The Psychopharmacology of Pictorial Pornography
Restructuring Brain, Mind & Memory
&
Subverting Freedom of Speech

RESTRICTED TO ADULTS OVER AGE 18
SOME GRAPHIC IMAGES FROM MAINSTREAM PORNOGRAPHY

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INTRODUCTION

The expense of spirit in a waste of shame
Is lust in action; and till action, lust
Is perjur’d, murderous, bloody, full of blame,
Savage, extreme, rude, cruel, not to trust;
Enjoy’d no sooner but despised straight,
Past reason hunted, and no sooner had,
Past reason hated, as a swallow’d bait,
On purpose laid to make the taker mad;
Mad in pursuit and in possession so;
Had, having, and in quest to have, extreme;
A bliss in proof, --and prov’d, a very woe;
Before, a joy propos’d; behind, a dream.
All this the world well knows; yet none knows well
To shun the heaven that leads me to this hell.¹

Reviewers of The Bard on The Brain admonish neuroscientists to “learn about human nature from Shakespeare….No one who is genuinely interested in the …brain can afford to ignore William Shakespeare…who gave us significant insights into [its] workings.”² These “workings,” -the psychopharmacological components of pornographic lust—are poeticized in his sonnet, written between 1593-1599. Here the Bard³ defines “lust” in violent terms as “self-loathing,” “self-hatred,” as “perjured, murderous, bloody, full of blame.” While brain research just now begins to address the eroticisation of anger, shame and fear, Shakespeare warns us that the emotion labeled “lust” can cause madness and he commonly poses selfish lust as against the emotions of love, as in Romeo’s desire to “exchange…thy love’s faithful vow for mine.”

As a content analysis specialist, my task here has been to review evidence from the brain sciences to uncover if and then how pornographic images interfere with cognitive functions, including rational thought and its expression in “free speech.” For the purposes of this paper, pornography is not limited any currently accepted legal definitions but is characterized as a genre. That is, in its traditional sense, pornography is graphic depictions of sex or nudity, pandered for prurient appeal, rather than for serious literary, artistic or scientific purposes. Herein, pornography is objectively defined as private space behaviors displayed in public space forums in violation of self and species preservation. It proves “a very woe.”

THE THREE MAIN FUNCTIONS OF THE BRAIN

The arguments regarding the causal effects of pornography on the viewer’s brain and behavior are drawn from the fields of “neuropsychology” and “psychopharmacology.” At the core of these theories is the scientifically accepted view of the three main functions of the human brain as outlined below. Three-dimensional computer photographs allow investigators to “map” the “geography” of the brain at rest, in thought or action. This “mapping” documents the differences between right and left brain hemisphere functions as well as evidence of a given stimulus producing endogenous, psychotropic drugs. It will be shown that pornographic imagery is perceived by the brain as reality and stored as part of the brain’s psychopharmacological structure.

It is submitted that pictorial images have a more immediate and profound physical effect on the viewer than verbal or textual information, especially as visual pornography is designed to excite and stimulate the senses for prurient appeal. This idea of greater impact of depictions was the basis for a new federal law for the protection of children from Internet pornography and was noted in the brief of Members of Congress to the Supreme Court in *Ashcroft vs. ACLU*, et al. It will be argued that by its ability to immediately overpower cognition, reason, logic and other literate functions, pornographic imagery nullifies the meaning and spirit of “informed consent,” as well as the brain’s ability to monitor and correct unhealthy conduct, thus undermining the rights of said images to the same legal protections afforded to print information.

DENYING “EFFECT”: THE CELLULAR CONTENT OF IMAGES

Pornography Is Perceived By The Brain As Reality And Stored In The Brain As Memory

One of the acknowledged “fathers” of neuroscience, A.R. Luria, defined the three main goals and objectives of the human brain as:

1) To be alert, awake, aware of reality;
2) Collect and store environmental information; and
3) Monitor and correct our conduct for health and well-being.

It is only under optimal waking conditions that man can receive and analyze information, that the necessary selective systems of connections can be called to mind, his activity programmed, and the course of his mental processes checked, his mistakes corrected, and his activity kept to the proper course.

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5 Daniel Goleman, *Emotional Intelligence*, Bantam Books, New York, 1997, at 17. Since “pictures” are not processed in the brain hemisphere as “speech” this paper examines only pictorial pornography, as differentiated from text pornography.
7 Luria, ibid, in *Consciousness*, at 10.
Recent technological advances in the brain sciences enable researchers to identify rather precise locations for emotional impulses occurring in a test subject’s brain. In “Making New Cortical Maps” Pasko Rakic suggested that:

[T]he brain can be thought of as a map in which the position of its constituent neurons indicates what they do...[It has] structurally distinct cellular...areas responsible for functions as diverse as sensory perception, motor control, and cognition ...” [In fact it is now understood that] over 99% of all synapses in the brain use chemical transmission....[Excitatory] transmission at fast synapses occurs in less than 1/1000 of a second.

The reason such a paper as this is necessary, is due to the international inundation of sexual and sadosexual images and their direct, often fatal effect upon the conduct of millions of receivers of those images. On point, Sir Kenneth Clark in his A.W. Mellon lectures on the Fine Arts, writes in *The Nude*, that the effect of “desire” caused by viewing nudes “is an aspect of the subject so obvious that I need hardly dwell on it; and yet some wise men have tried to close their eyes to it. [N]o nude, however abstract, should fail to arouse in the spectator some vestige of erotic feeling.” Indeed. Then all sexual images “arouse” responses by viewers, including sexualized images of children.

Columbia University Art historian David Freedberg also documents images as “causal” in effect. In *The Power of Images* he explains:

People are sexually aroused by pictures and sculptures; they break pictures and sculptures; they mutilate them, kiss them, cry before them, and go on journeys to them; they are calmed by them, stirred by them, and incited to revolt. They give thanks by means of them, expect to be elevated by them, and are moved to the highest levels of empathy and fear. They have always responded in these ways; they still do. They do so in societies we call primitive and in modern societies; in East and West, in Africa, America, Asia, and Europe. These are the kinds of response that form the subject of this book, not the intellectual constructions of critic and scholar, or the literate sensitivity of the generally cultured. My concern is with those responses that are subject to repression because they are too embarrassing, too blatant, too rude, and too uncultured; because they make us aware of our kinship with the unlettered, the coarse, the primitive, the undeveloped; and because they have psychological roots that we prefer not to acknowledge. [W]e read in one Italian writer of 1584 that a painting “will cause the beholder to....desire a beautifull young woman for his wife when he seeth her painted naked.”

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8 Personal interview with Dr. Christoff Paselk, Director of Radiology at St. Joseph Hospital, Moers, Germany, November 20-23, 2001.


This paper then extends Freedberg’s discussion of the taboo against facing the cause-effect reality of images into the cellular geography of the brain, finding the unconscious, non-speech effects of nude and sexualized imagery.

**MAPPING THE BRAIN**

With the development of brain scanning, “thought” and “emotion” pictures measure one’s state of depression, suspicion, anxiety, irritation, joy, fear, hate or other feelings triggered by specific thoughts. This avalanche of knowledge in brain functions has emerged largely due to the technological “imaging” methods that measure and display the brain’s activity—feeling and thinking—as three-dimensional, full color computer graphics. One of the most advanced of these graphic brain scanning technologies is the SPECT scanner (sample seen at left).

With the advent of the SPECT scientists can finally see what happens in different parts of the brain “when you try to activate them.” The brain-emotion-memory interdependency is clear and measurable via imaging technology. The fictional fMRI (magnetic resonance imaging) and PET (positron emission tomography) and now SPECT, allow scientists to “correlate brain functions with abnormal behaviors.”

Through this new technology, scientists suggest that emotion, awareness, memory and behavior are so closely connected in the structure of the brain, that each interacts with the other, a useful concept when addressing emotions triggered by pornography as behaviorally “causal.” Pornography will elicit fear, shame, anger and lust in many people. Reed (1990), Coleman (1988, 1990) Carnes, (1983, 1989, 1990) and others have reported that anxiety commonly increases what is mislabeled as “sexual arousal.” Lynch points out that sensory input that is strong enough or repeated often enough produces an electrical impulse in a neuron that stimulates the release of chemicals that either excite or inhibit other neurons. This Lynch reports as the pattern of learning and memory.

In states of sexual or fear arousal (integral to the pornographic psychopharmacological experience) Margaret Kemeny reports, “we get an adrenaline rush, our pupils dilate, and our heart starts to race. That’s adaptive, because it promotes the physiological responses.” Neurobiologist David Felten says: “when you’re frightened, for example, there’s a huge

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13 Daniel G. Amen, *Change Your Brain, Change Your Life*, Times Books, New York, 1998, “Images Into the Mind: SPECT “A radioactive isotope is bound to a substance that is readily taken up by the cells in the brain…A supercomputer then reconstructs off line images of brain activity levels. The elegant brain snapshots that result offer us a sophisticated blood flow/metabolism brain map. With these maps, physicians have been able to identify certain patterns of brain activity that correlate with psychiatric and neurological illnesses. SPECT studies belong to a branch of medicine called nuclear medicine. SPECT studies actually show which parts of the brain are activated when we concentrate, laugh, sing, cry, visualize, or perform other functions...These images are helpful for picking up areas of overactivity [versus] average activity everywhere else.” at 14-18.


outpouring of adrenaline and noradrenaline that form the sympathetic nervous system and the adrenal glands.”

But this process is notably anxiety-provoking and maladaptive if it results in mislabeling fear and shame as a sexual high.

**AVOIDING NEOCORTICAL INTERFERENCE**

Seeing an object excites a group of cell assemblies that call to memory the attendant excitation experienced by the original event. As fear and alarm are a part of pornographic or sexual abuse experiences, even incestuous memories could trigger unconscious sexual “arousal” due to the association with a victim’s fear of powerlessness, personal harm, and humiliation. Goleman described some of the findings of Joseph LeDoux a neuroscientist, at the Center for Neural Science at New York University. Says Goleman:

“Anatomically the emotional system can act independently of the neocortex,” LeDoux told me. "Some emotional reactions and emotional memories can be formed without any conscious, cognitive participation at all." The amygdala can house memories and response repertoires that we enact without quite realizing why we do so because the shortcut from thalamus to amygdala completely bypasses the neocortex. This bypass seems to allow the amygdala to be a repository for emotional impressions and memories that we have never known about in full awareness.”

McLean, who first identified the limbic system as the brain’s emotional center, links it to the “Paranoid Streak in Man:”

*Man relies largely on vision to relieve his uncertainty about the nature of things…Given the seed of suspicion, the human mind is capable of developing any kind of paranoid hybrid …The emphasis given to the capacity of vision both to arouse and allay suspicion should not imply an insignificant role of the other senses in this respect…[There is] an unpleasant feeling of fear attached to something that cannot be clearly identified.*

Gary Lynch of the University of California at Irvine points out that a word or sight, libidinous or spiritual, can immediately alter brain structure: “*In a matter of seconds, taking an incredibly modest signal, a word… which is in your head as an electrical signal for no more than a few seconds, can...leave a trace that will last for years.*”

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17 Moyers, Ibid., at 215.
19 Paul McLean in *Consciousness*, at 24-25
Indeed, pornographic stimuli create “an unpleasant feeling of fear” attached to “uncertainty about the nature of things” and paranoid “seeds of suspicion.”\textsuperscript{21} An example follows of the “modest signal, a word” which has left a “gut” memory that “switched on” when one brain damaged patient was asked to describe a violent photograph she had seen.

[A brain damaged subject was presented with] emotionally charged photos --a girl on fire following a napalm attack or a man with his hand severed and blood dripping from the wound -- interspersed with bland photos of trees or random patterns with no particular significance. To measure this "gut" memory, Damasio looked at changes in skin conductance -- the "sweaty palms" reaction used to detect changes in emotional state. \textit{...the photos elicited enormous changes in skin resistance...When [the patient was] asked to describe [the emotionally charged pictures] the skin response would switch on.}\textsuperscript{22} (Emphasis added.)

Remembering an arousing sight or sexual experience can revisit the original arousal state, as seen in many war and rape victims as Post Traumatic Stress Disorder (PTSD). Restak explains:

Of all our senses, sight is the most likely to involve recall. And the more bizarre the visual image the more likely we are to see and remember it....To Aristotle, this formation of mental images was like tracing with a signet ring on wax.\textsuperscript{23} (Emphasis added.)

**INSTANTLY DECODING PHOTOGRAPHS & NOVELTY**

Neurologically, the more novel, bizarre, odd or grotesque an image is,\textsuperscript{24} the more it creates confusion, thus anxiety and often fear, the more likely the bizarre stimuli will be stored in the nervous system first as a “mismatch of schema.” The human need to know and understand ones surroundings means that bizarre images challenge and attract our brain’s attention and memory. Fine arts photography Professor, Dr. Richard Zakia, reiterates that even the most poorly created images automatically \textit{cause an arousal}, overcoming text:

\textit{[P]hotographs are excellent in fulfilling that dimension of language called arousal, but not in expression or description .... We learn from photographs -- single photographs, photographs in sequence to form a narrative, slides projected side-by-side...films and video .... Picture[s] are immediately organized in}

\textsuperscript{21} Extensive documentation is available upon request regarding direct harms to the class “children” and “women” -- from “rough sex” death data to the testimonies and records of sex crimes associated with pornography, etc.
\textsuperscript{22} \textit{Science Magazine}, “New Clues to Brain Dopamine, Control, Cocaine Addiction,” February 16, 1996, at 813.
\textsuperscript{23} Richard Restak, \textit{The Brain}. New York: Bantam, 1984. Restak said that of all our senses, sight is the one most likely to involve recall. And, “However you feel about the “imageless thought” argument, there is no denying that the formation of vivid mental pictures makes remembering easier” (at 197). Note, in a meeting in Washington, DC, Dr. Restak and I discussed the issues raised here, and the "Four-Tier" model (Appendix A), and both agreed on the realistic analysis of these concepts and on the shaping role of pornography and media in society.
\textsuperscript{24} This phenomena, called, “mismatch of schema,” accounts for much of the fascination with pornographic stimuli.
perception without the need for further cognitive effort or attention.\textsuperscript{25} (Emphasis added.)

Ones childhood neurochemical pathways\textsuperscript{26} are part of our biological memory.\textsuperscript{27} Educational psychologist Jane Haley notes, "large areas of uncommitted brain tissue can be molded...to the demands of a particular environment."\textsuperscript{28} Again, says MacLean, the brain cannot distinguish real from false pictures:

\textit{When nature gave man the prefrontal neocortex for anticipation and connected it with his cortical areas, she failed to provide a radar antenna and viewing screen.}\textsuperscript{29} … [Humans, like all animals, believe what the eyes see. Gary Lynch and his Irvine University team found] biological evidence that learning involves a physical change in the circuitry of the brain… [T]he brain processes a visual image, the signal from the screen flashes though the eyes and rushes through the brain in 3/10ths of a second.\textsuperscript{30} (Emphasis added.)

Any confusing image or experience is processed as “novelty” and the brain’s response to novelty is attention! All pornography is experienced as provocative “novelty” initially. Note the need to change the novelty stimulus (the “centerfold”) and her surroundings and trappings regularly. Once the brain adjusts to one provocative stimuli the pornographer will substitute another and another and another.

Unlike the sculptor Pygmalion (left) who carved his personal female ideal with whom he fell in “love,” (Venus brought her to life as his ideal creation) recall that pornographic sexually “provocative” images are created by other men for mass consumption. Art historian David Finn asks, if “the sight of a statue, indeed the mere photograph of a statue, can call up the sense of touch and stir up sexual desire, what does that say about our connection to art?\textsuperscript{31} indeed, our connection to pornography?

To “provoke” is “to make somebody feel angry or frustrated.” One is not “provoked” to joy, happiness or love. Sexual images have as their center core of truth, their ability to provoke to anger, hostility, distrust—and hatred in some more extreme situations.

\textsuperscript{26} Ibid. J.L. Colnel, The Neonatal Development of the Human Cortex, The Baltimore Sun, April 14, 1983. Writing in Brain and Psyche, neuroscientist Jonathan Winson of Rockefeller University reports on experimental studies which have found that our brains "compare every experience we have with ring-or rod-shaped objects to every previous experience we have had with things shaped like that--from genitals to guns and garters--simply as part of its automatic routine.“ Do neuronal connections of similarly shaped objects like guns and genitals coalesce during our sleeping states, bringing us dreams, triggering neuroses learned “in childhood [which] are difficult to treat...later?”
\textsuperscript{27} David Aitken, “New Theory Sheds Light on the Unconscious,” The Baltimore Sun, April 14, 1983.
\textsuperscript{29} Ibid, MacLean, Ibid., Consciousness at 25.
\textsuperscript{30} Ibid, Moyers, The Brain, Learning and Memory.
Mass media is the main source of false imagery—novelty—especially as it relates to female images. In his classic work, Manwatching, sociologist Desmond Morris observed the common technique of distortion of illustrations of “beautiful” young women. While most people are now aware of the airbrushed, if not silicone implanted breasts in early nude “centerfold” photographs,” Morris points out that pin-up artists typically exaggerated the length of female legs to create the illusion of teen-as woman. In other pornography, like Playboy, breasts have been systematically drawn onto the body of a small tyke as child-woman in cartoons and in illustrations to sexually arouse the confused consumer. Morris writes about "Metasignals":

“Many Western artists depict beautiful girls as having supernormally long legs. This becomes clear whenever a pin-up drawing is compared with its original model. [at left]. This …appears to be [because] as schoolgirls reach sexual maturity they undergo dramatic leg-lengthening: and the artists, by extending this process, make girls seem even more sexual and therefore appealing.”

Is Morris really unaware that the procedure he discusses, trains consumers to “feel” schoolgirls as sexually appealing at the cellular level? Morris adds that such “Supernormal Stimulus” as these elongated legs are “the basis of most forms of entertainment.” So desiring teen-age girls becomes emotionally entertaining, although “why” this is so is never cognitively clear to the manipulated consumer.

**RELEASING “INHIBITORY” TRANSMITTERS IS A BRAIN “REWARD”**

This is not the venue to address the history of misogyny in “elite” art, except to note that hatred and fear of women and its fallout in mistreatment of children has a significant heritage among the elite, where “artistes” associate women with evil, death, impotence, witchery and the like (seen at left). What is new and of great concern is the mass media marketing and mainstreaming of pornography—literally restructuring the national brain to feel fear and malevolent intent toward women and children.

Neuroscientist Peter M. Milner’s description of the organism’s response to novelty, lends itself to a fuller understanding of the way one becomes habituated and then addicted to arousing pornographic and other fear-inducing what Milner calls “mystery objects.”

In a totally unfamiliar situation, animals respond as they do to an innately recognized danger signal. As the situation becomes somewhat more familiar, however, the fear or vigilance is attenuated by habituation, releasing an underlying attraction to mystery objects. (Emphasis added.)

Consider how Milner’s following explanation of the “effects” of neuronal firing would apply to pornographic stimuli.

The firing of these neurons has a number of effects. If the stimulus they represent was followed originally by reinforcement, the neurons acquire associations with … the reinforcement. If, on the other hand, the neurons represent a stimulus of no motivational interest, they acquire no motivational associations, and their activity provides no encouragement to the response being planned, which then may be abandoned (Emphasis added).

That is, if pornography stimulates sexual acts (masturbation, sodomy, sexual intercourse, etc.) and if we understand that these sexual acts result in “orgasm” (the body’s most powerful “reinforcement”), than it stands to reason that ones “motivational interest” in viewing pornographic materials (a billion-dollar industry) leads to the acquisition of “motivational associations” to orgasm. Clearly then the “rewarding” pornographically triggered orgasm, regularly reinforced by novel new pornographic stimuli, is seldom “abandoned” unless the users are equally driven by the sensate and cognitive demands of conflicting values and controls.

Milner’s further observations of addiction to novelty are especially applicable to the response to pornography. Simply by releasing inhibitory transmitters, pornography (or television, film and other highly evocative media) becomes its own reward so to speak. These are powerful change agents indeed.

As discussed earlier, release of the response system from inhibition is a characteristic of reward, so it may be said that unfamiliar stimuli have a rewarding component. It is even possible to become addicted to novelty and uncertainty, which may explain why [pornography]…and gambling are both multi billion-dollar industries. Most stimuli become less attractive, however, as they become familiar and predictable….The rewarding effect of experiencing new things diminishes as the novelty wears off, but loss of response due to habituation must, of course, be reversible in case the stimulus should later become important for the well-being of the animal….Thus, novelty has an effect similar to that of reward, enabling animals to explore and add to their stock of … relationships.  

(Emphasis added.)

**IMAGES AS REAL IN BRAIN-MIND-MEMORY**

Consider the child pornography, or if you prefer “erotica” you have just studied in the previous pages. Such imagery is uniquely powerful because, perceived by the brain as a form of its own reality, its false information and associated disinhibiting neurochemical “rewards” will often retain lasting effects on memory. During lectures on this issue, after showing slides such

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as those in this paper, magazine users have confirmed that they quickly recall “cartoons” and photographs seen decades ago, when they are seen in context. One Canadian psychologist insisted there were no child sex cartoons in Playboy. After viewing 80 such slides in my lecture to the British Psychological Association, he suddenly recalled most of these child images in his “reading.” “However,” said the psychologist, “I never realized these were pornographic child cartoons until you gathered them together in one place! I am appalled.”

Drs. Restak, Edward Sheridan, MacLean and other specialists, agree that the scholarly data find no apparatus to distinguish real images from media fantasy. The brain processes as real the bizarre images that the eyes see. Hence, measurable states of arousal registered as lust, shame, fear and the like will obtain, whether one sees a “virtual” or a real pornographic image. Says Paul McLean, when ethologists use a dummy animal, a decoy in their experiments in the field or laboratory, the dummy, or even just a fragment of a dummy, triggers others of the species to engage in "an instinctual form of (sexual) behavior by the animal... Indeed, a mere phantom is sometimes sufficient to trigger the entire copulatory act”

In his investigation of animal responses to brain stimuli, E. Roy John confirmed MacLean’s findings, citing scores of brain studies which find the connection "between the senses and memory in each region: the more [and earlier] a brain region senses an event, the more it remembers it.”

Electrical stimulation of specific areas of the cerebral cortex "conjures up images of scenes witnessed... in the past.” Restak observes that the close proximity of the language, vision and hearing association areas (seen here) have interlocking "pathways for the storage and retrieval of memories that include several types of stimuli" with adjacent cortical areas controlling both aggression and sexuality.

Learning and remembering, are brain behaviors that create and extend neurochemical pathways, changing brain circuitry, thought and memory. By 1889 scientists understood that:

“[F]eeling is a stimulus to muscular action....ideas act as motors...[and] It may be laid down as a rule, that, if any two mental states be called up together, or in succession, with due frequency and vividness, the subsequent production of the one of them will suffice to call up the other, and that whether we desire it or not.” (Emphasis added.)

34 Personal conversations, consultations, circa February 1993, Washington, DC.
37 Ibid., Ackerman, at 27.
MILLISECONDS TO COMPREHEND AND DECIDE

The psychopharmacological evidence of image processing is not altered by the imprudent claim that one can “turn off the TV switch” if one is offended by the violence and/or sadosexual “teaser” images flashing by on the screen. Says Goleman:

*Other research has shown that in the first few milliseconds of our perceiving something we not only unconsciously comprehend what it is, but decide whether we like it or not; the "cognitive unconscious" presents our awareness with not just the identity of what we see, but an opinion about it. Our emotions have a mind of their own, one which can hold views quite independently of our rational mind… Those unconscious opinions are emotional memories; their storehouse is the amygdala …the very same neurochemical alerting systems that prime the body to react to life-threatening emergencies by fighting or fleeing also stamp the moment in memory with vividness …The more intense the amygdala arousal, the stronger the imprint; the experiences that scare or thrill us the most in life are among our most indelible memories. This means that, in effect, the brain has two memory systems, one for ordinary facts and one for emotionally charged ones.*

(Emphasis added.)

*Without exception, ones dominant memories are emotional, not cognitive.*

PORNOGRAPHY’S EFFECT ON THE DEVELOPING BRAIN

This theory has particular application in the context of children’s exposure to pornography. If the brain has two memory systems, “one for ordinary facts and one for emotionally charged ones,” what is the legal significance of a “back alley” to imprinting children’s brains-minds-memories with visual pornographic stimuli--especially when the child can barely read and cogitate?

This often haunts the victim who has no waking rational awareness of his or her victimization but who had been repeatedly victimized in childhood:

*[The amygdala] matures very quickly in the infant’s brain…long before other brain structures [like] the hippocampus, which is crucial for “information” and narrative memories, and the neocortex, seat of rational thought. *…*[The amygdala often] frantically commands that we react to the present in ways that were imprinted long ago…[based on] a few spare elements of the [long past] situation.*

(Emphasis added.)

LeDoux’s work informs the legal issues surrounding ”speech” versus children’s exposure to pornography in the child’s home or, of late, in public libraries and on mainstream television.

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40 Goleman, Ibid., at 22. Emphasis added.
41 Goleman, Ibid., at 21.
Memories are stored in the amygdala as rough, wordless blueprints for emotional life. Since these earliest emotional memories are established at a time before infants have words for their experience, when these emotional memories are triggered in later life there is no matching set of articulated thoughts about the response that takes us over.\textsuperscript{42} (Emphasis added.)

If the undeveloped child brain is psychopharmacologically altered by pornographic stimuli during waking and sleeping, this would violate claims of informed consent as it structurally alters the neurochemistry of the child’s brain, the child’s sense of self and of reality.

Children react with fear to the stimulus of sexual touch and sexual scenes. Fear is a necessary reaction by the normal child organism to sexual stimuli, for their immaturity leaves the child completely without the cognitive or emotional tools to respond to sexual cues or touch.

Children’s exposure to sexual triggers would produce greater or lesser states of alarm, that is trauma, resulting in "altered neural systems" with a low probability of the child victim being aware of the trauma that has altered her or his brain, mind, emotions and memory. A specialist in child trauma, Bruce Perry, M.D., Ph.D., discusses child sexual abuse as setting off alarm mechanisms in children that impair the victimized child’s cognitive and emotional development. Above is a schematic taken from ChildTraumaAcademy.com, which offers on line courses in “Brain Development and Child Trauma,” developed by Perry and his colleagues.

Perry’s schematic should be seen in concert with the graphic (left), taken from the National Institute of Health Smithsonian exhibit on “The Brain,” stressing the processing differences between the adult and child brain, specifically the child’s “gut” emotional responses to fearful or confusing stimuli.

Teens [and children] process emotions differently than adults. Viewing emotional images...teens...activated the amygdala, a brain center that mediates fear and other “gut” reactions, more than the frontal lobe [rational, cognitive].\textsuperscript{43}

So, how is the developing child’s brain restructured by the pornographic release of inhibitory transmitters as well as its vision of reality? Such states

\textsuperscript{42} Goleman, Ibid., at 22.
\textsuperscript{43} Image and text taken from the National Institute of Mental Health No, 01-4929 at The Brain exhibit at the Smithsonian, December 29, 2001, co-sponsored by the NIMH and the Smithsonian.
of sexual or fear arousal (a child’s response to a flash of pornographic stimuli), says neuropsychologist Margaret Kemeny, trigger alarm and an “adrenaline rush, our pupils dilate, and our heart starts to race.”44 Neuroscientist, Martin H. Teicher addressed the devastation of early abuse in *The Scientific American*, March 2002.

New brain imaging surveys and other experiments have shown that child abuse can cause permanent damage to the neural structure and function of the developing brain itself. This grim result suggests that much more effort must be made to prevent childhood abuse and neglect before it does irrevocable harm to millions of young victims.45

It would be critical to society to eliminate those media that are subversive of child welfare. Children and others who cannot read can still instantly decode, “feel” and experience images (e.g.: ice cream, cake, people, animals, perhaps sexual acts). Such largely right hemisphere visual and non-speech stimuli are decoded in any language, entered into long-term conscious or unconscious memory and replayed later by young and old alike. For, while children cannot choose for themselves their level of pornographic exposure, the ubiquity of sex offenders suggests that despite mature cognitive experience, adults who do choose are still susceptible to pornographic “impulses” that elude rational control (this is not to be construed as an excuse however for bad or criminal conduct). Finally, in closing the discussion of the role of pornographic stimuli in creating a false reality, in “Sweet Dreams Are Made of This,” Peter Stern summarizes the sleep research reported in *Science*.46 “Sleep has been implicated in the plastic cerebral changes that underlie learning and memory. Indications that sleep participates in the consolidation of fresh memory traces come from a wide range of experimental observations.”47

Again, consider the orgasm rewards inherent in the prior images when addressing the sleep reinforcement of these nonconsensual stimuli. R. Stickgold, and his team48 confirm that our waking observations are commonly relearned in sleep, reinforcing both consensual and non-consensual (sometimes reenacted as nightmares) waking experiences. In sleep, “the brain cements connections between a day’s events and stored memories,” especially pictures. 49

Evidence supports a role for sleep in the consolidation of an array of learning and memory tasks….*It is 200 years since David Hartley first suggested that dreaming might alter the strength of associative memories…*Recent developments in molecular genetics, neurophysiology, and the cognitive neurosciences have produced a striking body of research that provides converging evidence for an important role of sleep in learning and the reprocessing of memories.50

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46 *Science Magazine*, November 2, 2000, at 1047.
48 R. Stickgold, Laboratory of Neurophysiology and Department of Psychiatry, Harvard Medical School, Boston, MA 02115, Emphasis added.
It is largely accepted by neurologists that the brain can only process few of the millions of messages it receives each moment. “The law of strength” means that the most intense arousal will be ‘paper-clipped’ to its stimuli and emotion and then filed away in our brain’s memory database. Adolph Hitler aimed his messages to the right brain; “propaganda must be addressed to the emotions and not to the intelligence … vicious and gruesome, with lurid photographs… sexual and physical…the masses need…a thrill of horror.”

Dr. Daniel Goleman's groundbreaking book, *Emotional Intelligence*, from which the diagram here is taken, describes the electrical and chemical route taken by images to reach the brain.

A visual signal first goes from the retina to the thalamus, before it is translated into the language of the brain. Most of the message then goes to the visual cortex, where it is analyzed and assessed for meaning and appropriate response; *if that response is emotional*, a signal goes to the amygdala to activate the emotional centers...But a smaller portion of the original signal goes straight from the thalamus to the amygdala in a quicker transmission...of an...emotional response before the cortical centers have fully understood what is happening.

Goleman reports that strong memories will take “precedence over other strands of thought.” Sensory signals from *eye or ear* reach the amygdala for response long before the neocortex is alerted. How often have images of “sleeping children” who are desiring sex with “Big Daddy” distorted the conduct of men who lean over to kiss their child goodnight. How often has the “inhibition” reward been recalled, creating sexual lust for the child? The Raggedy Ann doll, the pig tails, the nursery rhyme sheets, the teddy bears, all child symbols now sexualized. A predatory male emerges out of lust, fear and shame to trigger a violation of the child, typically carried out in sleep, when she or he are most vulnerable, least able to resist.

[LeDoux] was the first to work out neural pathways for feelings that bypass the neocortex. Those feelings that take the direct route through the amygdala include our most primitive and potent; this circuit does much to explain the power of emotion to overwhelm rationality... [LeDoux discovered]...something like a neural back alley—[that] allows the amygdala to receive some direct inputs from

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51 Goleman, *Consciousness*, at 12.
53 Goleman, Ibid., *Consciousness*, at 19, Emphasis added. These findings apply to children and adults. One wonders if “warning” labels will be required and when pornography litigations will replace tobacco suits as the plaintiff’s litigation of choice.
54 Goleman, Ibid., at 17.
the senses and start a response before they are fully registered by the neocortex. The amygdala can have us spring to action while the slightly slower neocortex unfolds its more refined plan for reaction ...LeDoux overturned the prevailing wisdom about the pathways traveled by emotions through his research on fear.55

Neuroscientists commonly define the neocortex as “the thinking brain.” “The neocortex is the seat of thought; it contains the centers that put together and comprehend what the senses perceive.”56 It is reported as our abstract “command center,” differentiating us from all other mammals. Its role is largely to maintain mental balance and to inhibit and control psyche and conduct.57 Says Daniel Goleman:

Limbic structures generate feelings of pleasure and sexual desire—the emotions that feed sexual passion. But the addition of the neo-cortex and its connections to the limbic system allowed for the mother-child bond that is the basis of the family unit and the long-term commitment to childrearing that makes human development possible. Species that have no neocortex such as reptiles, lack maternal affection; when their young hatch, newborns must hide to avoid being cannibalized.58

Goleman explains, “in crucial matters of the heart—and most especially in emotional emergencies” the neocortex “can be said to defer to the limbic system.” Neuroscientist Jack Fincher adds that the limbic structures house “memory, pleasure, pain and the brain’s ability to balance the extremes of emotion.” Implicitly, pictorial sex stimuli obey “the law of strength”59 and dominate the limbic system in “sexual desire...memory, pleasure, pain...its seat of thought.”60 Fincher adds that the “[c]onnections between the limbic system and the cerebrum [that] permit an interplay between reason and emotion” are “easily upset.”

The limbic system can become so highly activated that it overwhelms rational thought, making a person speechless with fury or joy. Through conscious [neocortical] control, a person can resist the urge to eat or drink, fight back tears or suppress sexual desire.61

LEFT BRAIN, RIGHT BRAIN

55 Goleman, Ibid., at 18. Emphasis added.
58 Goleman, Ibid, Emotional Intelligence, at 11.
59 Daniel Goleman and Richard Davidson, Ed, Consciousness: Brain, States of Awareness, and Mysticism. New York, Harper and Row, 1979; see Galin at 22, A.R. Lauria at 10. Emphasis added. “[P]rocesses of excitation taking place in the waking cortex obey a law of strength, according to which every strong (or biologically significant) stimulus evokes a strong response, while every weak stimulus evokes a weak response.”
60 Goleman, Ibid, at 11-12.
Sally Springer and Georg Deutsch of State University of New York at Stony Brook note in *Left Brain, Right Brain,*”62 “the bodily reactions induced by the right hemisphere” in a split-brain damaged patient:

When a split-brain damaged patient was asked to fixate on the dot on the screen a picture of a nude woman is flashed to the left of the dot. N.G.’s face blushes a little, and she begins to giggle. She is asked what she saw. She says, "Nothing, just a flash of light," and giggles again, covering her mouth with her hand. "Why are you laughing, then?" the investigator inquires. "Oh, doctor, you have some machine," she replies.”63

N.G.’s right brain emotionally responded—blushed, giggled, covers mouth—embarrassed by the nude photo despite the fact that her left brain had lost the cognitive ability to explain her embarrassment at viewing the millisecond nude image. Addressing hemispheric specialization measurement, Restak notes genetics and environment impact our brain structure.

In a review of Joseph LeDoux’s *The Emotional Brain:*

*The mysterious underpinnings of emotional life, ” that emotion can occur without cognitive processing in the cortex. As LeDoux explains, the learning of fear is based on a different system from that of learning to identify people, objects and situations. Fear learning is implicit. It depends on the amygdala. But being able consciously to identify what causes the fear depends on explicit learning, which needs intact hippocampal regions and temporal lobes of the brain.*

Ordinarily if we are frightened we feel the fear implicitly and know explicitly what has caused it. …[But] *fear can be learned without consciousness*—we can feel fearful but without knowing why….Although anxieties are easy to acquire, *once their brain circuits are established they are difficult or impossible to delete…..* The brain also begins to initiate physical responses (heart palpitations, sweaty palms, muscle tension) before we become aware of an associated feeling of fear. Conscious feelings, says LeDoux, are somewhat irrelevant to the way *The Emotional Brain* works. He points out that emotional responses are hard-wired into the brain's circuitry…Unlike conscious feelings, emotions originate in the brain at a much deeper level, says LeDoux. 64

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63 Springer and Deutsch, Ibid., at 29-34.
If, as the brain research documents, emotionally threatening/stimulating media bypass the neocortex and rational thought,\textsuperscript{65} then strong, right hemisphere pictures will psychopharmacologically overwhelm weaker left hemisphere speech information. How are the child sex signals unconsciously imbedded in brain, mind, emotion, memory impacting their consumers? Neurologist Richard Restak stresses the conflicting, even warring roles of the left and right hemispheres in learning in his book, \textit{The Brain Has a Mind of Its Own}:

\begin{quote}
[U]nder conditions of extreme duress \textit{the limbic system is capable of overwhelming the cerebral cortex…} where interpretation, judgment, and restraint are formulated.\textsuperscript{66}
\end{quote}

LeDoux describes how this emotional stimulus interferes with rationality, wisdom, and the ability to make healthy decisions.

\begin{quote}
[T]he amygdala can take control over what we do even as the thinking brain, the neocortex is still coming to a decision…\textit{when impulsive feeling overrides the rational… Fear sends urgent messages to every major part of the brain:} it triggers the secretion of the body’s fight-or-flight hormones [e.g.: endogenous drugs]…centers for movement… the cardiovascular system, muscles and the gut.\textsuperscript{67}
\end{quote}

“The amygdala can react in a delirium of rage or fear before the cortex knows what is going on \textit{because such raw emotion is triggered independent of, and prior to, thought…”}

“The connections between the amygdala (and related limbic structures) and the neocortex are the hub of the battles or cooperative treaties struck between head and heart, thought and feeling. This circuitry explains why emotion is so crucial to effective thought, both in making wise decisions and in simply allowing us to think clearly.”\textsuperscript{68}

On point, while cognition appears to be subject to some genetic controls, a summary of the anatomical workings of the limbic brain finds neither native intelligence nor education works often to protect the individual from the influence of constantly repeated false, anxiety provoking, confusing stimulation. Says Goleman:

But circuits from the limbic brain to the prefrontal lobes mean that the signals of strong emotion—\textit{anxiety, anger, and the like}—can create \textit{neural static, sabotaging}

\begin{flushright}
66 Amen, Ibid., at 52.
67 Goleman, Ibid., at15-16. Emphasis added. (Le Doux is a neuroscientist at the Center for Neural Science at New York University.)
\end{flushright}
the ability of the prefrontal lobe to maintain working memory. That is why when we are emotionally upset we say we "just can't think straight"…The emotional brain, quite separate from those cortical areas tapped by IQ tests, controls rage and compassion alike. These emotional circuits are sculpted by experience throughout childhood--and we leave those experiences utterly to chance at our peril. 69 (Emphasis added)

CHRISTINE’S BRAIN

If fear, anxiety, anger and the like flood the speech hemisphere responsible for cognition with “neural static,” then society should reconsider such automatic neuroanatomical conduct when considering the free speech privileges it now legally affords to pornographic imagery. A young colleague who survived years of incestuous abuse and who then turned her attention to how the brain is impacted by early trauma, read a draft of this paper and remarked:

It would be clearer and more profound than “neural static” if you explained that pornographic imagery makes a fear feedback loop that allows the amygdala to form memories in its primitive brain with responses that are far faster than higher cognitive process. That fear-feedback loop hijacks the individual’s “choice” to control his/her brain, hormones, chemistry, thought and memory.

If you want to write about Christine's brain, says it's been traumatized by pornographically triggered child sexual assault, and not allowed to heal because I live in a culture where this industry likes to set up children to be assaulted. For who has the lowest self-esteem to be their actors? People like me. And, now, today, they can recruit “performers” brought up in homes where porn is accepted.

The false information with which society has been indoctrinated--that pornography is a harmless, nourishing sexual stimulus--is detrimental to human health and welfare since the human person depends on truth in order to maintain a healthy immune system and neural networks.

People who have integrated pornographic (emotional) lies within their neural networks are not like those who have integrated political (cognitive) lies, the latter being highly susceptible to corrective information. Cults, terrorists, child molesters and pornographers deceitfully mislabel emotions. Suggestion has the same power to shape thought and action as do well documented placebos.

Our whole culture is trying to accommodate the porn industry; the breast implants, enlarging the penis; viagra, abortion on demand, vaccinating kids for teen sex … Visual imagery either makes a new fear feedback loop or rides the wave of an existing one. You know, I think of a kid I saw viewing porn at the library. Sitting there with his erection--all the women and little children that he would see then within his vision at the library…creepy!!

69 Goleman, Ibid., at 27, Emphasis added.
We have our brains 'touched' by what we see. The 'eye touch' are the photons\textsuperscript{70} and the mind reacts. Our whole being reacts because it is how a human is made. We are truth seekers, for our health and preservation. Novelty stimuli, curiosity, all make humans susceptible to manipulation by negative imagery.

No wonder kids are messed up. Their parents are! Women have lost their power in the home to shape their beloved children's brain and nervous system. Women are at war with the very culture they exist in. There is a campaign out there by countless manipulators for the minds of their children. The billion dollar porn industry is growing an ever-fresh supply of disposable, malleable actors and actresses.

**ORGANICALLY QUANTIFIABLE PORNOGRAPHIC “ADDICTION”**

It takes 3/10ths of a second for a pornographic picture or symbol to flood the organ known as the “brain” with sensory experiences that trigger a network of memories that have been misdiagnosed as “sexual” or as “lust” or even, as in Pygmalion, “love.” These pornographic stimuli will commonly, if unconsciously, replay prior pornographic and associated sexual or sadosexual experiences.

Dr. Patrick Carnes, writing in *Out of the Shadows*, explained sex addiction as "a pathological relationship with a mood-altering experience."\textsuperscript{71} By definition, all pornography viewing is sexual conduct, behavior that engenders a "mood-altering experience." Or, as Christine says, a fear feedback loop.

For, this always confusing “mood altering experience,” by its nature, generates states of lust, undergirded by anxiety which always produces levels of fear, anger and shame. Such is the quality of the mood altering response to provoking sex stimuli, labeled by the individual as sexual arousal. This means the hypothalamus is at “red alert,” activated to “flight or flight. Eyes open wider...heart beats faster, fuel and defenses pump more quickly to muscles.”\textsuperscript{72}

In *Reinventing Perversion: Sex Addiction and Cultural Anxieties* (1997), the authors state:

[A]ddiction experts challenge sexologists on their enthusiasm for the unrestricted use of fantasy and pornography, for their encouragement of masturbation, and for their celebration of virtually any sexual activity between consenting adults. [sic] Sex addicts, they claim, may need to practice celibacy and eliminate fantasy and sexually explicit material "in order to attain and maintain sobriety," and sex

\textsuperscript{70} Photons: a quantum of visible light or other form of electromagnetic radiation demonstrating both particle and wave properties. A photon has neither mass nor electric charge but possesses energy and momentum.

\textsuperscript{71} Patrick Carnes, *Out of the Shadows*, Minneapolis, Minnesota, 1983, at 4. The bulk of scholarly writings on advertising and marketing agree that media sell their products by stimulating levels of anxiety or excitation (high arousal) in consumers. Further discussion on how "provocative" magazine, film, television or Internet women excite anger or resentment, confusion and anxiety in aroused juvenile and adult male viewers is available upon request.

therapists may simply retraumatize them or facilitate a relapse by the espousal of sexual freedom.

In its images and metaphors, sex addiction is a condensation of anxieties about lust, victimization, and the uncontrollable power of sexuality. Sex addiction claimants condemn what they see as manifestations of dangerous sexuality, such as masturbation, nonmonogamy, pornography, sadomasochism, and, for some in the more restrictive groups, lesbian and gay sexuality. Pornography, sex without love, and multiple partners are all condemned. Within the sex addiction field, retropurity terms have reemerged, such as "promiscuity," "nymphomania," and "womanizer."

Under the rubric of health, [psychologist Charlotte] Kasl and other feminist claimants advocate a women's sexuality that is spiritually and relationally oriented and eschews casual sex, the use of pornography, and engaging in sadomasochistic practices as symptomatic of illness. A very particular feminist sexual politic has profoundly infused the concept of sex addiction.73

**IF PERCEIVED AS REALITY, THEN STORED AS MEMORY**

Jack Fincher’s work supports the “sex addiction” findings. Fincher reports that at first signs of danger the body systems reach "red-alert," with the cortex releasing the hypothalamus from inhibitory control, blood pressure increases, muscles tense, sensory perception increases, pupils dilate, pain awareness is reduced, the skin flushes, the hands become clammy, and the heart beats wildly in states of high sexual/ fear, pornographically induced, arousal. As a sexual or fear-based orgasm memory is awakened during pornography-induced-anxiety, people imagine they are being “sexually” aroused by the trigger sights. One is commonly aroused by a biological orgasm memory, fused with fear, shame, and the like. Psychologist, M. Douglas Reed discussed the addictive nature of varied kinds of arousal and their self-medicating properties:

Arousal dependence may be compared to biochemical alterations related to excessive amphetamine use. Satiation effects may be compared to those related to opiate use. Fantasy behaviors can be related to such neurotransmitters as dopamine, norepinephrine, or serotonin, all of which are chemically similar to the main psychedelic drugs such as LSD. 74

Reed notes: "addiction could exist within the body's own chemistry" and "any activity that produces salient alterations in mood (which are always accompanied by changes in neurotransmission) can lead to compulsion, loss of control and progressively disturbed functioning." As a doctoral student, I employed the Gvianic Skin Response in one study of

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responses to pornographic images. We found a dramatic conflict between the non-verbal and verbal claims of arousal toward pornographic pictures shown to female student volunteers. The GSR printouts recorded high arousal/anxiety while the students had verbally claimed low arousal, that they were bored and indifferent to the pornographic slides.

EXOGENOUS AND INDOGENOUS DRUGS

*Science* concludes, therefore rightly, that research on “learning and memory may eventually be the key to figuring out how an often pleasurable experience” that includes the use of exogenously obtained drugs or pornographically induced endogenous drugs, “can change from a somewhat self-destructive hobby to a life-threatening compulsion.”

A pornographic psychopharmacological flood yields epinephrine (adrenaline), testosterone, (an endogenous steroid, men's "fight or flight" hormone), endorphins (“endogenous morphine”), oxytocin (a bonding peptide strongly associated with feelings of love), dopamine, serotonin, phenylethylamine, and other pharmacological stimuli. In her book published by the Institute of Medicine, National Academy of Sciences, Sandra Ackerman notes that epinephrine (adrenaline) alone gets the "vertebrate brain" "high" on its own self produced morphine or heroin. Pornography, designed to alert the procreation instinct to the need to immediately respond, would be especially likely to cause users to self-medicate, kick-starting these endogenous LSD, adrenaline/ norepinephrine, morphine like neurochemicals for a hormonal flood, a "rush" allegedly analogous to the rush attained using various street drugs. *Science* provides additional support for pornographic autoerotism as a brain change agent that activates endogenous drug production at the cellular level via normal and abnormal environmental sexual cues—Raggedy Ann dolls, pigtails, pouts, food, drinks, etc. The following come from memory researchers, including Steven Hyman, director of the National Institute of Mental Health in Bethesda, Maryland. "[T]he clinical issue that matters, [is]...how associative memories are laid down that...create deeply ingrained behavioral responses to those cues." Says Terry Robinson of the University of Michigan:

Memory researchers divide memories into those you consciously remember and those you generally don't. Consciously, people may remember a past drug-induced burst of euphoria and seek out the drug [generating activity] again.

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75 *Science*, Ibid., at 984.
77 Sandra Ackerman, *Discovering the Brain*, Institute of Medicine, National Academy of Sciences, National Academy Press, Washington D.C., 1992, at 76-77.
78 *Science* at 983.
Robinson points to the “associational memories,” the ‘trigger sights’ that reactivate the urge or lust for, say, the given drug of choice. Robinson says:

[C]rack pipes, syringes, the sound of ice tinkling in a glass full of scotch–can act as cues that induce craving much like the sound of a bell caused Pavlov's dogs to salivate. Even though addicts can become conscious of the relationship between some drug-related cues and their cravings…they might not recognize that a certain place or smell wakens a hunger for the drug. 80

These cues "can goad an individual to drug seeking in the absence of conscious awareness," says Robinson. While briefly addressing “sexual addictions,” both Science and the brain research did not address sexual trigger sights and associated memories.

When former addicts see videos evocative of drug use, they report craving and show signs of stress, such as increased heart rate, says psychiatrist Charles O'Brien of the University of Pennsylvania…Positron emission tomography (PET) shows that parts of the reward system are unusually active when people experience craving…[There is] hyperactivation of the orbitofrontal cortex when recovered addicts see cues that induce craving for cocaine. This part of the brain is closely connected to reward pathways and is disrupted in people with obsessive-compulsive disorder.81 (Emphasis added).

A REWARD IS A REWARD IS A REWARD

Sensitization, in an environment where one has learned to expect a drug “high,” "renders brain circuitry hypersensitive to drugs and drug- associated paraphernalia." Says Robinson:

Long-term abuse can wear out these pathways, reducing the number of receptors that respond to dopamine. Some of Volkow's more chilling PET scan images show the brains of former methamphetamine users: Some have been drug free for months but their dopamine systems are still not firing on all cylinders. Dopamine fuels motivation and pleasure, [and] it's also crucial for learning and movement.82

In “Behavioral' Addictions: Do They Exist?” Science says, aided by the new “brain imaging advances, scientists are looking for evidence that compulsive nondrug behaviors lead to long-term changes (“neuroadaptation.”) in reward circuitry.”83 Science reports that the “superrefined brain scan technology” provides new information on “the brain's reward system.”

80 Science, Ibid., at 983.
81 Science, Ibid., at 983.
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. 84

Howard Shaffer, head of Harvard’s Division on Addictions says:

I had great difficulty with my own colleagues when I suggested that 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. 85 (Emphasis added).

Anna Rose Childress, a University of Pennsylvania brain image researcher states that sex addicts and cocaine addicts lose their inhibitions and appear to have an “inhibitory circuitry” defect. Vanderbilt University psychiatrist Peter Martin’s research on “normal subjects” finds the brain activity experienced in sexual arousal of his normal subjects “looks like that accompanying drug consumption.” 86 (Emphasis added).

Pornography is not like a drug, it is an endogenously processed poly drug providing intense, although misleading, sensory rewards. Harvard’s Shaffer team found that when a “reward is powerful enough, it can retrain those circuits in a vulnerable person.” 87 And, in “Beyond the Pleasure Principle,” neuroscientist Eric Nestler of the University of Texas notes brain studies find a "convergence between changes caused by drugs of addiction in reward circuits and changes in other brain regions mediating memory." 88 Nestler writes, “both learning and drug exposure resculpt synapses, initiate cascades of molecular signals that turn on genes, and change behavior in persistent ways.” 89

Lust, that is sexual arousal, toward a real or media image, when experienced in the body (in street terms, “brain candy”) as a drug high, poses significant danger, especially for those with an already delicate psyche. For, such chemical flooding of the brain would too often override ones cognitive thought and interfere with rational decisions to protect themselves and others.

Neuropsychiatrist, Richard Restak is enthusiastic about scientific confirmation that “we can change how our brain operates” saying, “we can literally change our brain for the better as a result of new interests and the development of new talents.” 90 Brain research is confirming a long cherished and valued belief that when it comes to our mind and its development,” says Restak, “we retain a gratifying measure of control after all.” 90 Science reports:

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84 Science Magazine, Ibid, at 980. Emphasis added
85 Science, Supra.
86 Science, Ibid, 981.
87 Science, Ibid, 980, 982.
88 Science, Supra.
89 Science, Supra, Emphasis added.
90 Restak, Ibid., at 141. Emphasis added.
Once the brain becomes less sensitive to dopamine, it “becomes less sensitive to natural reinforcers,” Volkow says, such as the "pleasure of seeing a friend, watching a movie, the curiosity that drives exploration." The only stimuli still strong enough to activate the sputtering motivation circuit, she says, are drugs.91 (Emphasis added).

**GETTING THE BRAIN’S ATTENTION**

However, the foregoing observation applies to both changing the brain for the better—or for the worse—via exogenous and endogenous drug production. In “Getting the Brain's Attention,” Science reports that dopamine appears to highlight and aid addiction to biologically significant stimuli, even when the rewards are long since past (in this case, read pornographic, autoerotic activity) rather than merely signaling pleasure as previously thought.

> “[T]he neurotransmitter dopamine may contribute to addiction…Dopamine release within the brain highlights, or draws attention to, certain significant or surprising events [not just] consuming a tasty morsel of food or engaging in sexual activity, but also events that predict rewards, and stimuli, like loud noises and flashing lights, that are simply startling. By underscoring such events, say these researchers, the dopamine signal helps the animal learn to recognize them—and in some cases, to repeat them."92 (Emphasis added).

Neurobiologist Candace Pert describes the body as a “psychosomatic communication network,” with “brain chemicals found throughout the body, directly affecting the health of the immune system.”93 Fearing “soul” or “spirit,” the scientific world denied the obvious, says Dr. Pert, that our brain-mind-memories directly affect our physical well-being and ghettoized emotions. Pert supports the findings of Amen, Goleman, Restak, LeDoux, Kemmeny, Felten and others:

> [M]any emotional messages...don’t percolate up to your level of knowing them. Even so, they are used to run everything in your body...Emotions might actually be the link between mind and body...The old barriers between brain and body are breaking down...If...the mind is not just in the brain but...part of a communication network throughout the brain and body, then you can start to see how physiology can affect mental functioning on a moment-to-moment, hour by-hour, day-to-day basis.94

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91 Science, Ibid., at 984. Emphasis added.
93 Moyers, Ibid., at 178.
CAUSE-EFFECT: WHAT WE FEEL EFFECTS HEALTH

So, what is the cause-effect nature of pictorial pornography on public health? University of Rochester neuroscientist, Dr. David Felten mused that until recently, “it was almost dogma that the immune system is autonomous and doesn’t have any outside controls.” 95 Leading professionals looking right at depression and excitation, insisted that "there was no connection, [that] the brain and the immune system couldn't talk to each other." 96 Kemeny explains that scientists finally agree that ones emotions "impact on the immune system." 97

For thousands of years it has been said that our thoughts and feelings can make us sick or well. Now, scientists are putting that folk wisdom to the test......For centuries we have separated mind from body [but]… [a]lthough it seems intangible, anytime we feel anything, anytime we think anything, anytime we imagine anything, there is activity in the brain that is taking place in the body at that time. That activity can then lead to a cascade of changes in the body that have an impact on health. 98

Karen Olness, Professor of Pediatrics at Case Western Reserve University and a specialist in mind regulation and conditioning, reveals the causal effects of media in shaping our personal/national health. She addresses the habitual images in the entertainment medium that reach the right hemisphere, triggering a cascade of neurochemical activity, dominate the brain and affect public health. 99

“[U]ltimately we will be understanding how images are constructed and how they impact a neurotransmitter ….[W]hatever energy is associated with the construction of images and the process of thinking transmits a message to a cascade of body processes…In fact, changing images does affect physiology. I have no doubt about that any longer….Images can be wonderful. They can obviously also be frightening if we have negative images.” 100

[I]mages and the minute energy associated with images that connects with neurotransmitters or information-transmitting molecules is where the mind and body meet…we must continue with the research. I think it's as important as any other area of health science research…[M]any of us have been in the habit of inadvertently conditioning ourselves negatively. It would help if we simply knew how to reverse that, if we knew what habitual images were not in our best health interests. That in itself would be a great advance in our understanding of this area [of conditioning]. 101 (Emphasis added.)

95 Moyers, Ibid., at 214.
96 Ibid.
97 Ibid., Moyers. The Brain, documentary.
98 Ibid. Moyers, The Brain, documentary.
100 Moyers, Ibid, at 76.
101 Moyers Ibid., at 78. Emphasis added.
Let us step aside for the next five pages to look at pornography. As Olness said, “many of us have been in the habit of inadvertently conditioning ourselves negatively.” We will briefly look at some of the real world “habitual images” that, as Olness notes, many not be “in our best health interests.” The assaults on cognition via techniques like lengthening legs is more sinister in the breasts drawn on small girls in Playboy, et al, cartoons, a scientific finding of my study as Principal Investigator for the US Department of Justice, The Office of Juvenile Justice and Delinquency Prevention, “A Content Analysis of Children, Crime and Violence in Playboy, Penthouse, and Hustler” (Project No. 84 JN--AX--K007, 1984 to 1985). The study Abstract is highly relevant to pornography’s effect on health; emotions, brain, mind and memory:

SELECTED FINDINGS

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</table>

Mainstream erotica/pornography (E/P) is widely believed to portray nonviolent adult female nudity for an adult audience. However, a content analysis of Playboy (N-373), Penthouse (N-184), and Hustler (N-126) magazines, December 1953 to December 1984, yielded 6,004 child images as well as an estimated 14,854 images of crime and violence. Imagery received both by juvenile and adult readers, newsstand-available child images in erotica/pornography increased nearly 2,600 percent (16 to 412) from 1954 to 1984 peaking in 1978 at 465 newsstand available depictions. Nearly two-thirds of the child scenarios were sexual and/or violent; the dominant age bracket 3 to 11 years; girls more prevalent than boys and most likely associated with adult males; and racial portrayals almost exclusively Caucasian. Close to 1,000 sexual scenarios included children with adults; 80 percent of the children were actively involved in all scenes; and each magazine portrayed children as unharmed and/or benefited by adult-child sex.

Juxtaposed with some 50,000 images of adult female nudity, the 6,004 child depictions were also associated with 14,854 images of adult crime and violence. In the latter, young adult Caucasian males and females were equally victimized with primary offenders-young adult Caucasian males. As the only mainstream newsstand publication of its genre from 1954 to 1968, Playboy averaged 17 monthly depictions of children, crime and violence. Since 1975, the addition of Penthouse and Hustler increased the newsstand-available aggregate to 111 monthly depictions of children, crime and violence. In sum, these magazines paired adult female nudity with images of children, crime and violence, for millions of juvenile and adult readers for over three decades.
Gary Lynch is mindful of the fact that, “If we can find ways to influence...the biological basis of learning...I think the clinical edge there would be tremendous...[It could be] a milestone in human history, with colossal impact.”

But, mainstream pornography did “influence...the biological basis of learning”...for decades, “a milestone...with colossal impact.” Some of that “influence” may be seen in the report at left, Table II Reader's Guide Time Line By Subject Headings,” taken from my OJJDP study.

Lucinda Gross Hill, School of Library Science, University of Kentucky, researched the Increase in Child Sexual Abuse Reports in the National Press:

“Using The New York Times Index and the Reader's Guide to Periodical Literature I have been charting the number of times crimes were committed against children in terms of sexual assault, their use in pornography and their exploitation as sexual objects.”

“I started charting in 1945 to get a real feel for the reports before the coming of Playboy. I've gotten side tracked along the way with the introduction of subject headings, so my research was slowed down a bit. For example, "pornography" wasn't even used as a subject heading until 1973.”

“Up until then citations were listed under "sex crimes". Then along about 1972, the subject heading "child molesters" began to appear under "sex crimes" as a "see also". By 1975 the use of the heading "sex crimes" was dropped altogether and replaced by "child molesters" and "rape"; by 1977 the main subject headings used became “incest”, "rape" "child abuse" and "child molesters". I should also mention that the instances of reports of sexual crimes committed

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102 Ibid., Moyers, The Brain.
against children skyrocketed starting in 1977—really sharp and dramatic increase”” (see below). Note that Playboy began “incest” cartoons in 1954, its first full year of production.

*Table III*

**READER’S GUIDE TIME LINE CITATIONS**

![Graph showing time line citations]


By 1980 “lust murder” and in 1982 “child sex rings” get their own subject headings. In 1984 “serial rape” (and mutilation, the Ted Bundy syndrome) appear and by 1986 we get “autoerotic asphyxia” (a form of accidental suicide by strangulation during masturbation to pornography). In 1988 the press is reporting on “erotic sexual asphyxia” (“rough sex” murder by one’s male partner involving strangulation during a sex act). Also in 1988 “ritualistic killing” (satanic/occult) gets a heading, at which time this project concluded. Some subsequent major categories would include “child abduction” with roughly 58,200 children—most of them sexually abused—kidnapped by non-family members in 1998. “Kiddie porn” and “baby porn” are a few more recent additions.

If, as Lynch says, “the mind is the master organ” and feeling happy or sad for 20 minutes can impact “the immune system,” 103 what of the eroticized public square and private bedroom? If all thoughts are biochemical events that trigger the production of endogenous drugs,

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103 Ibid., Moyers, *The Brain.*
pornographic thoughts also open “the drug store in our brain.”104 What changes below have been wrought due to the making of such new “brain chemicals?”105

_Playboy and Penthouse_ Child Violence and Child Sex Images Changing Consumer Brains

The four following _Playboy_ renderings are some examples taken from my research of “provocative” child molestation cartoons in which teen-age breasts appear on small children to alert the brain’s attention center so as to confuse and recruit. The _breast images are redacted here to limit their emotional impact. Also I refuse to reproduce these sexually graphic images or “cartoons.” Clearly, with breasts redacted, the two top cartoons depict children under age 5.

Depicting children as willing solicitors of adult sex has been a systematic artistic protocol in all three magazines, confusing and directing viewers toward experiencing sexual “feeling” toward children, subverting the viewer’s cognitive awareness of psychopharmacological and neuroanatomical modifications.

Making children sexually provocative desensitizes and eventually internalizes pedophile attitudes and behaviors among vulnerable consumers. Recall Restak explained that, “sight is the most likely to involve recall. And the more bizarre the visual image the more likely we are to see and remember it,” even if not in conscious memory.

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104 Ibid., Moyers, _The Brain_.
105 Ibid., Moyers, _The Brain_.
This series of pornographic child cartoons—graduating to pornographic child photographs from *Playboy* and *Penthouse* identifies the transition over time (see time lines) from “humorous” fantasy to incestuous “Come on strong Big Daddy!” (11/71), reality, causing significant dissonance, anxiety and confusion in vulnerable consumers. One unwittingly integrates pedophile cues under cover of “adult” sexual stimuli. Since its first incest cartoon in 1954, *Playboy et al* have subverted and “conditioned” the viewer’s emotional and cognitive neurological pathways, thereby violating “free speech” and conscious “choice.”

Lynch added that something “in your head as an electrical signal for no more than a few seconds, can...leave a trace that will last for years” 106 and McLean warned that there is “an unpleasant feeling of fear attached to something that cannot be clearly identified”107.

Most of the images here, imprinted outside the consumer’s conscious awareness of its pedophile pedagogy, have graphically normalized sex with children, using confusing, subversive brain manipulations such as the sexualized “pseudo-children” below, upper left and film “reporting.” *Hustler* expanded the subversion. Contemporary “child pornography” is the expected fallout of censoring pornography “harms” research, in federal grants, press and academia, and in the deliberate undermining of criminal prosecution of pornographers.

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107 Paul McLean in *Consciousness*, at 24-25
The attached cartoons and photos are from *Hustler* magazine. Dwaine Tinsley, *Hustler*’s “Chester the Molester” cartoonist (left) was convicted of incestuous abuse. Some time late a “special” judicial board released Tinsley from jail, claiming that these evidential cartoons of the sex abuse of his daughter had “inflamed the jury.”

Tinsley’s daughter had testified that her father showed her the father-daughter cartoon (upper left), admitting that this was a record of his assault of her. Since his daughter could not emotionally handle a new trial, Tinsley was freed.
At left is a list of the major child pornography cartoonists in all three mainstream pornography magazines, some of whom serve as cartoonists for national “conservative,” “liberal” and “family” publications. On the right the edited “Comments from a professional art educator and art historian directing a major U.S. art Museum,” assess many of the sample cartoons and photos presented here. Due to the political freight of his analysis and its impact on “free speech” activists, he is “Anonymous.”

**"CHILD" CARTOONISTS**

<table>
<thead>
<tr>
<th>PLAYBOY</th>
<th>PENTHOUSE</th>
<th>HUSTLER</th>
<th>TOTAL</th>
<th>NAME OF CARTOONIST</th>
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</table>

**MEMORANDUM TO DR. JUDITH REISMAN**

FROM: ANONYMOUS

DATE: November 15, 1985

SUBJECT: Initial responses to a series of color reproductions from the pages of Playboy and other magazines.

Playboy cover, April 1976—An appeal to the little cuddly girl from a mature model with exposed breasts. Gives the idea immediately of sex with someone who is underage.

Penthouse, January 1981—Another mature model with full, exposed breasts, masquerading in a very suggestive come-hither pose. The wet lower lip and the eyes are very appealing to the viewer in a sexual sort of way and suggests to the viewer that it might be appealing to have sex with a juvenile.

Playboy, August 1975—The bedroom, incestuous sadism exploited with the suggestion that we will be turned on by viewing a “hot” series of Jane (slightly exposed breasts and genitalia) in similar poses.

Playboy, November 1971—Again this is the pandering to the issue of incestuous sex with a juvenile “Come on strong, Big Daddy,’’ as if it was going to be a big new different kind of excitement. Probably the model is a mature woman, but the idea is still there.

Hustler, October 1979—The little-girl-scout image as a sex object again, fully exposed with breasts and genitalia. This time no suggestion intended, but a more forceful invitation to sex.

Playboy, November 1976—This bad photograph is offensive as exploitive of incestuous juvenile sex.

Playboy, August 1971—Again, a sexually exposed child as an explicit sex object/target.

Playboy, March 1978—Gang rape connected with children through the cartoon and one of the most popular juvenile tales—The Wizard of Oz.

Penthouse, May, 1984—This is the raunchiest sort of exploitation of the Oz theme again. Disgusting.

Playboy, March 1972—Making a joke of sex with a child prostitute. Again, the cult of childhood using a child fantasy tied to sex.

Penthouse, December 1976—Not funny, sexual molestation using, again, childhood myths on the idea of payment (the lollipop) for sex with sex savvy children.


The cumulative impact of child images in sex magazines alongside crime, violence, nudity and sexual activity can be seen in the timeline above left, “Three Topping E/P Publications, Newsstand Aggregate.” Following the release of my 1985 DOJ report child sexuality images decreased dramatically in these magazines. However, post the Internet pornographic images of children, crime and violence are ubiquitous.
CONCLUSION & DISCUSSION

The 2,600% Increase in Images of Children versus a 650% increase in crime and violence in sex magazines from 1954 to 1984 strongly suggests that sexualizing children is systemic to pornography and that habituation, desensitization and conditioning leads inevitably to more violent and exploitive sadosexual scenarios and copy-cat criminal conduct.

On June 26, 1993, The Washington Post reported briefly on a Congressional subcommittee hearing on cable television during which media magnet Ted Turner said a TV rating system should be “shoved down [the industry’s] throats.” The short item noted that:

Turner lashed out at the television industry…for what he called its role in causing violence, admitting that he himself was contributing to the problem through his TNT cable network. “They’re guilty of murder. We all are—me too.”108

It is duly noted that Turner, an expert in the entertainment field and one clearly aware of the research on media causation, did not claim to speak metaphorically, but literally. As a communication and “sexuality” consultant, with a specialty in content analysis, my task here has been to review relevant evidence addressing neurological communication within the context of my own and other research on pornographic communication to discern how the latter may effect emotional/automatic and cognitive functions, especially that of rational thought and speech. I therefore asked, how does pornographic communication effect the brain’s three main communication functions: to be 1) alert, awake, aware of reality; 2) to collect and store environmental information; and 3) to monitor and correct our conduct for health and well-being?

The evidence presented here finds that pictorial pornography—traditionally, graphic depictions of sex or nudity, pandered for prurient appeal, rather than for serious literary, artistic, or scientific purposes--generates noxious effects across all three performance measures.

Since the brain believes what the eyes see, in 3/10ths of a second, real, virtual or pseudo pornography restructures the brains-minds and memories of participants or even casual viewers. That the brain’s “internal drug store” produces mood altering psychotropic drugs, and that right hemisphere emotions including fear, joy, anger, lust (instant rewards) dominate the left hemisphere’s cognitive functions of speech, rationality, logic (delayed rewards), further implicates pictorial pornography as causally changing the nature of the polity. The massive quantifiable increases and qualifiably more sadistic and barbaric kinds of sexual crime since 1950, supports the breeding of a sadistic, pedophile consciousness in pornography consumers. A picture is worth more than a thousand words and even weighty words (unless repetitively broadcast in popularly credible forums) rarely cause long-lasting cellular change.

The “law of strength” finds pictorial pornography reflexively and mechanically restructuring the brain; involuntary cellular change takes place even during sleep, resisting informed consent, with left-brain dominance abrogating genuine free speech. Further, that children and non-readers accurately decode and “copy” visual images in any language establishes the non speech or anti speech nature of visual media.

It appears critical to society to eliminate those media that are subversive of child welfare. James Madison warned “[a] popular Government, without popular information, or the means of acquiring it, is but a Prologue to a Farce or a tragedy: or perhaps both.”\(^\text{109}\) Cross-cultural, historical, testimonial and laboratory evidence find children commonly repeating acts on younger children and peers that they have learned from the media. Although the public largely condemns media sex and violence, on the evidence, our press violates the high purpose of free speech by largely ignoring testimonies and even crime reports of *copycat sexual crimes* that mirror the changing brutality of mainstream pornography.

This bias deprives the polity of the information with which they may determine the proper social and legal treatment of this cultural power tool. As evolutionary theory fully agrees here with that of creation—that pictorial pornography would render women and children unequally endangered and discriminated against—modern brain data should help bring our laws up to speed with bygone wisdom to keep pace with runaway mass media technology and its special interests and influence. “Lust...On purpose laid to make the taker mad.”

My operational, ‘ethological’ definition of pornography: *private space behaviors displayed in public space forums in violation of self and species preservation* finds for pictorial pornographic communication as socially toxic. It is argued here that the attached review finds the psychopharmacology of pictorial pornography subversive of the goals and objectives of free speech: that is to enable a polity whose brains, minds and memories are alert, aware, realistic, healthy and thus capable of rational and thoughtful self government, to more effectively ensure domestic tranquility and provide for the common defense. As these media violate “free speech” rights of women and children but subverting cognition, these toxic media should be legally outlawed, as is all other toxic waste, and eliminated from our societal structure.

# The Psychopharmacology of Pictorial Pornography Matrix

**Subverting Freedom of Speech by Restructuring Brain, Mind and Memory**

<table>
<thead>
<tr>
<th>Scientific Disciplines</th>
<th>Primary Variables</th>
<th>Variable Measures</th>
<th>Variable Measures</th>
<th>Pornography Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Proxemics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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 organism.</td>
<td><strong>Space/Distance</strong></td>
<td><strong>Private Space</strong></td>
<td><strong>Public Space</strong></td>
<td>Displays of intimate “private” space conduct. Females “provoking” sexual response—strippers, nude models, prostitutes are in unsafe public space, in harms way. Viewers are coarsened, aroused, project lust, shame, anger to all females, often children, etc. absent empathy, pity.</td>
</tr>
<tr>
<td></td>
<td>Private space 0” to 6” reserved for close, intimates, v. Public Space, 25’ plus, danger of strangers, unknown, vulnerable</td>
<td>Secure, home, yard, space under ones direct control. Direct eye contact, eg. Two lovers, mother &amp; child, nudity OK, exposure OK, safe.</td>
<td>TV, film, Internet, library, circus, street, magazine. Space not under performer’s control, unsafe, strangers, enemies possible, clothed, eye contact avoided, harm, weapons, crime possible.</td>
<td></td>
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</tbody>
</table>

| **Ethology**           |                   |                   |                   |                     |
| Narrowly defined here as the study of customs & character. Pornography lies about female custom, character and physiology, defining female as non-human places women, and their children, at risk of harm. | **Estrus** | **Primate Female** | **Human Female** | Displays women and children as primates in heat, in estrus, in nude, genital poses in public space. Causes risky, disordered conduct with toxic, violent abuse common to sexual performers, and proximate female and/or child victims. |
| | Nonhuman females enter “heat” with visible olfactory, colors, signs. Humans 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, private display only of reproductive, sexual areas, seeking permanent, relations, family, home, formal commitments. |

| **Neuropsychology**  |                   |                   |                   |                     |
| 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. | **Two Hemispheres** | **Right Brain** | **Left Brain** | Pornography fraudulently teaches estrus, sex in public space. The left brain is overwhelmed by right brain images. Unaware of brain effects means the change is non consensual. Children, illiterates decode sex that subverts the task of free speech. |
| | 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. |

| **Psychopharmacology** |                   |                   |                   |                     |
| Narrowly defined here as the study of excitatory & inhibitory transmitters, biochemical reactions to stimuli; Pornography researchers through brain’s “100 million signals a second.” | **Neurochemistry** | **“Flight or Fight”** | **A Polydrug Rush** | Pornographic fear, sex, shame, self induced drug “high” is mislabeled “sexual arousal” to women, children, men, boys, triggers anger, shame, confusion = insults, sex assault, rape, incest. (Reisman, 1991) |
| | 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. |