

Slave Master

How Pornography Drugs & Changes Your Brain

by Donald L. Hilton, Jr.



While some have avoided using the term “addiction” in the context of natural compulsions such as uncontrolled sexuality, overeating, or gambling, let us consider current scientific evidence regarding the brain and addiction.

This article will seek to answer two questions: (1) Biologically, is the brain affected by pornography and other sexual addictions? (2) If so, and if such addictions are widespread, can they have a societal effect as well?

The Story of the Gypsy Moth

Let's begin with a seeming digression. In 1869 the gypsy moth was brought to America to attempt to jumpstart a silk industry. Rarely have good intentions gone so wrong, as the unforeseen appetite of the moth for deciduous trees such as oaks, maples, and elms has devastated forests for 150 years. Numerous attempts were made to destroy this pest, but a major breakthrough came in the 1960s, when scientists noted that the male gypsy moth finds a female to mate with by following her scent. This scent is called a pheromone, and is extremely attractive to the male.

In 1971 a paper was published in the journal *Nature* that described how pheromones were used to prevent the moths from mating. The scientists mass-produced the pheromone and permeated the moths' environment with it. This unnaturally strong scent overpowered the females' normal ability to attract the male, and the confused males were unable to find females. A follow-up paper described how population control of the moths was achieved by “preventing male gypsy moths from finding mates.”

The gypsy moth was the first insect to be controlled by the use of pheromones, which work by two methods. One is called the confusion method. An airplane scatters an environmentally insignificant

especially through the internet. I believe we are currently struggling in the war against pornography because many continue to believe two key fallacies:

Fallacy No. 1: Pornography is not a drug.

Fallacy No. 2: Pornography is therefore not a real addiction.

This **resetting** of the “pleasure thermostat” produces a **“new normal.”** In this addictive state, the person must act out in addiction to boost the dopamine to levels sufficient **just to feel normal.**

As an illustration of Fallacy No. 1, consider the following statement by a Wall Street executive whose main-stream company discreetly profits from pornography: “I’m not a weirdo or a pervert, it’s not my deal. I’ve got kids and a family. But if I can see as an underwriter going out and making bucks on people being weird, hey, dollars are dollars. *I’m not selling drugs.* It’s Wall Street.”

Now consider both fallacies as elucidated in the following statement by an executive in the pornography industry:

[T]he fact [is] that “drugs, booze and cigarettes” are all physical, chemical agents that are ingested and can indeed have measurable, harmful, addictive effects. The mere viewing of any type of subject matter hardly falls into this category and, in fact, belittles the very real battles that addicts face over drugs, booze and cigarettes—all of which can be lethal. No one ever died from looking at porn. While some compulsive types can be “addicted” to anything, such as watching a favorite television show, eating ice cream or going to the gym, nobody suggests that ice cream is akin to crack cocaine [remember that statement] and should be regulated to protect . . . people from themselves—instead, these compulsive actions are rightfully viewed by society as personality defects in the individual. . . .

Here I will review some of the science he refers to, and also discuss whether pornography is a “physical, chemical” agent, i.e., “a drug,” and also consider the latest research on natural brain rewards in deciding whether it is a true brain addiction.

number of very small plastic pellets imbedded with the scent of the pheromone. Then, as science journalist Anna Salleh describes it, “The male either becomes confused and doesn’t know which direction to turn for the female, or he becomes desensitized to the lower levels of pheromones naturally given out by the female and has no incentive to mate with her.”

The other method is called the trapping method: Pheromone-infused traps are set, from which moths cannot escape; a male moth enters looking for a female, only to find a fatal substitute.

Two Fallacies

What does this have to do with pornography? Pornography is a *visual pheromone*, a powerful, \$100 billion per year brain drug that is changing human sexuality by “inhibiting orientation” and “disrupting pre-mating communication between the sexes by permeating the atmosphere,”

Adrenaline Grass

First, I would like to share an experience our family had a few years ago on a safari in Africa. While on a game drive along the Zambezi River, our ranger commented on the adrenaline grass growing along the banks. I asked him why he used the word “adrenaline,” and he began to drive slowly through the grass. Abruptly, he stopped the vehicle and said, “There! Do you see it?”

“See what?” I asked. He drove closer, and this also changed the angle of the light.

Then I understood. A lion was hiding in the grass watching the river, just waiting for some “fast food” to come and get a drink.

We were sitting in an open-air Land Rover with no doors and no windows. I then understood why it was called *adrenaline grass*, as I felt my heart pound. My cerebral cortex saw and defined the danger, which registered in the autonomic, or automatic, part of my nervous system. The brain, which is a very efficient pharmaceutical lab, produced the chemical adrenaline, causing my heart to pound and race in preparation for survival. I was ready to run if needed (not that it would have done any good with the lion).

We were told that if we stayed in our seats and remained still, the lion would look at the Land Rover as a whole and not see us as individuals. Fortunately this was the case for us.



Look closer!

A Drug Is a Drug

Interestingly, adrenaline, also called epinephrine, is a *drug* we physicians use in surgery and in emergencies to start a patient’s heart again when it beats too slow, or even stops. So here is the question: Is epinephrine *not* a drug if the brain makes it (causing the heart to pound and race), yet *is* a drug if the same epinephrine is given by a physician?

Or consider dopamine. This chemical is a close cousin to epinephrine, both of which are excitatory neurotransmitters that tell the brain to *Go!* Dopamine is important in the parts of our brain that allow us to move, and when the dopamine-producing parts of the brain are damaged, Parkinson’s disease results. To treat Parkinson’s, physicians prescribe dopamine as a drug, and it helps the patient move again. So is dopamine a drug only if the pharmaceutical lab makes it, and not if the brain makes the same chemical for the same purpose?

Of course, both are drugs in every sense of the word, regardless of where they are produced. Pertinent to our subject, it happens that both of these brain drugs are very important in human sexuality—and in pornography and sexual addiction. Dopamine, in addition to its role in movement, is an integral neurotransmitter, or brain drug, in the pleasure/reward system in the brain.

Disruption of Dopamine

Let’s review some of the important components of the reward system of the brain. On the outside is the cerebral cortex, a layer of nerve cells that carry conscious, volitional thought. In the front, over the eyes, are the *frontal lobes*. These areas are important in judgment, and, if the brain were a car, the frontal lobes would be the brakes. These lobes have important connections to the pleasure pathways, so pleasure can be controlled.

In the center of the brain is the *nucleus accumbens*. This almond-sized area is a key pleasure reward center, and when activated by dopamine and other neurotransmitters, it causes us to value and desire pleasure rewards. Dopamine is essential for humans to desire and value appropriate pleasure in life. Without it,

we would not be as incentivized to eat, procreate, or even to try to win a game.

It's the *overuse* of the dopamine reward system that causes addiction. When the pathways are used compulsively, a downgrading occurs that actually decreases the amount of dopamine in the pleasure areas available for use, and the dopamine cells themselves start to atrophy, or shrink. The reward cells in the nucleus accumbens are now starved for dopamine and exist in a state of dopamine craving, as a downgrading of dopamine receptors on the pleasure cells occurs as well. This resetting of the "pleasure thermostat" produces a "new normal." In this addictive state, the person must act out in addiction to boost the dopamine to levels sufficient just to feel normal.

As the desensitization of the reward circuits continues, stronger and stronger stimuli are required to boost the dopamine. In the case of narcotic addiction, the addicted person must increase the amount of the drug to get the same high. In pornography addiction, progressively more shocking images are required to stimulate the person.

Frontal Lobe Damage

As a feedback of sorts, the frontal lobes also atrophy, or shrink. Think of it as a "wearing out of the brake pads." This physical and functional decline in the judgment center of the brain causes the person to become impaired in his ability to process the consequences of acting out in addiction. Addiction scientists have called this condition hypofrontality, and have noted a similarity in the behavior of addicted persons to the behavior of patients with frontal brain damage.

Neurosurgeons frequently treat people with frontal lobe damage. In a car crash, for instance, the driver's brain will often decelerate into the back of his forehead inside his skull, bruising the frontal lobes. Patients with frontal lobe damage exhibit a constellation of behaviors we call frontal lobe syndrome. First, these patients are *impulsive*, in that they thoughtlessly engage in activities with little regard to the consequences. Second, they are *compulsive*; they become fixated or focused on certain objects or behaviors, and *have to have them*, no matter what. Third,

they become *emotionally labile*, and have sudden and unpredictable mood swings. Fourth, they exhibit *impaired judgment*.

So cortical hypofrontality, or shrinkage of the frontal lobes, causes these four behaviors, and they can result from a car wreck or from addiction.

A study on cocaine addiction published in 2002 shows volume loss, or shrinkage, in several areas of the brain, particularly the frontal control areas. A study from 2004 shows very similar results for methamphetamine. But we expect drugs to damage the brain, so these studies don't really surprise us.

Consider, though, a natural addiction, such as overeating leading to obesity. You might be surprised to learn that a study published in 2006 showed shrinkage in the frontal lobes in obesity very similar to that found in the cocaine and methamphetamine studies. And a study published in 2007 of persons exhibiting severe sexual addiction produced almost identical results to the cocaine, methamphetamine, and obesity studies. (Encouragingly, two studies, one on drug addiction [methamphetamine] and one on natural addiction [obesity] also show a return to more normal frontal lobe volumes with time in recovery.)

So we have four studies, two drug and two natural addiction studies, all done in different academic institutions by different research teams, and published over a five-year period in four different peer-reviewed scientific journals. And all four studies show that addictions physically affect the frontal lobes of the brain.

Addiction Is Addiction

I mentioned that the dopamine systems don't work well in addiction, that they become damaged. This damage, as well as frontal lobe damage, can be shown with brain scans, such as functional MRI, PET, and SPECT scans. Recent brain scan studies have not only shown abnormalities in cases of cocaine addiction, but also in cases of pathologic gambling and overeating leading to obesity.

So non-biased science is telling us that addiction is present when there is continued destructive behavior in spite of adverse consequences. As stated in the journal *Science*, "as far as the brain is concerned, a reward's a reward, regardless of whether it comes from a chemical or an experience."

What about pornography and sexual addiction? Dr. Eric Nestler, head of neuroscience research at Mount Cedar Sinai in New York and one of the most respected addiction scientists in the world, published a paper in the journal *Nature Neuroscience* in 2005 titled "Is there a common pathway for addiction?" In this paper he said that the dopamine reward systems mediate not only drug addiction, but also "natural addictions (that is, compulsive consumption of natural rewards) such as pathological overeating, pathological gambling, and sexual addictions."

The prestigious Royal Society of London, founded in

the 1660s, publishes the longest-running scientific journal in the world, *Philosophical Transactions of the Royal Society*. A recent issue devoted 17 articles to the current understanding of addiction. Interestingly, two of the articles were specifically concerned with natural addiction, pathologic gambling and overeating.

Frantic Learning

Drs. Robert Malenka and Julie Kauer, in a landmark paper in *Nature* in 2007 on mechanisms of the physical and chemical changes that occur in the brain cells of addicted individuals, said, "Addiction represents a pathological, yet powerful form of learning and memory." We now call these changes in brain cells "long term potentiation" and "long term depression," and speak of the brain as being *plastic*, or subject to change and re-wiring.

Dr. Norman Doidge, a neurologist at Columbia, in his book *The Brain That Changes Itself*, describes how pornography causes re-wiring of the neural circuits. He notes that in a study of men viewing internet pornography, the men looked "uncannily" like rats pushing the lever to receive cocaine in the experimental Skinner boxes. Like the addicted rats, the men were desperately seeking the next fix, clicking the mouse just as the rats pushed the lever.

Pornography addiction is *frantic* learning, and perhaps this is why many who have struggled with multiple addictions report that it was the hardest for them to overcome. Drug addictions, while powerful, are more passive in a "thinking" kind of way, whereas pornography viewing, especially on the internet, is a much more active process neurologically. The constant searching for and evaluating of each image or video clip for its potency and effect is an exercise in neuronal learning, limited only by the progressively rewired brain. Curiosities are thus fused into compulsions, and the need for a larger dopamine fix can drive the person from soft-core to hard-core to child pornography—and worse. A paper published in the *Journal of Family Violence* in 2009 revealed that 85 percent of men arrested for child pornography had also physically abused children.

Dehumanized Sexuality

In addition to cortical hypofrontality and downgrading of the mesolimbic dopaminergic systems, a third element appears to be important in pornography and sexual addiction. Oxytocin and vasopressin are important hormones in the brain with regard to physically performing sexually. Studies show that oxytocin is also important in increasing trust in humans, in emotional bonding between sexual mates, and in parental bonding. We are wired to bond to the object of our sexuality.

It is a good thing when this bonding occurs in a committed marriage relationship, but there is a dark side. When sexual gratification occurs in the context of pornography use, it can result in the formation of a virtual

mistress of sorts. Dr. Victor Cline, in his essay, "Pornography's Effects on Adult and Child," describes this process as follows:

In my experience as a sexual therapist, any individual who regularly masturbates to pornography is at risk of becoming, in time, a sexual addict, as well as conditioning himself into having a sexual deviancy and/or disturbing a bonded relationship with a spouse or girlfriend.

A frequent side effect is that it also dramatically reduces their capacity to love (e.g., it results in a marked dissociation of sex from friendship, affection, caring, and other normal healthy emotions and traits which help marital relationships). Their sexual side becomes in a sense dehumanized. Many of them develop an "alien ego state" (or dark side), whose core is antisocial lust devoid of most values.

In time, the "high" obtained from masturbating to pornography becomes more important than real life relationships. . . .

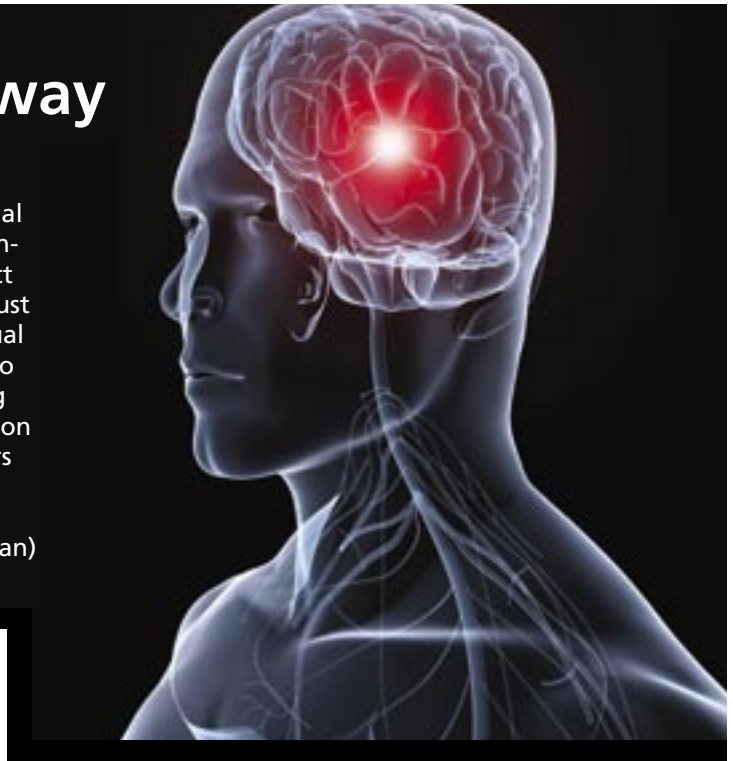
The process of masturbatory conditioning is inexorable and does not spontaneously remiss. The course of this illness may be slow and is nearly always hidden from view. It is usually a secret part of the man's life, and like a cancer, it keeps growing and spreading. It rarely ever reverses itself, and it is also very difficult to treat and heal. Denial on the part of the male addict and refusal to confront the problem are typical and predictable, and this almost always leads to marital or couple disharmony, sometimes divorce and sometimes the breaking up of other intimate relationships.

Pornographers promise healthy pleasure and a release from sexual tension, but what they often deliver is addiction, and an eventual decrease in pleasure. Paradoxically, the male patients I worked with often craved pornography but didn't like it. In the book *Pornified*, Pamela Paul gives numerous examples of this, and

The Erototoxic Pathway

When pornography is viewed, the autonomic nervous system overrides volitional control, especially in the absence of frontal-lobe inhibition in the person's brain. The direct route of pictorial erototoxic stimuli (which links lust to fear and shame) is through the eye, to the visual cortex in the brain, down the spinal cord, and into the reproductive organs, overriding and hijacking the frontal cortical areas of the brain, where reason and cognition are located. The process thus occurs without the viewer's informed consent or awareness. Thus begins addiction.

(Source: Judith Reisman)



describes one person who decided to limit his pornography use, not from a moralist or guilt-based perspective, but out of a desire to again experience pleasure in actual physical relationships with women.

"Porn impotence," where the man experiences sexuality preferentially with porn instead of a woman, is a real and growing phenomenon. When a man's sex drive has been diverted away from his spouse in this way, writes Dr. Cline, the wife can "easily sense this, and often [feels] very lonely and rejected."

An article in the *Journal of Sex and Marital Therapy* described a study showing that many women view the pornographic activities of their partners "as a form of infidelity":

The theme that runs through their letters is that the man has taken the most intimate aspect of the relationship, sexuality, which is supposed to express the bond of love between the couple and be confined exclusively to the relationship, and shared it with countless fantasy women. The vast majority of women in this study used words such as "betrayal," "cheating," and "affair" to describe the significance that their partner's involvement in pornography had for them.

A Triple Hook

Let me use a fishing analogy to illustrate some of these concepts. Every August, if possible, I try to be on the Unalakleet River in Alaska fishing for silver salmon. We use a particular lure, a triple hook called the Blue Fox pixie. As fishermen know, it is important to keep the drag loose just after hooking the fish, when it still has a lot of fight. As the fish tires, though, we tighten the drag and increase the resistance. In this way the fish is reeled into the boat and netted.

Similarly, pornography is a triple hook, consisting of cortical hypofrontality, dopaminergic downgrading, and oxytocin/vasopressin bonding. Each of these hooks is powerful, and they are synergistic. Pornography sets its hooks very quickly and deeply, and as the addiction progresses, it progressively tightens the dopamine drag until there is no more play in the line. The person is drawn ever closer to the boat, and the waiting net.

Demographic Disaster

Why is it essential to understand the addictive nature of pornography? Because if we view it as merely a bad habit, and do not afford those seeking healing the full support needed to overcome any true addiction, we will continue to be disappointed, as individuals and as a society. Pornography is the fabric used to weave a tapestry of sexual permissiveness that undermines the very foundation of society. Biologically, it destroys the ability of a population to sustain itself. It is a demographic disaster.

The author Tom Wolfe said, "The bigger pornography gets, the lower the birthrate becomes." Does he have a point? In the 1950s every country now in the European Union had a fertility rate above the 2.1 needed to sustain a population. Now none of them do, and several are at or near the 1.3 rate called the "lowest low fertility," from which it is virtually impossible to recover. It was in the late 1960s and early 1970s that this decline began, which corresponds precisely with the dawning of the sexual revolution. There is a direct correlation between the growing cultural dominance of the sexual revolution and the diminishing birthrate, and while causation may not be proven, it is strongly supported by the pheromone effect of pornography.

Demographic decline is, of course, multi-factorial. Urbanization, women in the workplace, gender role adaptation, and even increased life expectancy are important factors in the inverted population pyramids. But the primordial, or biological factors of human sexuality and family stability are primary and, in my opinion, haven't been appropriately weighted.

In 1934 Cambridge anthropologist Dr. J. D. Unwin published *Sex and Culture*. In it he examined 86 cultures spanning 5,000 years with regard to the effects of both sexual restraint and sexual abandon. His perspective was strictly secular, and his findings were not based in moralistic dogma. He found, without exception, that cultures that practiced strict monogamy in marital bonds exhibited what he called creative social energy, and reached the zenith of production. Cultures that had no restraint on sexuality, without exception, deteriorated into mediocrity and chaos. In *Houposia, The Sexual and Economic Foundations of a New Society*, published posthumously, he summarized:

In human records, there is no instance of a society retaining its energy after a complete new generation has inherited a tradition which does not insist on pre-nuptial and post-nuptial continence. . . . The evidence is that in the past a class has risen to a position of political dominance because of its great energy and that at the period of its rising, its sexual regulations have always been strict. It has retained its energy and dominated the society so long as its sexual regulations have demanded both pre-nuptial and post-nuptial continence. . . . I know of no exceptions to these rules.

Pornography as Flamethrower

Unwin also described what may be called "dopaminergic distraction," where pleasure-seeking dominates and productivity is diminished. Will Durant, in *The Lessons of History*, wrote that "sex is a river of fire that must be banked and cooled by a hundred restraints if it is not to consume in chaos both the individual and the group."

If "sex is a river of fire," dopamine and other brain drugs are the fuel. Like the astronauts of Apollo 11, we

can ride this energy to the heavens, or be consumed in its exhaust, depending on whether we are above the engines in the command module or underneath them, thus exposed to the heat. Dr. Henry A. Bowman said, "No really intelligent person will burn a cathedral to fry an egg, even to satisfy a ravenous appetite," yet the flamethrower of pornography is torching many cathedrals of marital, parental, and familial love today.

I applaud ongoing efforts to strengthen laws, but in our current legal and social environment, we cannot depend upon the government for restraint. We must face the reality that pornography will affect virtually every family in some way. Dr. Jason Carroll and his colleagues published a widely cited paper in the *Journal of Adolescent Research* that brings to light the scope of this problem. According to this paper, which reviewed data from five universities, 87 percent of college males and 31 percent of females view pornography. This data crosses all religious, educational, and social barriers.

Pornography has become the sex education venue for the majority of the next generation, an internet candy store, and it teaches that sex is physically and emotionally harmless, with no negative consequences. Men and women are mere visual drugs to be used and discarded, and sex is solely for personal pleasure. The truth, of course, is that those who actually perform sexually to make the pornography are consumed and discarded by pornographers; they are "throwaway people," as Dr. C. Everett Koop called them.

Help for Healing

Dr. John Mark Chaney's description of teenage pornography addiction is equally true for adults:

Professionals sometimes fail to understand the power of the compulsion youth are facing, and it is not uncommon for school, religious, or private-sector professionals to advocate a simple treatment plan that is based upon willpower or moral character. Since pornography can be an addiction, these "just say no" types of approaches are likely to only create

more frustration and self-defeating ideation . . . the intervention and treatment modality must recognize the problem as a full addiction, and treat it with the same consideration given to alcohol or chemical substances.

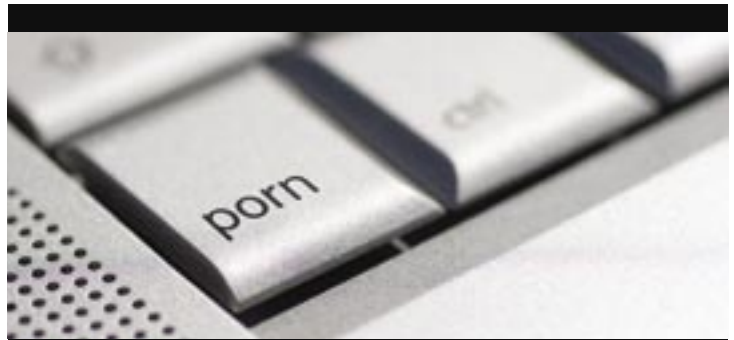
Regarding healing, Dr Victor Cline says,

I have found that there are four major factors that most predict success in recovery. *First*, the individual must be personally motivated to be free of his addiction and possess a willingness to do whatever it takes to achieve success. . . . You can never force a person to get well if he doesn't want to. . . . *Second*, it is necessary to create a safe environment, which drastically reduces access to porn and other sexual triggers. . . . *Third*, he should affiliate with a twelve-step support group. . . . *Fourth*, the individual needs to select a counselor/therapist who has had special training and success in treating sexual addictions.

Let us reach out with understanding to those already trapped, who live in shame and secrecy. Shaming them will not heal them. As Jeffery R. Holland said when he was president of Brigham Young University, "When a battered, weary swimmer tries valiantly to get back to shore, after having fought strong winds and rough waves which he should never have challenged in the first place, those of us who might have had better judgment, or perhaps just better luck, ought not to row out to his side, beat him with our oars, and shove his head back underwater."

Secular philosophy will not heal them either, and the government can't save them. Step 2 of the Twelve-Step program for sex addicts says that those healed "came to believe that a Power greater than [themselves] could restore [them] to sanity." Interestingly, peer-reviewed studies support the success of Twelve-Step programs, which are based on the aid of a Higher Power.

Indeed, Unwin's research, conducted from a secular perspective, demonstrated



"Today, the number of people looking at pornography is staggering. Americans rent upwards of 800 million pornographic videos and DVDs (about one in five of all rented movies is porn), and the 11,000 porn films shot each year far outpaces Hollywood's yearly slate of 400. Four billion dollars a year is spent on video pornography in the United States, more than on football, baseball, and basketball."

—Pamela Paul, author of *Pornified*

that all advanced societies studied, when at their cultural and productive apices, built temples to whatever gods they worshiped. It was in this subjugation of the secular to the sacred, of the limbic to the lobe, that they peaked in their self-control and, therefore, in their self-determination. Will Durant, who described himself as agnostic, also found that "there is no moral substitute" for religion in providing this tempering of the limbic.

The Battle Is Joined

Pornography *is* a drug that produces an addictive neurochemical trap, "past reason hunted, and no sooner had, past reason hated," as Shakespeare put it in Sonnet 129. And yes, as we have seen, ice cream and sexuality *can be* akin to crack cocaine.

While we must continue to fight the good fight legally and societally, we are way beyond avoidance as our only defense. Pornography wants you, it wants your husband or wife, it wants your son and daughter, your grandchildren, and your in-laws. It doesn't share well, and it doesn't leave easily. It is a cruel master, and seeks more slaves.

Abraham Lincoln, when he faced a similar war over freedom, said, "If all do not join now to save the good old ship of the Union this voyage nobody will have a chance to pilot her on another voyage." All hands on deck. The battle is on for sanity and serenity, for peace and prosperity, for today, and for all our tomorrows. ☺