284, Sacramento, CA 95851

Dr. Jeffrey Satinover, P.O. Box 1183, Weston, CT 06883

Dr. Mary Anne Layden, Co-Director, Sexual Trauma and Psychopathology Program, Center for Cognitive Therapy, University of Pennsylvania, 3535 Market Street, 2nd Floor, Philadelphia, PA 19104

Dr. James B. Weaver, III, Professor, Virginia Polytechnic Institute and State University, Department of Communication, Shanks Hall (0311), Blacksburg, VA 24061

*Not necessarily in order of appearance.

Statement of Judith A. Reisman, Ph.D., President, Institute for Media Education

Testimony before the United States Senate, Subcommittee on Science, Technology, and Space of the Committee on Commerce, Science, and Transportation

on

"The Brain Science Behind Pornography Addiction and the Effects of Addiction on Families and Communities"

November 18, 2004

Good afternoon. Thank you for the opportunity to speak with you today. I am Judith Reisman, Ph.D., President of The Institute for Media Education, Scientific Advisor to the California Protective Parents Association and the Subcommittee on Junk Science for The American Legislative Exchange Council's April 2004 report.[1]

I specialize in the communication effects of images on the brain, mind and memory; fraud in the human sexuality field; and the addictive properties of sexually explicit images, commonly called pornography.[2]

My working, *scientific* definition of pornography is *measurable*: "intimate private-space behavior in public space forums, provoking psychopharmacological responses in viewers that puts the model and those s/he *represents,* at risk." See Appendix A.

Thanks to the latest advances in neuroscience, we now know that *emotionally arousing images imprint and alter the brain,* triggering an instant, involuntary, but lasting, *biochemical memory trail.*

This applies to so-called "soft-core" and "hard-core" pornography, which may, arguably, subvert the First Amendment by overriding the cognitive speech process.

Once our neurochemical pathways are established they are difficult or impossible to delete. Erotic images also commonly trigger the viewer's "fight or flight" sex hormones producing *intense arousal states* that appear to fuse the conscious state of libidinous arousal with unconscious emotions of fear, shame, anger and hostility.[3]

These media erotic fantasies become deeply imbedded, commonly coarsening, confusing, motivating and addicting many of those exposed. (See "the Violence Pyramid" at http://www.vbii.org/violence.html).

Pornography triggers a myriad of endogenous, internal, natural drugs that mimic the "high" from a street drug. Addiction to pornography is addiction to what I dub *erototoxins* – mind altering drugs produced by the viewer's own brain.

How does this 'brain sabotage' occur? Brain scientists tell us that "in 3/10 of a second a visual image passes from the eye through the brain, and whether or not one wants to, the brain is structurally changed and memories are created - we literally 'grow new brain' with each visual experience."[4]

Children and others who cannot read can *instantly decode and experience images, hence images are not speech.*[5] *In fact, erotic (any highly arousing) images commonly subvert left hemisphere cognition.*[6]

Since the 50s, as pornography became mainstreamed and pushed the envelope of normal sexual conduct, law enforcement reported that sex crimes mimicking comparable acts were being inflicted on women and children. (See OJJDP study) [7]

I have spent decades addressing the effects of pornographic "humor" and photos on children, fathers, husbands and wives and communities, much of which is found in my book, *"Soft" Porn Plays Hardball*, 1990,[8] in my U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention (OJJDP) report, *Images of Children, Crime and Violence in Playboy, Penthouse and Hustler*,[9] and in my white paper on "The Psychopharmacology of Pictorial Pornography: Restructuring Brain, Mind & Memory & Subverting Freedom of Speech" (http://www.dJjudithreisman.com/brain.pdf).

A basic science research team employing a *cautiously protective* methodology should study erototoxins and the brain/body. As with tobacco, these data could be helpful in public education and in legal change.

Testimony from victims and police commonly finds pornography to be an on-site-sex-abuse manual. [10]

An offensive strategy should be planned mandating law enforcement collection of all pornography data, as with guns, drugs, etc, at crime sites.

Judges, police, legislators and lawyers should be trained in the hard data of sexology fraud and erototoxins as changing the human brain, mind, memory at unconscious levels and therefore absent *informed* consent.

Congress should consider ceasing the funding of educational institutions that train their students via the flawed methodology of *Kinseyan "academic" pornography.*[11]

Congress should consider determining which sexology institutes have received financial support from *pornographers. Based on this obvious conflict of interest, their authority to* confer professional credentials or to hold themselves out as expert witnesses might be rescinded.

These initial steps can help reestablish the blessings of liberty and tranquility for our children, our communities and our country.

Thank you very much.

ENDNOTES

[1] See *vitae* for other details (http://www.drjudithreisman.org/vitae.htm).
[2] I also document the ways pornography commonly involve "estrus" displays, falsely presenting human females as non-human animals in "heaf' and triggering both anger and libido in male, even some female, viewers. The full definition relies upon the four scientific disciplines of Proxemics, Ethology, Neuropsychology and Psychopharmacology, seen ve in Appendix A.
[3] Richard Restak, (1988). *The Mind,* Bantam Books, New York. *"Inhibition rather than excitation is the hallmark of the healthy brain. If all of the neurons in the brain were excitatory we would be unable to do something as simple as reaching out for a glass of water,* " p. 283.
[4] Restak in Bill Moyers,' "Mind & Body: The Brain," PBSTV, February 1993.
[5] *On the undeveloped adolescent brain and its lack of cognitive maturity see Science,* "Neuroscience: Crime, Culpability, and the Adolescent Brain," Vol 305, Issue 5684, 596-599, July 2004. Shall teenagers under 18 get the death sentence--based in part on brain studies, pp. 596-599.
[6] See Gary Lynch in Restak (1984). *"The Brain,* Learning & Memory" The Annenberg/ CPB Collection, in his discussion of the way arousing images alter the structure of the human brain, WNET/NY, full documentation in 8. Exhibits 1 and 2.
[7]. Exhibit 1.
[8] Exhibit 2.
[9] Exhibit 3.
[10] John Rabun, now COO for the National Center For Missing & Exploited Children. See Senate Hearings on "Effect of Pornography on Women and Children," 1984. In that Senate hearing, Rabun testified that when arrested, "all, that is 100%" of rapists, pedophiles, etc., in their study possessed adult pornography, "such as Playboy, on up." Also see Dr. C. Everet Koop on pornography as a "crushing" health problem, in *American Medical News,* (October 10, 1986).
[11] Exhibit 3. See JA Reisman, *Kinsey, Crimes* & *Consequences,* 2003, pp. 160-180, esp. 170-'80: for the use of the SAR, Sexual Attitude Restructuring, as days, weeks or months of viewing pornography to be "accredited" as a certified sex educator, or to earn a Masters, PhD., etc., in Human Sexuality, AIDS Prevention and the like.

Appendix A: The Psychopharmacology of Pictorial Pornography Matrix

Subverting Freedom of Speech by Restructuring Brain, Mind and Memory

Scientific Disciplines	Primary Variables	Variable Measures	Variable Measures	Erototoxic Effects
Proxemics	***Space/Distance***	***Private Space***	***Public Space***	
Narrowly defined here: how organisms use space. Pornography is at risk private space behavior in public space forums. Use of distance and space as protection for the living organism.	Private space as 0" to 18" reserved for intimates, v. Public Space, 10' plus, danger of predators, unknown, vulnerable	Secure, home, yard, space under ones direct control. Direct eye contact, eg. Two lovers, mother & child, nudity OK, exposure OK, safe.	TV, film, Internet, library, circus, street, magazine. Space not under performer's control, unsafe, predators probable. Clothed, eye contact avoided, harm, weapons, crime possible.	Displays of intimate "private" space conduct, females as "provoking" sexual response in males; strippers, prostitutes, nude models in unsafe public space are in harms way. viewers are coarsened, frustrated, project anger to all females, children, etc. absent empathy, pity.
Ethology	***Estrus***	***Primate Female***	***Human Female***	
Narrowly defined here as the study of animals and human customs & character. Pornography lies about female custom, character and physiology, defining female as non-human places women, and their children, at risk of harm.	*Nonhuman* female primates enter "heat" with visible olfactory, colors, signs. *Women* do *not* enter "heat" are not *driven* to copulate.	Normal "heat" signals: red, swollen genitalia, buttocks mount poses, odor, eye pupils dilate, sexually solicits, copulation follows, no "commitments."	Normal "love" signals: smiles, skin flush or pale, only private display of reproductive, sexual characteristics; seeking permanent, relations, family, home, formal commitments.	Displays women and girls as primates in heat, as though in estrus, as nude, genital offerings in public space, creating risky, disordered, conduct with toxic, violent effects common for performers.
Neuropsychology	***2 Hemispheres***	***Right Brain***	***Left Brain***	
Narrowly defined here as the study of the way the two brain hemispheres process information. Visual data processed as "real" to brain, mind and memory.	Brain obeys "a law of strength" novel, anxiety provoking processed over gentle, normal, pastoral, Pictures dominate	Elicits emotional response, triggers sex, fear arousal, Images not text recalled. Excitatory transmitters dominate over inhibitory transmitters v healthy brain.	Elicits rational, logic, cognition, abstract thought, planning, text and speech recalled, low arousal, inhibitory transmitters create "healthy brain," delayed rewards, basis of Western, civilization.	Sex, violent media fraudulently teaches estrus, sex in public space. Left brain violated, overwhelmed by right brain images-- child decodes so that images are not "speech" and processing pornography is involuntary, non consensual, subverts freedom of *speech* to change brain.
Psychopharmacology	***Neurochemistry***	***"Flight or Fight"***	***A Polydrug Rush***	
Narrowly defined here as the study of excitatory & inhibitory transmitters, biochemical reactions to stimuli; Pornography researchers through brain's "100 million signals a second."	Pornography, violence triggers "flight or fight" in organism; sex/drug rush, mislabel, self medicating "high" as sexual arousal.	Erotic stimuli releases testosterone (brain steroid), sex/aggression endorphins (morphine like chemicals) oxytocin (bonding)…	nor epinephrine (adrenaline); glucose; oxytocin; dopamine; serotonin; phenylethylamine,, etc. emotional polydrug cocktail mix.	Pornographic fear, sex, shame, self induced drug "high." This "high," mislabeled as "sexual arousal" to women, children, men, boys, etc., triggers anger, sex assault, rape, incest. Reisman, 1991)

JA Reisman Matrix, 1990

Jeffrey Satinover, M.S., M.D.

All communications to
38 Steephill Road, Weston, Connecticut, USA 06883
TEL USA+1 203.221.0031 FAX USA+1 203.222.1656

PrincetonUniversity

Department of Politics
028 Corwin Hall, Princeton, New Jersey 08544
TEL USA+1 609.258.8326 FAX 609.258.1110
TEL USA+1 609.258.6423 voicemail 33326
Lecturer in Constitutional Law & Civil Liberties (on Leave)

Université Nice SOPHIA ANTIPOLIS
Laboratoire de Physique de la Matière Condensée

Physique pluridisciplinaire
CNRS U. M. R. 6622
Parc Valrose 06108 Nice Cedex 2
Tél Accueil 04 92 07 67 92 FAX 04 92 07 67 54
Candidat doctoral dans la physique théorique

Wednesday, November 17, 2004

Dear Senator Brownback, Honorable Members of the Committee:

It has always seemed self-evident that pornography is nothing more than a form of "expression." Its putative merits, lack thereof, or evils always therefore have been debated in terms appropriate to "expression," and our laws reflect as much. We argue over the "morality" of pornographic literature; its nature as "high" or "low" art; whether it has any "redeeming value." References to "works" of pornographic "literature" and "acts" of pornographic "dance" are enshrined at the highest levels of American constitutional jurisprudence—the words in quotation marks making it clear that the understanding of pornography as expression is foundational and unquestioned.

Senator, distinguished members, I respectfully submit to this committee that modern science allows us to see that this is an illusion: Pornography is mere "expression" only in the trivial sense that a fall from the Empire State building is a mere stumble—since it's hitting the ground that's fatal. Or, that cigarettes don't cause cancer, it's the burning smoke that's the problem.

Here is what I mean: Like cigarettes, that particular form of expression we call pornography, unlike all other forms of expression, *is a delivery system that has a distinct and powerful effect upon the human brain and nervous system.* Exactly like cigarettes, and unlike any other form of expression, this effect is to cause a powerful addiction. Like any other addiction, the addiction is both to the delivery system itself—the pornography—and to the chemicals that the delivery system delivers.

It may seem surprising that, at this juncture, I should speak of "chemicals", when one might be thinking instead of "sex." But, in fact, modern science allows us to understand that the underlying nature of an addiction to pornography is chemically nearly identical to a heroin addiction: Only the delivery system is different, and the sequence of steps. That is why heroin addicts in particular give up sex and routinely compare their "rushes" to "orgasms".

The chemistry involved is as follows: Upon viewing or reading the "expression", the pornography addict experiences an irresistible impulse to self-stimulation. Not so upon reading Melville, or Batman or *The Washington Post.* For the addict, this impulse has become more intense from pornography than from people he loves or who love him, and also requires ever more extreme forms of pornographic expression to achieve the same level of pleasure. Upon achieving climax, the brain releases opioids—chemicals that are the naturally occurring analogs to synthetic opiates such as morphine or heroin. It is to ever higher levels of these

opioids that the pornography addict has become addicted in tandem with the delivery system that ensures their release. Indeed, he—and today, with the internet, in ever increasing numbers, she—has become part of that delivery system—along with the pornographic "expression" itself. The pornography addict soon forgets about everything and everyone else in favor of an every more elusive sexual jolt. He will eventually be able to find it only among other "junkies" like himself, and he will place at risk his career, his friends, his family. He will indulge his habit anywhere and everywhere, at any time. No one, no matter how highly placed, is immune. And like all other addicts, the pornography addict will lie to cover it up, heedless of risk or cost to himself or to others.

In the year 2000, ABC-NEWS.com cooperated with the journal CyberPsychology & Behavior in a survey of 17,251 individuals. They found that 6% of those surveyed met formal criteria for a full-fledged internet pornography addiction. Another survey found that 41% of corporations had disciplined or terminated employees within the previous year because of severe problems with internet pornography. The next largest problem was chat rooms at 12%--and many of these involved sexual chat. All other internet problems were much less consequential, and at lower percentages, even gambling. These studies are but the mere tip of an ever growing iceberg.

Senators, honorable members, it was once possible with sincerity and rigor to maintain that pornographic expression had to be considered on the same abstract and elevated plane as any other form of expression, and that to do otherwise would gravely harm the foundation of our freedoms. It is no longer possible to do so without turning a blind eye to the plain evidence of neurophysiology and epidemiology. Like all forms of expression (and a great many other things) it is even more broadly speaking a kind of "stimulus". And it is as a stimulus of a most distinct sort that its operational effects can be best understood. These effects are "tuned" as it were, to the deepest and oldest biological impulses of human beings as physical organisms driven to survive via the reproductive act. Hence, the most intense pleasurable reinforcement is associated with sexual stimulation. Certain kinds of synthetic stimulation, properly designed and rapidly delivered can act just as effectively as physical stimuli upon the chemical-releasing centers in the brain (and elsewhere in the body); as effectively and immediately as though one had inserted an electrical probe into the brain, or a needle into the arm.

With advent of the computer, the delivery system for this addictive stimulus has become nearly resistance-free. It is as though we have devised a form of heroin 100 times more powerful than before, usable in the privacy of one's own home and injected directly to the brain through the eyes. It's now available in unlimited supply via a self-replicating distribution network, glorified as art and protected by the Constitution.

I will be glad to provide you and your colleagues with additional information and documentation.

Sincerely,

Jeffrey Satinover

Jeffrey Satinover, M.S., M.D.

JBS:sc

Additional Comments and Supporting Materials

From *Science*, 2001: [S]cientists have traditionally confined their use of the term to substances--namely alcohol and other drugs--that clearly foster physical dependence in the user. That's changing, however. New knowledge about the brain's reward system, much gained by super refined brain scan technology, suggests that as far as the brain is concerned, a reward's a reward, regardless of whether it comes from a chemical or an experience. And where there's a reward, there's the risk of the vulnerable brain getting trapped in a compulsion. "Over the past 6 months, more and more people have been thinking that, contrary to earlier views, there is commonality between substance addictions and other compulsions," says Alan Leshner, head of the National Institute on Drug Abuse (NIDA) and incoming executive officer of the American Association for the Advancement of Science, publisher of *Science*. ... **[says]** Howard Shaffer, who heads the Division on Addictions at Harvard. "...a lot of addiction is the result of experience ... repetitive, high-emotion, high-frequency experience. But it's become clear that neuroadaptation—that is, changes in neural circuitry that help perpetuate the behavior—occurs even in the absence of drug-taking." "Addiction occurs when a habit hijacks brain circuits that evolved to reward survival-enhancing behavior such as eating and sex," according to this article in *Science* 294, 980-982. "It stands to reason if you can derange these circuits with pharmacology, you can do it with natural rewards too," observes Stanford University psychologist Brian Knutson. Thus, drugs are no longer at the heart of the matter. "What is coming up fast as being the central core issue ... is continued engagement in self-destructive behavior despite adverse consequences," says Steven Grant of NIDA.

As reported in the British medical journal *Lancet* (Vol 364 July 31, 2004) Jenizbek Nazarilez, M.D., has had remarkable success—nearly 90%—in reversing severe opiate, cocaine and alcohol addictions in Central Asia by using an extraordinarily aggressive form of coma-inducing treatment based on the assumption that "...addiction has inhibited the production of endorphins." UN Secretary-General Kofi Annan, California Governor, Arnold Schwarzenegger, and the Dalai Lama have all pledged their support. Over 17,000 individuals have undergone treatment so far. The evidence is not only of critical importance with respect to drug treatment proper, but provides indirect evidence that the common neurochemical denominator of all addictions is opioid, placing the sexual addictions squarely at the center of interest and concern.

"...the impact of the opioid system for psychiatric disorders ... especially with regard to affective disorders and addiction...work in this area continued successfully". (See Falk Kiefer, Mirko Horntrich , Holger Jahn and Klaus Wiedemann, Is withdrawal-induced anxiety in alcoholism based on b-endorphin deficiency? *Psychopharmacology* (2002) 162:433–437). The intensity of alcohol withdrawal is

related to extent of endorphin depletion. To the extent that sex- and pornography addicts become endorphin-depleted; and that addictions tend to be multiple (alcohol, drug, sex and pornographic addictions are frequently found in combination; sex and alcohol binges come in tandem), the intensity of alcohol withdrawal and associated cravings may be expected to be increased by the pornography addiction and vice versa. Multiple addictions are neurophysiologically entangled and mutually reinforcing as they share a common chemical pathway.

The ready availability of internet pornography has made the progression from choice to habit to compulsion to overt addiction with destructive real-world consequences stark and inarguable. Furthermore, earlier delivery systems for pornography involved sufficient "friction" – effort; time between initiation of action and imprinting of the imagery in the nervous system; capacity to swiftly enough tune the imagery to the specific sensitivities of the recipient – that the barriers were on a statistical basis too high for most women. On a statistical basis, addiction to pornography was therefore overwhelmingly found among men and boys. With the advent of internet pornography, however, this friction has been drastically lowered. As a result, there has been an almost immediate and dramatic increase in the number of women who have been tracked as following the same sequence from choice to habit to overt addiction, including women with no prior involvement in sado-masochism who became addicted to it through internet pornography that eventually led to overt extra-marital engagements. "Some respondents described a rapid progression of a previously existing compulsive sexual behavior problem whereas others had no history of sexual addiction but became rapidly involved in an escalating pattern of compulsive cybersex use...Adverse consequences included...harm done to their marriage...exposure of children to online pornography or masturbation, career loss,...legal consequences." (Jennifer Schneider, A Qualitative Study of Cybersex Participants: Gender Differences, Recovery Issues and Implications for Therapists. *Sexual Addiction and Compulsivity* 7:249-278 (2000)

So well understood is the relation of the endorphin system to pleasure, that a device to directly stimulate release is being tested by the Russians and by University of Texas, Southwestern Medical School: Devices for Noninvasive Transcranial Electrostimulation of the Brain Endorphinergic System: Application for Improvement of Human Psycho-Physiological Status, Valery P. Lebedev, A.V. Malygin, A.V. Kovalevski, S.V. Rychkova, V.N. Sisoev, S.P. Kropotov, E.M. Krupitski, L.I. Gerasimova, D.V. Glukhov, and G.P. Kozlowski. *Artificial Organs*, 26(3):248–251 (2002) Blackwell Publishing, Inc.

The brain effect of pornographic imagery versus non-pornographic imagery is instant and immediately identifiable and differentiable between men and women. "SEEN IT!" - EFFECTS OF STIMULUS SEQUENCE ON EMOTIONAL

PICTURE PERCEPTION, Tobias Flaisch, Markus Junghoefer, University of Konstanz; Margaret M. Bradley, University of Florida; Harald Schupp, University of Konstanz; and Peter J. Lang, University of Florida. Poster Presentation on fMRI imaging of differential brain effects of rapid pornographic images in males and females. Society for Psychophysiological Research 44th Annual Meeting, October 20-24, 2004, La Fonda Hotel, Santa Fe, New Mexico, Poster Session I, Main Floor Sweeney Convention Center, Thursday, October 21, 8:00 p.m.-10:00 p.m.; also *Human Brain Mapping* 16:1–13(2002) using Quantitative EEG and Nature *Neuroscience* 7:4,411-416 (March, 2004) using fMRI.

fMRI Imaging shows that in addictive states, even *craving* is associated with distinct brain states in the addict (Am J Psychiatry 158:7, July 2001; Am J Psychiatry 2001; 158:86–95), in that part of the brain called the amygdala. Recall that the craving state is associated with endorphin depletion, and endorphins are the chemical pre-eminently associated with orgasm. Other studies show similar changes associated with both alcohol and other addictive cravings as well, unsurprisingly.(Effect of experimenter-delivered and self-administered cocaine on extracellular b-endorphin levels in the nucleus accumbens, I. Roth-Deri, A. Zangen, M. Aleli, R. G. Goelman, G. Pelled, R. Nakash, I. Gispan-Herman, T. Green, Y. Shaham and G. Yadid, *Journal of Neurochemistry*, 2003, 84, 930–938) A review of the new approaches to addiction shows that regardless of the *cause*, changes in brain structure are inevitable (AR Lingford-Hughes, SJC Davies, S McIver, TM Williams, MRC Daglish and DJ Nutt, Psychopharmacology Unit, School of Medical Sciences, University of Bristol, Bristol, UK British Medical Bulletin 2003; 65: 209–222):

> Alcohol and psycho-active substance misuse has far-reaching social, psychological and physical consequences. Advances in neuroimaging technology have allowed neurobiological theories of addiction to become better characterized. We describe the neurobiology of dependence, withdrawal, abstinence and craving states in alcohol, stimulant and opiate misuse. Structural neuroimaging techniques such as CT and MRI with new analytical approaches such as voxel based morphometry have shown wide-spread changes in stimulant and opiate abuse and atrophy, particularly in the frontal lobes, in alcoholism. Functional neuroimaging techniques such as PET, SPECT and fMRI reveal altered regional cerebral activity by all drugs of abuse. The neurochemistry of addiction, particularly involving dopamine, serotonin, opiate and GABA, has been studied with PET and SPECT and similarities between all drugs of abuse have been found such as reduced dopaminergic markers. The evidence derived from these advances in neuroimaging is likely to herald the emergence of new biological treatments in this important field.

A review of neuroimaging studies of how the brain changes as a consequence of addictive changes may be found at *Nat Neurosci.* 2004 Mar;7(3):211-4. Epub 2004 Feb 24.

Injection of cocaine alters endorphin levels (which leads to the feedback that eventually causes its depletion as in all addiction). This can be seen immediately on fMRI (Effect of experimenter-delivered and self-administered cocaine on extracellular b-endorphin levels in the nucleus accumbens, I. Roth-Deri, A. Zangen,

M. Aleli, R. G. Goelman, G. Pelled, R. Nakash, I. Gispan-Herman, T. Green, Y. Shaham and G. Yadid, *Journal of Neurochemistry*, 2003, 84, 930–938).

Not only does viewing pornography produce specific responses in certain brain areas as demonstrated using fMRI, the attempt to suppress that response is associated with activation of different areas of the brain (prefrontal and sublimbic regions), which suppression only occurs in non-addicted individuals, a marker for future studies. The *Journal of Neuroscience*, 2001, Vol. 21

References in Testimony Letter:

Lost in Cyberspace: The Web @ Work, DAVID N. GREENFIELD, Ph.D., and RICHARD A. DAVIS, M.A., CyberPsychology & Behavior, Volume 5, Number 4, 2002

GREENFIELD, D.N., Psychological Characteristics of Compulsive Internet Use: A Preliminary Analysis. CyberPsychology & Behavior 2:,403-412 (2000)

TESTIMONY FOR

U. S. SENATE

COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION

November 18, 2004

Mary Anne Layden, Ph. D.

Co-Director
Sexual Trauma and Psychopathology Program
And
Director of Education

Center for Cognitive Therapy
Department of Psychiatry
University of Pennsylvania
215-898-4106

Thank you, Senators, for allowing me to speak to you today.

Pornography, by its very nature, is an equal opportunity toxin. It damages the viewer, the performer, and the spouses and the children of the viewers and the performers. It is toxic mis-education about sex and relationships. It is more toxic the more you consume, the "harder" the variety you consume and the younger and more vulnerable the consumer.

The damage is both in the area of beliefs and behaviors. The belief damage may include Pornography Distortion, Permission-Giving Beliefs and the attitudes about what constitutes a healthy sexual and emotional relationship. The behavioral damage includes psychologically unhealthy behaviors, socially inappropriate behaviors and illegal behaviors.

Let me give some examples. Pornography Distortion is a set of beliefs based in pornographic imagery, sent to the viewer while they are aroused and reinforced by the orgasm. An example of Pornography Distortion would include beliefs such as "Sex is not about intimacy, procreation or marriage. Sex is about predatory self-gratification, casual recreation, body parts, violence, feces, strangers, children, animals and using women as entertainment." All of these are messages regularly sent by pornography.

Permission-Giving Beliefs are a set of beliefs that imply that my behavior is normal, acceptable, common and/or doesn't hurt anyone so I have permission to continue to behave in the way that I am. In all types of violence and addiction, Permission-Giving Beliefs are involved. Examples would include "All men go to prostitutes" "Women like sex mixed with violence" and "Children enjoy sex with adults". These particular Permission-Giving Beliefs are also common in pornography.

Both Pornography Distortion and Permission-Giving Beliefs increase the problem of mis-education about sexuality and relationships. For example, the myth that women are

sexually aroused by engaging in behaviors that are actually sexually pleasuring to men is a particularly narcissistic invention of the pornography industry. This is sexual mis-education.

The consequences of all these distorted beliefs are varied. For the viewer, pornography increases the likelihood of sexual addiction and they respond in ways similar to other addicts. Sexual addicts develop tolerance and will need more and harder kinds of pornographic material. They have escalating compulsive sexual behavior becoming more out of control and also experience withdrawal symptoms if they stop the use of the sexual material. The executive who goes to his office and logs on to the Internet porn sites at 9:00 AM and logs off at 5:00 PM is out of control and risks a great deal. Research indicates that 70% of the hits on Internet sex sites occur between 9-5 on business computers. Research also indicates and my clinical experience supports that 40% of sex addicts will lose their spouse, 58% will suffer sever finanacial losses, and 27-40% will lose their job or profession. Those whose marraiges don't end, may find themselves increasing dissatisfied with their spouses appearance and sexual behavior and increasingly sexually acting out which leads to an increase in sexually transmitted diseases. Research indicates that even non-sex addicts will show brain reactions on PET scans while viewing pornography similar to cocaine addicts looking at images of people taking cacaine. This material is potent, addictive and permanently implanted in the brain.

Those who use pornography have also been shown to be more likely to engage in illegal behavior as well. Research indicates and my clinical experience supports that those who use pronography are more likely to go to prostitutes, engage in domestic violence, stranger rape, date rape, and incest. These beahviors should not be suprising since pornographic videos contaning all of these themes are readily available and the permssion-giving beliefs of these pornographic videos reinforced by the orgasm say that all these behaviors are normal, acceptable, common and don't hurt anyone.

I have also seen in my clinical experience that pornography damages the sexual performance of the viewers. Pornography viewers tend to have problems with premature ejaculation and erectile dysfunction. Having spent so much time in unnatural sexual experiences with paper, celluloid and cyberspace, they seem to find it difficult to have sex with a real human being. Pornography is raising their expectation and demand for types and amounts of sexual experiences at the same time it is reducing their ability to experience sex.

The viewers are not the only ones to be affect by pornography. The performers are damaged as well although the performers were often damaged before they entered the industry. No healthy six-year-old growing up in a healthy home environment says, "I hope I grow up to be a porn star, stripper or prostitute". Those who now work in the porn industry were often little girls who got into their beds each night, rolled themselves into a fetal position and each night he came in a pealed her open. They work in the porn industry with its physical invasion and visual invasion because it feels like home. Once they are in the industry they have high rates of substance abuse, typically alcohol and cocaine, depression, borderline personality disorder which is a particularly serious disorder and dissociative identity disorder which used to be called multiple personality disorder. The experience I find most common among the performers is that they have to be drunk, high or dissociated in order to go to work. Their work environment is particularly toxic. One study on strippers indicated that they were likely to be punched, slapped, grabbed, called cunt and whore and to be followed home or stalked. Not

surprisingly, these women often work with bodyguards. This live form of pornography causes violence and the customers receiving these Permission-Giving Beliefs become carriers of these beliefs back to their homes, onto their jobs, into the street, onto the school yard. There they encounter women and children who do not have bodyguards.

The terrible work life of the pornography performer is often followed by an equally terrible home life. They have an increased risk of sexually transmitted disease including HIV, domestic violence and have about a 25 % chance of making a marriage that lasts as long as 3 years.

The viewers and the performers of pornography are the most direct victims. However, the children and the partners are also damaged by this industry. My clinical experience indicates that the spouses of porn viewers are often depressed, and are more likely to have eating disorders, body image disorders and low self-esteem. These wives can't function in the fake sexual world in which their husbands live. The wives may try to please their spouse by engaging in sexual behaviors that they find degrading. The wife may think that they can increase the sexual energy in the relationship and satisfy her husband if she views the pornography with him. My clinical experience is that these wives often get a short-lived boost in sexual activity but soon she notices that when her husband is having sex with her, he is turning around to watch the porn on the TV screen. She then realizes that he isn't having sex with her at all. He's masturbating inside her body while he is having sex with the women on the screen.

Some wives will resort to plastic surgery especially breast implants. Research indicates that women who get breast implants are four times as likely to commit suicide as other women are.

The children also show the damage. As pornography becomes normalized, it is left around the house. Children can get exposed to it. These are tender minds that are just developing their conceptualizations of sex. Normalizing abnormal sex increase the likelihood that they will engage in these behaviors. This increases the likelihood of early sexual experience and with it, the increasing risk of pregnancy, and sexually transmitted diseases. These children often think that all relationships are sexual. That sex is the core of their personalities and is the way in which you raise your self-esteem. This may be one reason that we see sexual addiction running in families. The distorted beliefs are not only reinforced but modeled as well. In one report in Australia, children who had become sexual predators before the age of 12, all had experienced pornographic material on the Internet and large number believed that the only use of the Internet was for pornographic material.

Children who have porn-viewing fathers complain that when he looks at them it feels "creepy". The parental gaze has now become the "porn gaze". The child of the porn user finds that every thing is now about sex.

There are no studies and no data that indicate a benefit from pornography use. If there were a benefit, then pornography users, pornography performers, their spouses and their children would show the most benefit. Just the opposite is true. The society is awash in pornography and so in fact the data are in. If pornography made us healthy, we would be healthy by now.

Effects of Pornography Addiction on Families and Communities

James B. Weaver, III

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Over the last three decades the status of pornography in the American entertainment marketplace has been radically transformed and expanded. Production and distribution of such materials has rapidly evolved from a "cottage industry" to a stable and well-refined mass-production enterprise. Spurred by new digital communication technologies, the marketplace for pornography has changed from one tailored to a subculture of connoisseurs into a mass market offering prolific content availability and diversity (ci'., Weaver, 1994).

Research on Effects of Pornography Addiction

It is against this backdrop that the question at hand – what is the impact of pornography addiction on families and communities? – is framed. Unfortunately, research directly assessing the impact of pornography addiction on f~mi1ies and communities is limited. However, it seems reasonable to expect – especially in this age of "cybersex" – that the compulsive and/or obsessive use of pornography could precipitate economic and social repercussions for individual consumers, theft families and coworkers, and the broader community.

Fortunately, there is a large body of social science research evidence that can inform our discussion (Weaver, 1994). The manifest content of pornography has been extensively examined, for example, revealing that (1) pornography's dominant theme is one of unrestrained human sexual promiscuity and (2) it's devoid of coercion and violent action (Brosius, Weaver, & Staab, 1994). Further, the findings of numerous studies suggest that pornography consumption promotes sexual deviancy, sexual perpetration, and adverse sexual attitudes (cf. Oddone-

Paolucci, Genuis, & Violato, 2000). Of this research, a series of studies demonstrating the effects of pornography within a repeated-exposure, delayed-measurement experimental paradigm are particularly illuminating for the question at hand (Zillmann, 2004).

Experimental Evidence: Repeated-Exposure to Pornography

The repeated-exposure, delayed-measurement paradigm simulates pornography consumption under relatively realistic conditions (i.e., daily or weekly exposure over an ex{ended period of time) and then delays impact assessments for days and weeks to rule out any transitory effects. The paradigm thus maybe considered an empirical surrogate for the phenomenon of pornography addiction in that it is sensitive to both (1) the consequences of cumulative exposure and (2) the formation of chronic effects.

Research employing this repeated-exposure paradigm has been conducted with both men and women drawn from diverse socio-economic backgrounds in the United States and Canada and has used pornography explicitly depicting all conceivable sexual activities devoid of violence performed among consenting adults. The findings are best summarized around the following themes: (1) Immediate reactions, (2) perceptions of sexuality, (3) sexual callousness, (4) rape proclivity, *(5)* family values and desire for progeny, and (6) sexual satisfaction.

Immediate Reactions

(a) Initial reactions of emotional discomfort and disgust dissipate rapidly with repeated exposure to pornography, eventually vanishing entirely.

(b) Initial hesitations to enjoy the material are rapidly lost with repeated exposure and give way to unadulterated reactions of enjoyment.

(c) Prolonged consumption of pornography eventually produces sexual and, more generally, excitatory habituation as well as boredom.

(d) Prolonged exposure to pornography stimulates a preference for depictions of group sex, sadomasochistic practices, and sexual contact with animals.

Perceptions of Sexuality

(a) Prolonged exposure to pornography leads to an overestimation of almost all sexual activities performed by sexually active adult.

(b) Prolonged exposure to pornography fosters increased estimates of the incidence of pre- and extramarital sexual activity, as well as increased assessments of male and female promiscuity.

(c) Prolonged exposure to pornography thither leads to the related perception of less honesty and trust, specific to covert sexual engagements, among intimates.

(d) Prolonged exposure to pornography fosters and strengthens the belief that promiscuous behavior is healthy, whereas sexual repression constitutes a health risk.

Sexual Callousness

(a) In men, prolonged exposure to pornography creates and enhances sexual callousness toward women.

(b) Prolonged exposure to pornography trivializes rape as a criminal offense. [Rape trivialization was ascertained in the lenient sentencing of convicted rapists. After prolonged exposure to pornography, men and unexpectedly also women, deemed rape a lesser offense.]

(c) Prolonged exposure to pornography trivializes nonviolent forms of the sexual abuse of children. [Effects were again measured in the lenient treatment of convicted perpetrators. Whereas all minor abuses, such as genital fondling and sexual cooperation in the absence of vigorous objection, were met with greater leniency, the brutal rape of children was not.]

Rape Proclivity

(a) Prolonged exposure to pornography increases men's self-acknowledged rape proclivity. Both noncoercive and coercive sexual displays have this effect.

(b) Psychoticism exacerbates the influence of pornography on men's rape proclivity. Psychotic men are strongly affected, whereas men with minimal psychotic inclination are not.

Family Values and Desire for Progeny

(a) Prolonged exposure to pornography spawns doubts about the value of marriage as an essential social institution and about its future viability.

(b) It also diminishes the desire for offspring in such settings. The strongest effect of this kind concerns the aspiration of female viewers for female children.

Sexual Satisfaction

(a) Prolonged exposure to pornography fosters sexual dissatisfaction among both male and female viewers.

(b) It also fosters, although to a lesser degree, dissatisfaction with an intimate partner's affection.

Conclusions

Taken together, the research at hand establishes that prolonged consumption of pornography – a critical condition presumably underlying pornography addiction – is a significant contributing factor in the creation of perceptions, dispositions, and behaviors that reflect sexual callousness, the erosion of family values, and diminished sexual satisfaction. Generalizing from these findings, we can anticipate that the compulsive and/or obsessive use of pornography should produce adverse consequences for individual consumers, their families and coworkers, and the broader community.

Consideration of the pragmatic implications of the research evidence at hand suggests, first of all, that the distorted messages of unrestrained human sexual promiscuity conveyed by pornography could be, as others have argued, a potent catalyst for abusive behaviors such as domestic violence and rape. Prolonged exposure to pornography, it must be remembered, results in both a "loss-of-respect" for female sexual autonomy and the disinhibition of men in the expression of aggression against women. Extensive research evidence shows that these two factors are prominent interwoven components in the perceptual profiles of sexually abusive and aggressive individuals.

A second implication concerns the extent to which pornography-induced misogynistic perceptions negatively influence the welfare of women in everyday, nonsexual circumstances. Repeated-exposure to pornography, the data reveal, fostered acceptance of the notion that women are subservient to men and promoted an adversarial, distrustful relationship between the sexes. Many voices have suggested that the most damaging consequences of prolonged consumption of pornography are evident in the ill treatment of women (e.g., employment discrimination, economic exploitation) simply because of their gender.

Finally, there is reason to suspect that pornography – with its seemingly factual, documentary-style presentation of sexual behaviors – has usurped most other socialization agents to become the de facto sex education for adolescents and adults alike. Thus, the likelihood persists that the main messages of pornography have a stronger influence on the formation of sexual dispositions, including coercive disposition, than alternative forms of sexual indoctrination. Within this framework, the desirability of pornography as a rudimentary "educator" about sex must be contemplated.

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