

Harmful Effects of Pornography

2016 Reference Guide



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Contents

Brain

1.1	Understanding the Brain's Reward Center	3
1.2	How Pornography Alters Sexual Tastes.....	5
1.3	Pornography Induced Erectile Dysfunction (ED).....	7
1.4	The Impact of Pornography on Grey Matter	9
1.5	How Pornography Negatively Contributes to Mental & Emotional Health	10
1.6	How Mirror Neurons Influence Brain Development	12
1.7	How Pornography Affects Behavior	20
1.8	The Role of DeltaFosB in Brain Pathways.....	22
1.9	How Pornography Changes the Brain.....	23
1.10	How Pornography is Similar to a Drug	26
1.11	How & Why Pornography Can Be Addictive	28
1.12	Why the Adolescent Brain Is Vulnerable.....	33
1.13	Pornography Addiction Escalates	36
1.14	Healing the Brain From Pornography Exposure	38

Heart

2.1	How Pornography Warps Expectations.....	41
2.2	How Pornography Warps Expectations of Sex.....	44
2.3	How Pornography Impacts Partner's Mental & Emotional Health	46
2.4	How Pornography Changes Perceptions of Partners	49
2.5	How Pornography Influences Acquired Sexual Tastes	51
2.6	How Pornography Impacts Sexual Intimacy	53
2.7	How Pornography Impacts Relationships & Families	55
2.8	How Pornography Encourages Objectification	58
2.9	How Pornography Use Decreases Interest in Actual Partners & Actual Sex	59
2.10	How Pornography Can Lead to Physical Danger for Partners.....	60

World

3.1	Pornography Usage in Society	65
3.2	How We Learn From Pornography.....	67
3.3	How Pornography Distorts Views of Women & Gay Men	69
3.4	How Pornography Distorts Views of Sex	71
3.5	How Pornography Encourages Harmful Behavior	74
3.6	How Pornography Impacts Families	78
3.7	How Pornography Encourages Sexual Violence	79
3.8	The Connection Between Pornography & Prostitution	86
3.9	Child Pornography.....	89
3.10	The Connection Between Pornography & Sex Trafficking.....	91

Brain

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Brain

1.1

Understanding the Brain's Reward Center

1. All mammals have essentially the same reward center in their brain.

● Thomas Lewis, Fari Amini, and Richard Lannon, *A General Theory of Love*, New York: Vintage Books, 2000.

2. To steer us toward things that will help us: the reward center uses two different pleasure systems, one that excites and another that satisfies. The first system motivates us to go after things; it is largely fueled by dopamine. The second system makes us feel satisfied and happy after accomplishing something. It's run by endorphins.

● Norman Doidge, *The Brain That Changes Itself*, New York: Viking, 2007.

3. Porn activates both of the reward center's pleasure systems, but the wanting system is stronger than the satisfying system; porn hyper-activates our wanting system, pumping out dopamine in response to each new image. As a result, the user can get caught in a loop of wanting, using, pumping out a bunch of dopamine, in response to new images found while using, and then wanting even more.

● Norman Doidge, *The Brain That Changes Itself*, New York: Viking, 2007.

4. The reward center drives us to pursue things that improve our chances of survival and the survival of our genes, including food,¹ sex,² love,³ and novelty.⁴

● 1—R. A. Wise, "Dual Roles of Dopamine in Food and Drug Seeking: The Drive Reward Paradox," *Biological Psychiatry* 73, no. 9 (2013): 819–26.

2—James G. Pfaus and Lisa A. Scepkowski, "The Biologic Basis for Libido," *Current Sexual Health Reports* 2, no. 2 (2005): 95–100.

3—Kimberly A. Young, Kyle L. Gobrogge, Yan Liu, and Zuoxin Wang, "The Neurobiology of Pair Bonding: Insights from a Socially Monogamous Rodent," *Frontiers in Neuroendocrinology* 32, no. 1 (2011): 53–69.

4—Parkitna, J. R., et al. "Novelty Seeking Behaviors and the Escalation of Alcohol Drinking After Abstinence in Mice Are Controlled by Metabotropic Glutamate Receptor 5 on Neurons Expressing Dopamine D1 Receptors," *Biological Psychiatry* 73, no. 3 (2013): 263–70.

5. Dopamine helps rewire the brain so that we remember the things we need to for survival.

● Cathleen Genova, "Learning Addiction: Dopamine Reinforces Drug-Associated Memories," *Research Press Release*, September 9, 2009, http://www.eurekalert.org/pub_releases/200909/cplad090309.php.

6. Dopamine encourages us to seek and search for things that will bring us pleasure.

● John D. Salamone and Mercè Correa, "The Mysterious Motivational Functions of Mesolimbic Dopamine," *Neuron* 76, no. 3 (2012): 470–85.

7. Dopamine levels increase when we encounter something novel.

● Cell Press, "Pure Novelty," www.sciencedaily.com/releases/2006/08/060826180547.htm.

8. Dopamine levels increase when something is surprising.

● Max Miller, "Big Think Interview With Adam Kepecs," *BigThink.com*, August 20, 2010, <http://bigthink.com/videos/big-thinkinterviewwithadamkepecs>.

9. Dopamine levels increase when something produces anxiety.

● David H. Barlow, David K. Sakheim, and J. Gayle Beck, "Anxiety Increases Sexual Arousal," *Journal of Abnormal Psychology* 92, no. 1 (1983): 49–54.

10. Dopamine levels go up in response to seeking.

● Bianca C. Wittmann, Nico Bunzeck, Raymond J. Dolan, and Emrah Düzel, "Anticipation of Novelty Recruits Reward System and Hippocampus While Promoting Recollection," *NeuroImage* 38, nos. 1–9 (2007): 194–202.

11. The brain is stimulated by expectations being violated.

● J. Spicer, et al. "Sensitivity of the Nucleus Accumbens to Violations in Expectation of Reward," *NeuroImage* 34, no. 1 (2007): 455–61.

12. Research has found that novelty and expecting a reward amplify each other to increase excitement and rewire the brain's reward circuitry.

● R. M. Krebs, D. Heipertz, H. Schuetze, and E. Düzel, "Novelty Increases the Mesolimbic Functional Connectivity of the Substantia Nigra/Ventral Tegmental Area (SN/VTA) During Reward Anticipation: Evidence from High-Resolution fMRI," *NeuroImage* 58, no. 2 (2011): 647–55.

13. Fantasizing or imagining doing something activates many of the same brain circuits as actually doing it.

● “Why Does Vivid Memory ‘Feel So Real?’ Real Perceptual Experience, Mental Replay Share Similar Brain Activation Patterns,” Medical Express, July 23, 2012, http://medicalxpress.com/news/201207vividmemoryrealperceptual_mental.html.

14. To some degree, the brain unconsciously learns to associate arousal with what the person is watching every time they're sexually aroused by porn.

● James G. Pfaus, et al., “Who, What, Where, When (and Maybe Even Why)? How the Experience of Sexual Reward Connects Sexual Desire, Preference, and Performance,” Archives of Sexual Behavior 41 (2012): 31–62.

15. Teens are more sensitive to dopamine.

● University of Pittsburgh, “Teen Brains Over-Process Rewards, Suggesting Root of Risky Behavior, Mental Ills,” Phys.org, January 2011, <http://phys.org/news/201101-teenbrainsoverprocessrewardsroot.html>.

16. Teen brains produce higher levels of DeltaFosB.

● Eric J. Nestler, “Transcriptional Mechanisms of Addiction: Role of DeltaFosB,” Philosophical Transactions of the Royal Society B 363, no. 1507 (2008): 3245–55.

17. As a result, the teen brain is especially plastic.

● Gregory Z. Tau and Bradley S. Peterson, “Normal Development of Brain Circuits,” Neuropsychopharmacology 35, no. 1 (2010): 147–68.

18. Young porn users seem to be more susceptible to brain changes caused by porn.

● (Valerie Voon, et al., “Neural Correlates of Sexual Cue Reactivity in Individuals with and without Compulsive Sexual Behaviours,” PLOS One (2014).

19. Oxytocin, which is released in orgasm, works as an eraser for old brain pathways, melting them away so that largescale rewiring can happen. In a relationship, this helps by erasing old, selfish pathways and making room for new ones focused on the combined success of the couple.

● Norman Doidge, The Brain that Changes Itself.

20. “The brain blooms with neural connections until a child reaches the age of 11 or 12, and then it selectively prunes away the underused ones, or ‘grey matter,’ throughout adolescence. As the brain grows more streamlined, it becomes better at transmitting information. The remaining connections are then made more efficient by a process called myelination, which essentially insulates neuronal axons with ... white matter.”

● E. B. “How Teenage Brains Are Different,” The Economist, March 18, 2015, <http://www.economist.com/blogs/economistexplains/2015/03/economistexplains-15?src=scrn/fb/wl/ee/howteenagebrainsaredifferent> For more on adolescent brain pruning: Fuchun Lin, et al., “Abnormal White Matter Integrity in Adolescents with Internet Addiction Disorder: A TractBased Spatial Statistics Study,” PLoS One (2012).

21. The adolescent brain prunes back neural circuitry by adulthood to make responses more efficient. ¹ This process makes it more difficult for them to choose things other than the patterns they've set when they reach full adulthood. ²

● 1—Tamara L. DoremusFitzwater, Elena I. Varlinskaya, and Linda P. Spear, “Motivational Systems in Adolescence: Possible Implications for Age Differences in Substance Abuse and Other RiskTaking Behaviors,” Brain and Cognition 72, no. 1 (2010): 114–23.

2—C. L. Sisk and J. L. Zehr, “Pubertal Hormones Organize the Adolescent Brain and Behavior,” Frontiers in Neuroendocrinology 26, nos. 3–4 (2005): 163–74.

22. Supranormal stimuli simulating natural reward can override the brain's mechanisms that signal when we should be finished with something.

● Deirdre Barrett, “Supernormal Stimuli,” HuffPost Books, June 16, 2010, http://www.huffingtonpost.com/deirdre_barrett/supernormal-stimuli_b_613466.html.

23. Over time, the reward center's dopamine receptors will shrink in response to chronic overstimulation.

● P. Kenny, G. Voren, and P. Johnson. “Dopamine D2 Receptors and Striatopallidal Transmission in Addiction and Obesity.” Current Opinion in Neurobiology 23, no. 4 (2013): 535–538.) The brain can also reduce the amount of dopamine it puts out. (Eric Nestler, “Is There a Common Molecular Pathway for Addiction?” Nature Neuroscience 8, no 11 (2005): 1445–49.

24. When researchers compared brain scans of porn users to scans of nonusers, they found that the more porn the person had used, the less their reward center activated when porn images were flashed on a screen.

● Kühn, Simone and Jürgen Gallinat. “Brain Structure and Functional Connectivity Associated with Pornography Consumption: The Brain on Porn.” JAMA Psychiatry (2014): 827–34.

25. With a dulled reward center, a person can't feel dopamine's effects as well. As a result, the porn they've been using can stop producing the same excitement they used to feel about it. As a result, many go in search of more hardcore material to get a bigger dopamine burst.

● Angres, D. H., and Bettinardi-Angres, K. “The Disease of Addiction: Origins, Treatment, and Recovery.” Disease-a-Month 54 (2008): 696–721

26. Until being overwhelmed by addiction, the mesolimbic reward center serves adaptively to motivate behaviors benefiting both individuals and their species. From deep within the brainstem, it coordinates primal incentives to seek such survival requirements as nourishment, nurture of the young, and sexual contact.

● Bostwick, J. M., & Bucci, J. E. (2008). Internet sex addiction treated with naltrexone. Mayo Clinic Proceedings, 83(2), 226-230.

Brain

1.2

How Pornography Alters Sexual Tastes

1. Sexual interests are different from fundamental sexual orientation.

● Karolina Müller, et al., “Changes in Sexual Arousal as Measured by Penile Plethysmography in Men with Pedophilic Sexual Interest,” *Journal of Sexual Medicine* 11 (2014): 1221–29.

2. Sexual interests are conditionable—we can change them, similar to the way Pavlov trained a dog to salivate when it heard a bell.

● Mirte Brom, Stephanie Both, Ellen Laan, Walter Everaerd, and Philip Spinhoven, “The Role of Conditioning, Learning and Dopamine in Sexual Behavior: A Narrative Review of Animal and Human Studies,” *Neuroscience and Biobehavioral Reviews* 11 (2013).

3. The brain’s reward center doesn’t know the difference between “porn that’s OK to use” and “porn that’s not cool.” All it knows is that it likes dopamine. So when something sick or disturbing pops up and is linked with sexual arousal, the brain still starts wires that into the user’s sexual template.

● Y. Goto, S. Otani, and A. A. Grace, “The Yin and Yang of Dopamine Release: A New Perspective,” *Neuropharmacology* 53, no. 5 (2007): 583–87.

4. “Globalization also creates an opportunity for us to develop new tastes in what we find attractive Neurons that fire together wire together, and feeling pleasure in the presence of [something normally unappealing] causes it to get wired into the brain as a source of delight.”

● Norman Doidge, *The Brain that Changes Itself*.

5. When a person uses porn, their brain is wiring together what they’re seeing in porn with the feelings of arousal it creates, building new brain maps for both what they think is sexy and what they expect from their partner.

● James G. Pfaus, et al., “Who, What, Where, When (and Maybe Even Why)? How the Experience of Sexual Reward Connects Sexual Desire, Preference, and Performance,” *Archives of Sexual Behavior* 41 (2012): 31–62.

6. Studies have found that porn use is correlated with less sexual and relationship satisfaction and changed sexual tastes.

● E. M. Morgan, “Associations Between Young Adults’ Use of Sexually Explicit Materials and Their Sexual Preferences, Behaviors, and Satisfaction,” *Journal of Sex Research* 48, no. 6 (2011): 520–30.

7. In a study, researchers found that when male subjects saw the same porn film repeatedly, they found it harder to get an erection to the film over time and they said they were progressively less aroused by it. When researchers introduced a new video after 18 viewings of the old one, both subjects erections and arousal spiked.

● E. Koukounas and B. Over, “Changes in the Magnitude of the Eyeblick Startle Response During Habituation of Sexual Arousal,” *Behaviour Research and Therapy* 38, no. 6 (2000): 573–84.

8. Researchers have found that women become less sexually aroused by repeated viewing of the same porn, but become aroused again when novel porn is introduced.

● I. Meuwissen and R. Over, “Habituation and Dishabituation of Female Sexual Arousal,” *Behaviour Research and Therapy* 28, no. 3 (1990): 217–26.

9. Researchers have found that the more porn a person had used, the less their reward center activated when porn images were flashed on a screen. The researchers said, “This is in line with the hypothesis that intense exposure of pornographic stimuli results in a downregulation of the natural neural response to sexual stimuli.”

● Simone Kühn and Jürgen Gallinat, “Brain Structure and Functional Connectivity Associated with Pornography Consumption: The Brain on Porn,” *JAMA Psychiatry* (2014): 827–34.

10. As a porn user builds up tolerance “the pleasure of sexual discharge must be supplemented with the pleasure of an aggressive release, and sexual and aggressive images are increasingly mingled—hence the increase in sadomasochistic themes in hardcore porn.”

● Norman Doidge, *The Brain that Changes Itself*

11. Something that produces anxiety can increase sexual arousal.

● Sharlene A. Wolchik, et al., “The Effect of Emotional Arousal on Subsequent Sexual Arousal in Men,” *Journal of Abnormal Psychology* 89, no. 4 (1980): 595–98.

12. The brain pumps out an increased amount of dopamine in response to things that are new, shocking or surprising.

● Norman Doidge, *The Brain That Changes Itself*, New York: Viking, 2007.

13. When the brain’s pleasure centers fire, it becomes more difficult for the brain’s centers for pain or aversion to fire at the same time, which means that things that normally would be unappealing or even disgusting suddenly don’t bother us as much.

● Norman Doidge, *The Brain that Changes Itself*

14. In a 2012 NoFap poll of users, 56 percent of respondents agreed with the statement, “My tastes became increasingly ‘extreme’ or ‘deviant’.”

● NoFap Survey results, <http://www.reddit.com/r/NoFap>, April 2012, <https://docs.google.com/file/d/0B7q3tr4EV02wbkpTTVtK4R2VGbm8/edit?pli=1>

15. Researchers have found that the younger a person is when they first start using porn, the more likely they are to use bestiality or child porn.

● Kathryn C. SeigfriedSpellar and Marcus K. Rogers, “Does Deviant Pornography Use Follow a GuttmanLike Progression?” *Computers in Human Behavior* 29, no. 5 (2013): 1997–2003.

16. It's easier for someone to recover from having their sexual tastes altered when those altered tastes were acquired as an adult than it is for someone who acquired problematic sexual tastes during their critical periods of development in youth and adolescence.

● Norman Doidge, *The Brain that Changes Itself*.

17. A 2004 study done by Swedish researchers found that more than half of young men felt porn use had impacted their sexual behavior.

● T. Tydén and C. Rogala, "Sexual Behaviour Among Young Men in Sweden and the Impact Journal of STD & AIDS 15, no. 9 (2004): 590–93.

18. Researchers in England recently published a study on anal sex practices among heterosexual 16 to 18-year-olds. They found that while few of the young men or women thought anal sex was enjoyable and they overwhelmingly expected it to be painful for women, still about a quarter of them had done it. When researchers asked why, one of the top responses was that the "men wanted to copy what they saw in pornography." The researchers also reported that it seemed to be taken for granted by many of the study's participants that men would try to persuade or coerce their partners into having anal sex, even though they expected it to be painful for women. "Even in otherwise seemingly communicative and caring partnerships, some men seemed to push to have anal sex with their reluctant partner despite believing it likely to hurt her," their paper states. "Women seemed to take for granted that they would either acquiesce to or resist their partners' repeated requests, rather than being equal partners in sexual decision making."

● Marston, C. and R. Lewis. "Anal Heterosex Among Young People and Implications for Health Promotion: A Qualitative Study in the UK." *BMJ Open* 4, no. 8 (2014).

19. Images of what the reward center interprets as new potential sexual partners are endlessly available all day, every day, in nearly limitless supply—nothing like what's found in nature.

● Wilson, Gary. *Your Brain On Porn*. Kent, England: Commonwealth, 2014.

20. Actors have often been surgically altered to have larger breasts, and many use drugs either to maintain erections for abnormally long periods of time or to endure the pain.

● Hilton, Donald L. "Pornography Addiction — A Supranormal Stimulus Considered in the Context of Neuroplasticity." *Socioaffective Neuroscience & Psychology* 3 (2013).

21. The sex acts shown in pornography are unrealistic and often abusive.

● Hilton, Donald L. "Pornography Addiction — A Supranormal Stimulus Considered in the Context of Neuroplasticity." *Socioaffective Neuroscience & Psychology* 3 (2013).

22. Researchers have found that women become less sexually aroused by repeated viewing of the same porn, but become aroused again when novel porn is introduced.

● I. Meuwissen and R. Over, "Habituation and Dishabituation of Female Sexual Arousal," *Behaviour Research and Therapy* 28, no. 3 (1990): 217–26.

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26. The brain pumps out an increased amount of dopamine in response to things that are new, shocking or surprising.

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● Norman Doidge, *The Brain that Changes Itself*

28. In a 2012 NoFap poll of users, 63 percent of respondents agreed with the statement, "My tastes became increasingly 'extreme' or 'deviant'."

● NoFap Survey results, <http://www.reddit.com/r/NoFap>, April 2012, <https://docs.google.com/file/d/0B7q3tr4EV02wbkPTTVk4R2VGbm8/edit?pli=1>

29. Researchers have found that the younger a person is when they first start using porn, the more likely they are to use bestiality or child porn.

● Kathryn C. SeigfriedSpellar and Marcus K. Rogers, "Does Deviant Pornography Use Follow a GuttmanLike Progression?" *Computers in Human Behavior* 29, no. 5 (2013): 1997–2003.

Brain

1.3

Pornography Induced Erectile Dysfunction (ED)

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1. "It's hard to know exactly how many young men are suffering from porn-induced ED. But it's clear that this is a new phenomenon, and it's not rare."
—Dr. Abraham Morgentaler

● "LIVE BLOG: Porn-induced erectile dysfunction and young men." 16x9 (TV), March 31, 2014. <http://globalnews.ca/news/1232800/live-blog-porn-induced-erectile-dysfunction-and-young-men>.

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2. I can tell how much porn a man watches as soon as he starts talking candidly about any sexual dysfunction he has. ... A man who masturbates frequently can soon develop erection problems when he's with his partner. Add porn to the mix, and he can become unable to have sex. ... A penis that has grown accustomed to a particular kind of sensation leading to rapid ejaculation will not work the same way when it's aroused differently. Orgasm is delayed or doesn't happen at all."
—Harry Fisch, MD

● Harry Fisch, *The New Naked: The Ultimate Sex Education for Grown Ups*, Naperville: Sourcebooks Inc., 2014.

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3. [Speaking of porn-induced ED] "It starts with lower reactions to porn sites. Then there is a general drop in libido, and in the end it becomes impossible to get an erection."
—Carlo Foresta, former president of the Italian Society of Andrology and Sexual Medicine.

● NewsCore. "Scientists: Too Much Internet Porn May Cause Impotence." Fox News, February 25, 2011.

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4. In 1992, the nationally representative National Health and Social Life Survey found that only 5 percent of men in the U.S. aged 18 to 59 reported problems with ED. Problems with low sexual desire also came in at only 5 percent for the same group, and in both cases, men ages 50 to 59 were three times more likely to report the problem than 18- to 29-year-olds. That was before Internet porn.

● Laumann, Edward O. and George Herbert Mead. "National Health and Social Life Survey." *The National Opinion Research Center at the University of Chicago* (1992).

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5. Post-Internet porn, unprecedented numbers of young men are reporting ED.

● P. Capogrosso, et al. "One Patient Out of Four with Newly Diagnosed Erectile Dysfunction Is a Young Man—Worrisome Picture from the Everyday Clinical Practice," *Journal of Sexual Medicine* 10, no. 7 (2013): 1833–41; Lucia F. O'Sullivan, et al., "Prevalence and Characteristics of Sexual Functioning among Sexually Experienced Middle to Late Adolescents," *Journal of Sexual Medicine* 11, no. 3 (2014): 630–41; S. L. Wilcox, S. Redmond, and A. M. Hassan, "Sexual Functioning in Military Personnel: Preliminary Estimates and Predictors," *Journal of Sexual Medicine* 11, no. 10 (2014): 2537–45.

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6. A Swiss study published in 2012 found that 30 percent of 18- to 25-year-olds had ED.

● Mialon, A., A. Berchtold, P. A. Michaud, G. Gmel, and J. C. Suris. "Sexual Dysfunction Among Young Men: Prevalence and Associated Factors." *Journal of Adolescent Health* 51, no. 1 (2012): 25–31

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7. A study by Canadian researchers published in 2014 found that among 16 to 21-year-old males, 53.5 percent had sexual problems. The study found that 27 percent of males reported ED, 24 percent reported problems with orgasm, and 10 percent reported low sexual desire.

● O'Sullivan, Lucia, L. Brotto, E. Byers, J. Majerovich, J. Wuest. "Prevalence and Characteristics of Sexual Functioning Among Sexually Experienced Middle to Late Adolescents." *The Journal of Sexual Medicine* 11, no. 3 (2014): 630–41.

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8. In 2008, a survey in France found that 20 percent of younger men had no interest in sex.

● Henry Samuel, "French Women 'Are the Sexual Predators Now,'" *The Telegraph*, March 7, 2008.

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9. In 2010, a poll taken in Japan found that more than 36% of men aged 16 to 19 had no interest in sex, a near 19 percent jump from three years earlier.

● Yuri Tomikawa, "No Sex, Please, We're Young Japanese Men," *The Wall Street Journal*, January 13, 2011.

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10. In Italy, research looking at porn specifically and its impact on sexual problems in men ages 19 to 25 found that on a scale ranking sexual desire from 1 to 10 (10 being the highest), porn users averaged a score of 4.21, while non-porn users came in at 8.02. Erectile function was also 30 percent lower among porn users compared to non-users, and those on porn also earned lower scores on overall sexual satisfaction and orgasm function.

● Foresta, Carlo. "Sessualita Mediatca e Nuove Forme Di Patologia Sessuale Campione 125 Giovani Maschi." ("Sexuality Media and New Forms of Sexual Pathology Sample 125 Young Males, 19–25 Years"), study to be published, discussed in "Progetto Androlife: Salute e Sesso." Fondazione Foresta Onlus per la Ricerca Biomedica, presentation delivered February 21, 2014, <http://www.associazionevenetoalute.it/www.associazionevenetoalute.it/uploads/foresta.pdf>.

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11. A recent longitudinal study looking at the rates of sexual problems in high school teens found that the rates of such problems doubled in eight years, with loss of desire increasing by 600 percent. Dr. Carlo Foresta blames Internet porn.

● Foresta, Carlo. "Progetto Androlife: Salute e Sesso." Fondazione Foresta Onlus per la Ricerca Biomedica, presentation delivered February 21, 2014, Slide 53 <http://www.associazionevenetoalute.it/www.associazionevenetoalute.it/uploads/foresta.pdf>.

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12. A study done at Cambridge University looking at men with porn addiction found that more than half of the subjects reported "that as a result of excessive use of sexually explicit materials, they had ... experienced diminished libido or erectile function specifically in physical relationships with women (although not in relationship to the sexually explicit material).

● Valerie Voon, et al. "Neural Correlates of Sexual Cue Reactivity in Individuals with and without Compulsive Sexual Behaviors," *PLOS One* (2014).

13. Dopamine levels increase when something violates expectations, but it declines when something doesn't meet what we—subconsciously or consciously—expect.

● Elizabeth E. Steinberg, et al., "A Causal Link Between Prediction Errors, Dopamine Neurons and Learning," *Nature Neuroscience* 16 (2013): 966–73.

14. Maintaining an erection requires adequate dopamine in the brain's reward center ¹ as well as in the sexual centers of the male brain. ²

● 1—F. Giuliano and J. Allard, "Dopamine and Male Sexual Function," *European Urology* 40, no. 6 (2001): 601–08.
2— M. R. Melis and A. Argiolas, "Central Control of Penile Erection: A Re-visitation of the Role of Oxytocin and Its Interaction with Dopamine and Glutamic Acid in Male Rats," *Neuroscience & Biobehavioral Reviews* 35, no. 3 (2011): 939–55.

15. When a person is continuously strengthening the brain maps linking sexual excitement to porn, those maps enlarge and can crowd out maps linking sexual excitement to a real person or real sex.

● Doidge, Norman. *The Brain that Changes Itself*. New York: Viking, 2007.

16. "A lot of the men who grow up now watching Internet porn or anything else learn their sexuality and how to get stimulated down there in a way that is not mimicked by actual sex."

— Dr. Abraham Morgentaler

● James, Hannah and Sean O'Shea. "Generation X-Rated." 16x9. March 29, 2014.

17. Researchers have found that even moderate porn use was correlated with having a lowered response to sexual cues in the brain. While it didn't conclusively show that porn had caused the changes, that was the theory the researchers found most likely. They even subtitled their study "The Brain on Porn."

● Simone Kühn and Jürgen Gallinat, "Brain Structure and Functional Connectivity Associated with Pornography Consumption: The Brain on Porn." *JAMA Psychiatry* (2014): 827–34.

18. Lowered dopamine signaling is associated with diminished sexual behavior.

● Elaine M. Hull, "Sex, Drugs and Gluttony: How the Brain Controls Motivated Behaviors," *Physiology & Behavior* 104, no. 1 (2011): 173–77.

19. Researchers in Italy took brain scans of men with ED for which there was no obvious physical cause. They found that their brains showed reduced grey matter in the reward center (which means reduced dopamine signaling) and the sexual centers of the hypothalamus. ¹ Porn is associated with having reduced grey matter. ²

● 1—N. Cera, et al., "Macrostructural Alterations of Subcortical Grey Matter in Psychogenic Erectile Dysfunction," *PLoS One* 7, no. 6 (2012).
2— Kühn, Simone and Jürgen Gallinat. "Brain Structure and Functional Connectivity Associated with Pornography Consumption: The Brain on Porn." *JAMA Psychiatry* (2014): 827–34

20. "Pills [such as viagra] will do something physiologic. They can provide blood flow to the genitalia. But what they can't do is stimulate the most sexual organ, which is the brain. So when the brain is desensitized, you create a mismatch. And some men will even say, 'Well I do get an erection' even in these men who are able to be treated. Even with that erection, they do feel desensitized. They don't get pleasure. So it doesn't treat the pleasure component, and they feel that maybe I'm watching someone else having sex or it's not even my penis; I feel dissociated from the experience. And when they have that they have this brain-penis mismatch created where the brain is simply not feeling pleasure even if they may or may not achieve an erection."

— Andrew Kramer, MD

● "Can Porn Cause Erectile Dysfunction?" Dr. Oz Show (TV), January 31, 2013, <http://www.doctoroz.com/videos/can-porn-cause-erectile-dysfunction-pt-2>.

21. Doctors and past porn users have found that leaving porn behind can fix erectile dysfunction problems.

● "Can Porn Cause Erectile Dysfunction?" Dr. Oz Show (TV), January 31, 2013, <http://www.doctoroz.com/videos/can-porn-cause-erectile-dysfunction-pt-1>.

Brain

1.4

The Impact of Pornography on Grey Matter

1. Studies have long shown that using illegal drugs like meth and cocaine (which over-stimulate the brain's reward center with dopamine) can cause the brain's frontal lobes to shrink.¹ Scientists have also found this type of shrinkage in the brains of people who have problems with natural rewards, such as overeating.²

● 1—Hilton, Donald L. "Pornography Addiction — A Supranormal Stimulus Considered in the Context of Neuroplasticity." *Socioaffective Neuroscience & Psychology* 3 (2013).
2—Miner, M. H., N. Raymond, B. A. Mueller, M. Lloyd, K. O. Kim. "Preliminary Investigation of the Impulsive and Neuroanatomical characteristics of Compulsive Sexual Behavior." *Psychiatry Research* 174, no. 2 (2009): 146–51.

2. Just like the brain can take away some of its dopamine receptors and start producing less dopamine when it's being overwhelmed, it can also take away connections between nerve cells to protect itself from being overwhelmed by brain chemicals.¹ Since those nerve cell connections look like grey tentacles stretching from one nerve cell to the next, when the brain gets rid of them it's called a "loss of grey matter."

● 1—Kenny, P., G. Voren, P. Johnson. "Dopamine D2 Receptors and Striatopallidal Transmission in Addiction and Obesity." *Current Opinion in Neurobiology* 23, no. 4 (2013): 535–538.
2—Gary Wilson, "Porn-Induced Erectile Dysfunction," *Your Brain on Porn*, August 2014.

3. People with Internet addiction have been found to have less grey matter in several important areas of the brain, including the frontal lobes, (which oversee things like planning, prioritizing, and controlling impulses) the striatum, (which is involved with the reward center and helps us control our behavior;) and the insula (an area involved with feeling empathy and compassion for others). The vast majority of people with porn addictions have Internet addictions.

● Brand, M., K. S. Young, and C. Laier. "Prefrontal Control and Internet Addiction: A Theoretical Model and review of Neuropsychological and Neuroimaging Findings." *Frontiers in Human Neuroscience* 8 (2014).

4. Kuhn study showed that even moderate porn use correlated with having reduced grey matter. While it didn't conclusively show that porn had caused the changes, that was the theory they found most likely. They even subtitled their study "The Brain on Porn."

● Simone Kühn and Jürgen Gallinat, "Brain Structure and Functional Connectivity Associated with Pornography Consumption: The Brain on Porn." *JAMA Psychiatry* (2014): 827–34.

5. Kuhn study found that higher numbers of hours watching porn per week and more years of watching porn correlated with reduced grey matter in the brain's striatum (reward circuitry), which is important in motivation and decision making. This is also indicative of having a numbed pleasure response. The researchers interpreted this as an effect of porn use.

● Simone Kühn and Jürgen Gallinat, "Brain Structure and Functional Connectivity Associated with Pornography Consumption: The Brain on Porn." *JAMA Psychiatry* (2014): 827–34.

6. Research has found increased porn use to be correlated with decreased connection between the reward center and the brain's prefrontal cortex, a problem known to be associated with making poor choices and being unable to control impulses.

● Simone Kühn and Jürgen Gallinat, "Brain Structure and Functional Connectivity Associated with Pornography Consumption: The Brain on Porn." *JAMA Psychiatry* (2014): 827–34.

7. Researchers have shown that Internet addiction involves problems with memory, concentration, and impulse control in some people and that those people show the corresponding changes to their brain's prefrontal regions.

● Matthias Brand, Kimberly S. Young, and Christian Laier, "Prefrontal Control and Internet Addiction: A Theoretical Model and Review of Neuropsychological and Neuroimaging Findings," *Frontiers in Human Neuroscience* 8, no. 375 (2014).

8. Addiction researchers have found that brain problems seen in Internet addicts, similar to the problems seen among porn users, improved with abstinence and treatment, indicating that it was the addiction that was the problem, not a preexisting condition.

● T. M. Zhu, et al., "Effects of Electroacupuncture Combined Psycho-Intervention on Cognitive Function and Event-Related Potentials P300 and Mismatch Negativity in Patients with Internet Addiction," *Chinese Journal of Integrative Medicine* 18, no. 2 (2012).

Brain

1.5

How Pornography Negatively Contributes to Mental & Emotional Health

1. Reduced dopamine signaling is associated with lowered risk taking.

● A. R. Oliveira, et al., "Conditioned Fear Is Modulated by D2 Receptor Pathway Connecting the Ventral Tegmental Area and Basolateral Amygdala," *Neurobiology of Learning and Memory* 95, no. 1 (2011): 37–45.

2. Reduced dopamine signaling is associated with increased anxiety as well as an increased likelihood for angry overreaction.

● Marijke Vroomen Durning, "PET Scans Link Low Dopamine Levels and Aggression," *Diagnostic Imaging*, June 12, 2012, <http://www.diagnosticimaging.com/nuclear-imaging/pet-scans-link-low-dopamine-levels-and-aggression>.

3. Reduced dopamine signaling is associated with an inability to focus ¹ and lack of motivation.²

● 1—Nora D. Volkow, et al., "Evaluating Dopamine Reward Pathway in ADHD," *JAMA* 302, no. 10 (2010): 1084–91.
2—P. Trifilieff, et al., "Increasing Dopamine D2 Receptor Expression in the Adult Nucleus Accumbens Enhances Motivation," *Molecular Psychiatry* 18, no. 9 (2013): 1025–33.

4. Declines in dopamine and dopamine sensitivity have been found in brains of those with a variety of addictions, including Internet addiction.¹ This kind of decline can happen rapidly with natural rewards.²

● 1—S. H. Kim et al., "Reduced Striatal Dopamine D2 Receptors in People with Internet Addiction," *NeuroReport* 22, no. 8 (2011): 407–11.
2—Paul M. Johnson and Paul Kenny, "Addiction-Like Reward Dysfunction and Compulsive Eating in Obese Rats: Role for Dopamine D2 Receptors," *Nature Neuroscience* 13, no. 5 (2010): 635–41; Eric Stice, Sonja Yokum, Kenneth Blum, and Cara Bohon, "Weight Gain Is Associated with Reduced Striatal Response to Palatable Food," *The Journal of Neuroscience* 30, no. 39 (2010): 13105–09.

5. Dopamine is an important part of where our motivation to pursue goals and build relationships comes from, so once the brain can't feel its effects as well, our interest in doing those things can start to slide.

● Depue, R. A. and P. F. Collins. "Neurobiology of the Structure of Personality: Dopamine, Facilitation of Incentive Motivation and Extraversion." *Behavior and Brain Science* 22, no. 3 (1999): 491–517.

6. Studies have found that frequency of porn use correlates with depression, anxiety, stress, and social problems.¹ It shouldn't be surprising that porn use is associated with depression given that porn has the ability to mess with the user's dopamine system² and research has found that dopamine signaling is a main factor in depression.³

● 1—Michael E. Levin, Jason Lillis, and Steven C. Hayes, "When is Online Pornography Viewing Problematic Among College Males? Examining the Moderating Role of Experiential Avoidance," *Sexual Addiction & Compulsivity* 19, no. 3 (2012): 168–80.
2—Bostwick and Bucci, "Internet Sex Addiction Treated with Naltrexone," *Mayo Clinic Proceedings* 83, no. 2 (2008): 226–230.
3—Andrew Myers, "Researchers Both Induce, Relieve Depression Symptoms in Mice By Stimulating Single Brain Region with Light," *Stanford School of Medicine*, December 12, 2012, <http://med.stanford.edu/ism/2012/december/deisseroth.html>.

7. Studies have found that porn use is correlated with having less sexual and relationship satisfaction and changed sexual tastes.

● E. M. Morgan, "Associations Between Young Adults' Use of Sexually Explicit Materials and Their Sexual Preferences, Behaviors, and Satisfaction," *Journal of Sex Research* 48, no. 6 (2011): 520–30.

8. Studies have found that porn use is correlated with lowered quality of life and poorer health.

● J. B. Weaver, et al. "Mental- and Physical-Health Indicators and Sexually Explicit Media Use Behavior by Adults," *Journal of Sexual Medicine* 8, no. 3 (2011): 764–72.

9. Studies have found that porn use is correlated with intimacy problems.

● Andreas G. Philaretou, Ahmed Y. Mahfouz, and Katherine R. Allen, "Use of Internet Pornography and Men's Well-Being," *Men's Studies Press* 4, no. 2 (2005): 149–69.

10. Researchers at Oxford University found that moderate to severe Internet addiction is associated with increased risk of harming oneself.

● Kat Daine, et al., "The Power of the Web: A Systematic Review of Studies of the Influence of the Internet on Self-Harm and Suicide in Young People," *PLoS One* (2013).

11. Researchers have shown that Internet addiction results in problems with memory, concentration, and impulse-control in some people.

● Matthias Brand, Kimberly S. Young, and Christian Laier, "Prefrontal Control and Internet Addiction: A Theoretical Model and Review of Neuropsychological and Neuroimaging Findings," *Frontiers in Human Neuroscience* 8, no. 375 (2014).

12. Researchers have also found that moderate porn use is correlated with shrunken grey matter in parts of the brain that oversee cognitive function.

● Simone Kühn and Jürgen Gallinat, "Brain Structure and Functional Connectivity Associated With Pornography Consumption: The Brain on Porn," *JAMA Psychiatry* (2014): 827–34.

13. A study looking at Internet addicts (pornography was a main online activity for the subjects) found that they suffered from "negative moods" when they went offline.

● Michela Romano, Lisa A. Osborne, Roberto Truzoli, and Phil Reed, "Differential Psychological Impact of Internet Exposure on Internet Addicts," *PLoS One* 8, no. 2 (2013); "Web Addicts' Withdrawal Symptoms Similar to Drug Users," *BBC News Wales*, June 19, 2013, <http://www.bbc.com/news/uk-wales-22966536>.

14. A longitudinal study found that "young people who are initially free of mental health problems but use the Internet pathologically" develop depression 2.5 times more than those who do not engage in that kind of Internet use.

● Lawrence T. Lam and Zi-Wen Peng, "Effect of Pathological Use of the Internet on Adolescent Mental Health: A Prospective Study," *Archives of Pediatrics and Adolescent Medicine* 164, no. 10 (2010): 901–06.

15. A study done in China looked at students, some of whom had never been exposed to the internet before entering university. They evaluated the students before internet use and then evaluated them a second time after a year had passed. Of the students that had never used the Internet before, 59 of them had developed an Internet addiction by the end of their first year. Researchers stated, “After their addiction, significantly higher scores were observed for dimensions on depression, anxiety, hostility, interpersonal sensitivity, and psychoticism, suggesting that these were outcomes of Internet addiction disorder. ... We can not find a solid pathological predictor for Internet addiction disorder. Internet addiction disorder may bring some pathological problems to the addicts in some ways.”

● Guangheng Dong, Qilin Lu, Hui Zhou and Xuan Zhao, “Precursor or Sequela: Pathological Disorders in People with Internet Addiction Disorder,” PLoS One (2011).

16. Researchers in Taiwan found that there is a correlation between teens attempting suicide and Internet addiction, even after they controlled for depression, self-esteem, family support, and demographics.

● I. H. Lin, et al., “The Association Between Suicidality and Internet Addiction and Activities in Taiwanese Adolescents,” *Comprehensive Psychiatry* 55, no. 3 (2014): 504–10.

17. In a study looking at 2,293 7th graders in China, researchers measured subjects for depression, hostility, social anxiety, and Internet addiction two times, a year apart. Those who developed Internet addiction displayed increases in depression and hostility compared to those who were not addicted. Those who had been Internet addicts but were no longer at the end of the year had decreased in depression, hostility, and social anxiety compared to those who were still addicted.

● C. H. Ko, et al., “The Exacerbation of Depression, Hostility, and Social Anxiety in the Course of Internet Addiction Among Adolescents: A Prospective Study,” *Comprehensive Psychiatry* (2014).

18. Researchers in Belgium looked at 14-year-old boys’ academic performance twice and compared the two scores. They found that “an increased use of Internet pornography decreased boys’ academic performance six months later.”

● Ine Beyers, Laura Vandebosch, and Steven Eggermont, “Early Adolescent Boys’ Exposure to Internet Pornography: Relationships to Pubertal Timing, Sensation Seeking, and Academic Performance,” *Journal of Early Adolescence* (2015).

19. Even moderate porn use is correlated with damage to parts of the brain involved with motivation and decision making.

● Simone Kühn and Jürgen Gallinat, “Brain Structure and Functional Connectivity Associated .

Brain

1.6

How Mirror Neurons Influence Brain Development

1. “Mirror neurons are the only brain cells we know of that seem specialized to code the actions of other people and also our own actions. They are obviously essential brain cells for social interactions. Without them, we would likely be blind to the actions, intentions and emotions of other people.”

● Marco Iacoboni, neuroscientist at the University of California at Los Angeles (as quoted in “The Mirror Neuron Revolution: Explaining What Makes Humans Social,” an interview edited by Jonah Lehrer, *Scientific American*, July 1, 2008.

2. “The way mirror neurons likely let us understand others is by providing some kind of inner imitation of the actions of other people, which in turn leads us to ‘simulate’ the intentions and emotions associated with those actions. When I see you smiling, my mirror neurons for smiling fire up, too, initiating a cascade of neural activity that evokes the feeling we typically associate with a smile. I don’t need to make any inference in what you are feeling, I experience immediately and effortlessly (in a milder form, of course) what you are experiencing.”

● Marco Iacoboni, neuroscientist at the University of California at Los Angeles (as quoted in “The Mirror Neuron Revolution: Explaining What Makes Humans Social,” an interview edited by Jonah Lehrer, *Scientific American*, July 1, 2008.

3. “Mirror neurons are just special types of premotor neurons, brain cells essential for planning and selecting actions.”

● Marco Iacoboni, neuroscientist at the University of California at Los Angeles (as quoted in “The Mirror Neuron Revolution: Explaining What Makes Humans Social,” an interview edited by Jonah Lehrer, *Scientific American*, July 1, 2008.

4. “I believe we should be more careful about what we watch. ... There is convincing behavioral evidence linking media violence with imitative violence. Mirror neurons provide a plausible neurobiological mechanism that explains why being exposed to media violence leads to imitative violence. What should we do about it? Although it is obviously hard to have a clear and definitive answer, it is important to openly discuss this issue and hopefully reach some kind of ‘societal agreement’ on how to limit media violence without limiting (too much) free speech.”

● Marco Iacoboni, neuroscientist at the University of California at Los Angeles (as quoted in “The Mirror Neuron Revolution: Explaining What Makes Humans Social,” an interview edited by Jonah Lehrer, *Scientific American*, July 1, 2008.

5. When researchers looked at brain activity while showing subjects pornographic film clips in a lab, they found that the level of activation the subjects’ mirror neuron systems “predicted the magnitude of the erectile response.”

● H. Mouras, S. Stoleru, V. Moullet, M. Pelegriani-Issac, R. Rouxel, B. Grandjean, D. Gluttron, and J. Bittoun, “Activation of Mirror-Neuron System by Erotic Video Clips Predicts Degree of Induced Erection: An fMRI Study,” *NeuroImage*, 42, no. 3 (2008): 1142–50.

6. When researchers monitored brain activity with fMRI scans while showing both heterosexual and homosexual subjects images of male and female sexually aroused genitals, they found that “the ventral premotor cortex which is a key structure for imitative (mirror neurons) and tool-

related (canonical neurons) actions showed a bilateral sexual preference-specific activation, suggesting that viewing sexually aroused genitals of the preferred sex triggers action representations of sexual behavior.” In other words, looking at porn activated the brain’s mirror neurons, making it think it was having sex.

● J. Ponseti, H. A. Bosinski, S. Wolff, M. Peller, O. Jansen, H. M. Mehdorn, C. Buchel, and H. R. Siebner, “A Functional Endophenotype for Sexual Orientation in Humans,” *NeuroImage* 33, no. 3 (2006): 825–33.

7. “Mirror neurons allow us to grasp the minds of others not through conceptual reasoning but through direct simulation. By feeling, not by thinking.”

● Dr. Giacomo Rizzolatti, as quoted in (“Sandra Blakeslee, “Cells That Read Minds,” *The New York Times*, January 10, 2006.

8. “[Mirror neurons] respond when someone kicks a ball, sees a ball being kicked, hears a ball being kicked and says or hears the word ‘kick.’”

● “Sandra Blakeslee, “Cells That Read Minds,” *The New York Times*, January 10, 2006.

9. “When you see me perform an action—such as picking up a baseball—you automatically simulate the action in your own brain. ... Circuits in your brain, which we do not yet entirely understand, inhibit you from moving while you simulate. ... But you understand my action because you have in your brain a template for that action based on your own movements. ... And if you see me choke up, in emotional distress from striking out at home plate, mirror neurons in your brain simulate my distress. You automatically have empathy for me. You know how I feel because you literally feel what I am feeling.”

● Dr. Marco Iacoboni, neuroscientist at the University of California, Los Angeles, as quoted in (“Sandra Blakeslee, “Cells That Read Minds,” *The New York Times*, January 10, 2006.

10. Mirror neurons can discern intentions and context.

● Giacomo Rizzolatti, Leonardo Fogassi, and Vittorio Gallese, “Mirrors in the Mind,” *Scientific American*, November 2006, 54–61.

11. “Observing another person experiencing emotion can trigger a cognitive elaboration of that sensory information, which ultimately results in a logical conclusion about what the other is feeling. It may also, however, result in direct mapping of that sensory information onto the motor structures that would produce the experience of that emotion in the observer. These two means of recognizing emotions are profoundly different: with the first, the observer deduces the emotion but does not feel it; via the second, recognition is firsthand because the mirror mechanism elicits the same emotional state in the observer. Thus, when people use the expression “I feel your pain” to indicate both comprehension and empathy, they may not realize just how literally true their statement could be.”

● Giacomo Rizzolatti, Leonardo Fogassi, and Vittorio Gallese, “Mirrors in the Mind,” *Scientific American*, November 2006, 54–61.

12. “Results indicate that populations of mirror neurons in the insula become active both when the test participants experience the emotion and when they see it expressed by others.”

● Giacomo Rizzolatti, Leonardo Fogassi, and Vittorio Gallese, “Mirrors in the Mind,” *Scientific American*, November 2006, 54–61.

13. “Recent evidence indicates, in fact, that the mirror mechanism also plays a role in the way we initially learn new skills.”

● Giacomo Rizzolatti, Leonardo Fogassi, and Vittorio Gallese, “Mirrors in the Mind,” *Scientific American*, November 2006, 54–61.

14. “[In] humans, ... imitation is a very important means by which we learn and transmit skills, language and culture.”

● Giacomo Rizzolatti, Leonardo Fogassi, and Vittorio Gallese, “Mirrors in the Mind,” *Scientific American*, November 2006, 54–61.

15. “Mirror neurons provide a powerful biological foundation for the evolution of culture. ... [Previously culture and biology were seen as fundamentally separate.] But now we see that mirror neurons absorb culture directly, with each generation teaching the next by social sharing, imitation and observation.”

● Patricia Greenfield, psychologist at UCLA as quoted in (“Sandra Blakeslee, “Cells That Read Minds,” *The New York Times*, January 10, 2006.

16. “Iacoboni and his group provided the first evidence that this might be the case when they used fMRI to observe human subjects who were watching and imitating finger movements. Both activities triggered the IFG, part of the mirror neuron system, in particular when the movement had a specific goal.”

● Giacomo Rizzolatti, Leonardo Fogassi, and Vittorio Gallese, “Mirrors in the Mind,” *Scientific American*, November 2006, 54–61.

17. Dr. Andrew Meltzoff has shown through his research that even infants imitate behaviors they see others perform. Children and adults do as well. “Human adults and children effortlessly learn new behaviors from watching others.”

● Andrew N. Meltzoff, “Imitation and Other Minds: The ‘Like Me’ Hypothesis,” in *Perspectives on Imitation: From Neuroscience to Social Science*, Vol. 2, eds. Susan Hurley and Nick Chater (2005: MIT Press Books).

18. “More than other primates, human children are hard-wired for imitation, [Dr. Meltzoff] said, their mirror neurons involved in observing what others do and practicing doing the same thing.”

● “Sandra Blakeslee, “Cells That Read Minds,” *The New York Times*, January 10, 2006.

19. “Professional athletes and coaches, who often use mental practice and imagery, have long exploited the brain’s mirror properties perhaps without knowing their biological basis, Dr. Iacoboni said. Observation directly improves muscle performance via mirror neurons.”

● “Sandra Blakeslee, “Cells That Read Minds,” *The New York Times*, January 10, 2006.

20. “In yet another realm, mirror neurons are powerfully activated by pornography, several scientists said. For example, when a man watches another man have sexual intercourse with a woman, the observer’s mirror neurons spring into action. The vicarious thrill of watching sex, it turns out, is not so vicarious after all.”

● “Sandra Blakeslee, “Cells That Read Minds,” *The New York Times*, January 10, 2006.

21. In a study published in 2006, researchers monitored eight 9- to 13-year-old children’s brain activity with fMRI imaging while they watched both violent and nonviolent television video sequences. They found that “both violent and nonviolent viewing activated regions involved in visual motion, visual object and scenes, and auditory listening. However, viewing TV violence selectively recruited a network of right hemisphere regions ... TV violence viewing transiently recruits a network of brain regions involved in the regulation of emotion, arousal and attention, episodic memory encoding and retrieval, and motor programming. This pattern of brain activation may explain the behavioral effects observed in many studies, especially the finding that children who are frequent viewers of TV violence are more likely to behave aggressively. Such extensive viewing may result in a large number of aggressive scripts stored in long-term memory in the posterior cingulate which facilitates rapid recall of aggressive scenes that serve as a guide for overt social behavior.”

● John P. Murray, Mario Liotti, Paul T. Ingmundson, Helen S. Mayberg, Yonglin Pu, Frank Zamarripa, Yijun Liu, Marty G. Woldorff, Jia-Hong Gao, and Peter T. Fox, “Children’s Brain Activations While Viewing Televised Violence Revealed by fMRI,” *Media Psychology* 8 (2006): 25–37.

22. Researchers have been studying the impact of violence in videos on children for nearly 50 years.

● John P. Murray, Mario Liotti, Paul T. Ingmundson, Helen S. Mayberg, Yonglin Pu, Frank Zamarripa, Yijun Liu, Marty G. Woldorff, Jia-Hong Gao, and Peter T. Fox, “Children’s Brain Activations While Viewing Televised Violence Revealed by fMRI,” *Media Psychology* 8 (2006): 25–37.

23. “Three main classes of behavioral effects that have been demonstrated over this half-century of research are increased aggression, desensitization, and fear.”

● John P. Murray, Mario Liotti, Paul T. Ingmundson, Helen S. Mayberg, Yonglin Pu, Frank Zamarripa, Yijun Liu, Marty G. Woldorff, Jia-Hong Gao, and Peter T. Fox, “Children’s Brain Activations While Viewing Televised Violence Revealed by fMRI,” *Media Psychology* 8 (2006): 25–37.

24. “Behavioral studies have demonstrated that TV violence, in combination with the associated fast action and excitement, holds attention to the screen and is emotionally arousing for children and adults.”

● John P. Murray, Mario Liotti, Paul T. Ingmundson, Helen S. Mayberg, Yonglin Pu, Frank Zamarripa, Yijun Liu, Marty G. Woldorff, Jia-Hong Gao, and Peter T. Fox, “Children’s Brain Activations While Viewing Televised Violence Revealed by fMRI,” *Media Psychology* 8 (2006): 25–37.

25. “Studies with children¹ have shown that children’s expression of emotional arousal or interest while viewing video violence was related to higher levels of aggression in subsequent play interactions.”

● John P. Murray, Mario Liotti, Paul T. Ingmundson, Helen S. Mayberg, Yonglin Pu, Frank Zamarripa, Yijun Liu, Marty G. Woldorff, Jia-Hong Gao, and Peter T. Fox, “Children’s Brain Activations While Viewing Televised Violence Revealed by fMRI,” *Media Psychology* 8 (2006): 25–37
1—Ekman, P., Liebert, R. M., Friesen, W., Harrison, R., Zlatchin, C., Malmstrom, E. J., et al. (1972). Facial expressions of emotion as predictors of subsequent aggression. (pp. 22–58). In G. A. Comstock, E. A. Rubinstein, & J. P. Murray (Eds.), *Television and social behavior, Vol. 5. Television’s effects: Further explorations*. Washington, DC: Government Printing Office.

26. “A key circuit proposed to be associated to increased propensity for impulsive aggression and violence includes bilateral projections between orbital and dorsolateral prefrontal cortex (PFC), amygdala, and anterior cingulate cortex.¹ Abnormalities in this limbic-cortical network are associated with failures of emotion regulation.² Prefrontal cortex has been associated with aggressive behavior by the finding that (a) patients with aggressive impulsive personality disorder have an absent response in PFC and anterior cingulate cortex (ACC) serotonin challenge with fenfluramine;³ (b) lesions in ventral prefrontal cortex result in released control of impulsive and aggressive behavior;⁴ and (c) neuroimaging evidence of hypoactivation of lateral and medial PFC, and hyperactivation of right hemisphere subcortical structures including amygdala, hippocampus, thalamus, and midbrain in individuals with impulsive aggressive behavior compared to age- and sex-matched controls.⁵ The amygdala is a phylogenetically old structure critically involved in learning the association between stimuli and primary punishers and rewards.”

● Rolls, E. T. (1999). *The brain and emotion*. New York: Oxford University Press.”
(John P. Murray, Mario Liotti, Paul T. Ingmundson, Helen S. Mayberg, Yonglin Pu, Frank Zamarripa, Yijun Liu, Marty G. Woldorff, Jia-Hong Gao, and Peter T. Fox, “Children’s Brain Activations While Viewing Televised Violence Revealed by fMRI,” *Media Psychology* 8 (2006): 25–37.

1—Davidson, R. J., Putnam, K. M., & Larson, C. L. (2000). Dysfunction in the neural circuitry of emotion regulation: A possible prelude to violence. *Science*, 28, 591–594.

2—Davidson, R. J., Putnam, K. M., & Larson, C. L. (2000). Dysfunction in the neural circuitry of emotion regulation: A possible prelude to violence. *Science*, 28, 591–594; Liotti, M., Mayberg, H. S., Brannan, S. K., McGinnis, S., Jerabek, P., & Fox, P. T. (2000). Differential limbic-cortical correlates of sadness and anxiety in healthy subjects: Implications for affective disorders. *Biological Psychiatry*, 48(1), 30–42; Mayberg, H. S., Liotti, M., Brannan, K., McGinnis, S., Mahurin, R. K., Jerabek, P. A., et al. (1999). Reciprocal limbic-cortical function and negative mood: Converging PET findings in depression and normal sadness. *American Journal of Psychiatry*, 156, 675–682.

3—Siever, L. J., Buchsbaum, M. S., New, A. S., Spiegel-Cohen, J., Wei, T., Hazlett, E. A., et al. d,l-fenfluramine response in impulsive personality disorder assessed with 18-F fluorodeoxyglucose positron emission tomography. *Neuropsychopharmacology*, 20, no. 5 (1999): 413–423; Volkow et al., 2000.

4—Davidson, R. J., Putnam, K. M., & Larson, C. L. (2000). Dysfunction in the neural circuitry of emotion regulation: A possible prelude to violence. *Science*, 28, 591–594.

5—Raine, A., Buchsbaum, M., & LaCasse, L. (1997). Brain abnormalities in murderers indicated by positron emission tomography. *Biological Psychiatry*, 42(6), 495–508; Raine, A., Meloy, J. R., Bihle, S., Stoddard, J., LaCasse, L., &

Buchsbaum, M. S. (1998). Reduced prefrontal and increased subcortical brain functioning assessed using positron emission tomography in predatory and affective murderers. *Behavioral Science and Law*, 6(3), 319–332.

27. “These findings suggest greater memory encoding during TV violence, although recall or recognition for the details of the videoclips were not performed in this study. Activation in the right dorsolateral prefrontal cortex and inferior parietal cortex are consistent with the role of these regions in the control of externally-directed attention and vigilance/alertness.”

● John P. Murray, Mario Liotti, Paul T. Ingmundson, Helen S. Mayberg, Yonglin Pu, Frank Zamarripa, Yijun Liu, Marty G. Woldorff, Jia-Hong Gao, and Peter T. Fox, “Children’s Brain Activations While Viewing Televised Violence Revealed by fMRI,” *Media Psychology* 8 (2006): 25–37.

28. “Heart rate significantly increased while viewing the violent relative to nonviolent videos, confirming that TV violence viewing was accompanied by more emotional arousal. ... Emotional arousal has been found to heighten sensitivity to environmental cues related to the motivational state induced by the provoking stimulus, particularly for stimuli with inherent significance for survival.”

● John P. Murray, Mario Liotti, Paul T. Ingmundson, Helen S. Mayberg, Yonglin Pu, Frank Zamarripa, Yijun Liu, Marty G. Woldorff, Jia-Hong Gao, and Peter T. Fox, “Children’s Brain Activations While Viewing Televised Violence Revealed by fMRI,” *Media Psychology* 8 (2006): 25–37.

29. “This pattern of results may suggest five conclusions: TV violence viewing in children (a) is emotionally arousing; (b) leads to activation of a network of regions involved in attention, arousal, and salience; (c) recruits a phylogenetically-old brain system involved in the detection of fear or threat in the environment; (d) is accompanied by activation of limbic and neocortical systems likely to be involved in the episodic encoding and retrieval of the environmental context associated with such threat; and (e) is accompanied by activation of premotor regions possibly involved in the programming of motor plans (fight or flight).”

● John P. Murray, Mario Liotti, Paul T. Ingmundson, Helen S. Mayberg, Yonglin Pu, Frank Zamarripa, Yijun Liu, Marty G. Woldorff, Jia-Hong Gao, and Peter T. Fox, “Children’s Brain Activations While Viewing Televised Violence Revealed by fMRI,” *Media Psychology* 8 (2006): 25–37.

30. “The relevance of these findings resides in the demonstration that though the child may not be aware of the threat posed by TV violence at a conscious level, and may even perceive it as interesting and arousing, a more primitive system within his or her brain (amygdala, pulvinar) may not discriminate between real violence and entertainment fictional violence, suggesting that TV violence may act at a preconscious level. Proof that this may be the case is provided by a recent study¹ showing that masked (not consciously seen) fearful faces activate the same right amygdala–pulvinar circuit present in our study.”

● John P. Murray, Mario Liotti, Paul T. Ingmundson, Helen S. Mayberg, Yonglin Pu, Frank Zamarripa, Yijun Liu, Marty G. Woldorff, Jia-Hong Gao, and Peter T. Fox, “Children’s Brain Activations While Viewing Televised Violence Revealed by fMRI,” *Media Psychology* 8 (2006): 25–37
1—Morris, J. S., Ohman, A., & Dolan, R. J. (1999). A subcortical pathway to the right amygdala mediating “unseen” fear. *Proceedings of the National Academy of Sciences USA*, 96, 1680–1685.

31. “The simple act of viewing TV violence appears to transiently activate a network of right lateralized regions that are hyperactive in the resting state of individuals with impulsive aggressive behavior.¹ Moreover, the strong activation of long-term memory systems during TV violence viewing (precuneus, posterior cingulate, hippocampus and parahippocampus, and amygdala) may suggest that the impact of TV violence viewing on brain function may extend in time beyond the simple act of viewing TV violence.”

● John P. Murray, Mario Liotti, Paul T. Ingmundson, Helen S. Mayberg, Yonglin Pu, Frank Zamarripa, Yijun Liu, Marty G. Woldorff, Jia-Hong Gao, and Peter T. Fox, “Children’s Brain Activations While Viewing Televised Violence Revealed by fMRI,” *Media Psychology* 8 (2006): 25–37

1—Raine, A., Buchsbaum, M., & LaCasse, L. (1997). Brain abnormalities in murderers indicated by positron emission tomography. *Biological Psychiatry*, 42(6), 495–508.

32. “One general conclusion from this study is the suggestion that the human brain does not distinguish between real life violence and so-called fantasy or entertainment violence.”

● John P. Murray, Mario Liotti, Paul T. Ingmundson, Helen S. Mayberg, Yonglin Pu, Frank Zamarripa, Yijun Liu, Marty G. Woldorff, Jia-Hong Gao, and Peter T. Fox, “Children’s Brain Activations While Viewing Televised Violence Revealed by fMRI,” *Media Psychology* 8 (2006): 25–37

33. “What are mirror neurons, and why are they so important to visual communication and learning? Well, to begin with, they are the reason happy people make others smile, and tense and anxious people make us nervous. They’re the reason yawning is contagious.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

34. “Mirror neurons in effect break down the barrier between ourselves and others: as the actions or expressions of others resonate within us, we empathize and recognize the other as us.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

35. “As the researchers were monitoring motor neurons in Macaque monkeys, they found that not only did the monkey’s motor neurons light up when the monkey moved, but also when the monkey saw a student come into the lab eating an ice cream cone. As the monkey watched the event, researchers saw his brain respond in exactly the same way it would if he were eating the cone. Mirror neurons in area F5 of the Macaque inferior frontal cortex fired both when the monkey grasped the food and when it observed the experimenter grasping the food.”

● Rizzolatti, G., Fogassi, L., & Gallese, V. (2001). Neurophysiological mechanisms underlying the understanding and imitation of action. *Nature Neuroscience Reviews*, 2, 661–670; Gallese, V., Fadiga, L., Fogassi, L., & Rizzolatti, G. (2002). Action representation and the inferior parietal lobule. In W. Prinz & B. Hommel (Eds.), *Common mechanisms in perception and action: Attention and performance*, Vol. XIX. (pp. 247–266). Oxford: Oxford University Press.; Blakeslee, S. (2006). “Cells That Read Minds.” *The New York Times*, 1/10/06.” (Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

36. “In people, mirror neurons have been found to be more flexible and more highly evolved.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

37. “This ability for intentional attunement not only allows for sophisticated social communication between individuals¹ but also provides a neural platform for establishing language,² altruism³ and advancing culture as well.”⁴

● (Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

1— Goleman, D. (2006). *Social intelligence*. New York: Bantam; Ramachandran, V. S. (2000). Mirror neurons and Imitation learning as “the driving force behind the great leap forward” in human evolution. *Edge*, 69, June 29. www.edge.org/3rdculture/ramachandran/ramachandranindex.html. Last accessed April 6, 2009.

2— Ramachandran, V. S. (2000). Mirror neurons and Imitation learning as “the driving force behind the great leap forward” in human evolution. *Edge*, 69, June 29.

3— Warneken, F., & Tomasello, M. (2006). Altruistic helping in human infants and young chimpanzees. *Science*, 311, 1301–1303.

4— Goldschmidt, W. (1999). “Causation to motivation: the margin between biology and culture.” www.sscnet.ucla.edu/anthro/bec/papers/Goldschmidt, April 12. Last accessed April 6, 2009; de Waal, F.B.M. (1996). *Good natured: The origins of right and wrong in primates and other animals*. Cambridge, MA: Harvard University Press; de Waal, F.B.M. (2006). *Primates and philosophers: How morality evolved*. Princeton, NJ: Princeton University Press; Decety, J., & Lamm, C. (2006). Human empathy through the lens of social neuroscience. *The Scientific World Journal*, 6, September, 1–25.”

38. “Our brain tracks experience through chemical codes, and after every interaction, we update a built-in neurochemical profile of the world.”

● Niehof, D. (1999). *The biology of violence*. New York: Free Press; Niehof, D., & Rhodes, R. (2000). Ideas about the development of violent behavior. *Science*, 10, 1093–1095.” (Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

39. “At the heart of the concept of culture lies the necessity of registering what others are doing and subsequently imitating without fully understanding why. Through mirror neurons we absorb culture without explicitly being taught it. We are hardwired for imitation.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

40. “There are different types and layers of mirror neurons in humans. The top area activates motor empathy; the middle, context recognition; and the bottom, recognition of intention. These processes, which are automatic and outside of our conscious control, are what allow for empathy, understanding, and culture-building.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

41. “Mirror neurons begin working at birth. Stick your tongue out at a newborn and he’ll stick his tongue out, too. Humans are hardwired for imitation, and this capability becomes the basis for language acquisition.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

42. “An increase in the sophistication of the mirror neuron system not only expanded our propensity to imitate, but also expanded our visual learning potential in general—providing the basis for culture as a stabilizing source of identity and learning. The social ripple effect of mirror neurons explain our ability to learn through seeing; how culture is established by imitation through observation; and how cultural forces bias normative behavior, allowing for the rapid dissemination of ideas.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

43. “Of course the idea of using images to titillate the mirror neurons and sneak under the conscious rational radar of potential consumers is nothing new. The great advertising genius Leo Burnett, who created the Marlboro man, the Jolly Green Giant, and Tony the Tiger expressed it this way: ‘The most powerful advertising ideas are non-verbal and take the form of statements with visual qualities made by archetypes. Their true meanings lie too deep for words ... A strong man on horseback, a benevolent giant, a playful tiger. The richest source of these archetypes is to be found at the roots of our culture—in history, mythology, and folklore.’ Burnett understood the power of the visual image and advised his creative teams to mine the archetypal power within the image to appeal to the deepest part of the consumer psyche.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.
1—Broadbent, S. (Ed.). (1984). *The Leo Burnett book of advertising*. London: Hutchinson.

44. “UCLA neurologist Marco Iacoboni, a leader in mirror neuron research, was the first to tackle this deepest part of the human psyche using fMRI to scan the mirror neurons in the brain to determine the impact of advertisements. During the Super Bowl in 2006, Iacoboni’s volunteers viewed Super Bowl ads through special goggles equipped with high resolution LCD monitors. ... Iacoboni’s research also revealed discrepancies between what people say they feel and what they really respond to. A Burger King Whopperettes ad featuring women as condiments piled onto a burger consciously offended the sensibilities of many women, but fMRI showed a deep empathic response. Iacoboni’s subject came out of the scanner after the ad and said she didn’t like commercials in which females are treated as objects of sexual desire. ‘But guess what?’ Iacoboni comments, ‘Her mirror neural regions were firing out like crazy when she saw those.’ Conversely, the same subject did not show a response to Dove’s campaign for self-esteem, even though she said she loved it.¹ Although it is possible that her contradictory responses reveal that women do respond better to sexist commercials, the results probably better illustrate just how deep cultural conditioning goes in the mirror neuron system.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.
1—Wittlin, M. (2006). “Instant study hints advertisers should objectify women.” *Seed Magazine* (2/07/2006). http://seedmagazine.com/news/2006/02/instant_study_hints_advertiser.php. Last accessed April 6, 2009.

45. “Because mirror neurons let us grasp the minds of others through direct simulation rather than conceptual reasoning, video games are the perfect medium for teaching through feeling, not thinking.”

● Iacoboni, M. (2007). “Neuroscience will change society.” *EDGE, The World Question Center*. <http://www.edge.org/q2007>, p. 8. Last accessed April 6, 2009.
Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

46. “Although most video gamers will insist that they know the difference between a video game and reality, they would be more neurologically correct to say that they consciously register the difference. On the unconscious level, the brain registers everything that it sees as reality. Since every thought and action is emotionally primed automatically in the brain, video games become one of the best methods of teaching through direct simulation. It seems that ‘We have in our brains some mechanism that may induce some form of immediate behavior, and so whenever you expose kids to any form of violence through media, through video games or through films, then you put these kids at risk of expressing violence with their own acts because they’re going to imitate that.’”

● Iacoboni, M. (2007). “Neuroscience will change society.” *EDGE, The World Question Center*. <http://www.edge.org/q2007>, p. 8. Last accessed April 6, 2009.
Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

47. “In a combination of factors, however, it is likely that mirror neurons play a key role in lack of empathic emotional, interpersonal cognition. Susan Hurley explains that like other social animals we learn through observed body movements and we emulate actions that lead to attractive goals others have obtained, and in this tendency, violence and aggression have no special exemption. Observing aggression, therefore, should tend to prime similar behavior, which may or may not be inhibited. When the results of observed aggression are attractive, emulation of goals should be expected.”

● Hurley, S. (2004). Imitation, media violence, and freedom of speech. *Philosophical Studies*, 117, 165–218.
Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

48. “The power of imitative learning is stronger in humans than in other animals, even our nearest ancestors.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

49. “Humans will imitate others’ motions even when they know it is not the most efficient means to accomplish a task.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

50. “Our tendency to model others’ behavior is strengthened both by repetitive observation and internalized visualization.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

51. “While our tendency to imitate remains strong, the empathy enabled by mirror neurons can easily fail, leaving us to see others not as ourselves but as merely an instrumental ‘other.’”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

52. “Injury to the brain, emotional abuse, or brain dysfunction due to genetic or developmental defect—all these can cause problems with the mirror neuron system and allow for a predisposition to imitate observed violence.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

53. “One of the key variables in determining who imitates violence and who does not is the presence of super mirrors.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

54. “One ingenious experiment by Victoria Horner and Andrew Whiten of the University of St. Andrews in Scotland shows the first phenomenon. The researchers prepared two boxes that contained a reward in a bottom chamber. They showed both monkeys and children a ritualistic way of getting the prize, by first tapping and inserting a stick into the top unconnected chamber, and then inserting the same stick through an opening in the bottom chamber. When chimps could not see inside the box, they followed the ritual to retrieve the reward. The children did the same. But when a clear box was substituted, and they could see inside it, the chimps bypassed the useless steps in the ritual and went right for the reward. The children didn’t. Instead they overimitated, following the ritual for its own sake, and faithfully repeated what they were shown—even though they could easily recognize it was not at all efficient. The advantage of this phenomenon lies in its enabling our brains to absorb culture directly.”

● Horner, V., & Whiten, A. (2005). Causal knowledge and imitation/emulation switching in chimpanzees (*Pan troglodytes*) and children (*homo sapiens*). *Animal Cognition*, 8, 164–181; Horner, V., & Whiten, A. (2007). Learning from others’ mistakes? Limits on understanding of a trap-tube task by young chimpanzees and children. *Journal of Comparative Psychology*, 121, 12–21.
Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

55. “Our mirror neurons provide for the rapid dissemination of knowledge and culture among those similar to us.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

56. “According to Horner, ‘imitation and copying accurately is a huge part of our development as humans. It’s how we learn language. It’s how we learn to interact with objects and acquire cultural behaviors. ... It’s a default for us to copy accurately. ... Humans focus on repeating process, something that has served us well in building a complex society.’”

● Horner, V., & Whiten, A. (2005). Causal knowledge and imitation/emulation switching in chimpanzees (*Pan troglodytes*) and children (*homo sapiens*). *Animal Cognition*, 8, 164–181; Horner, V., & Whiten, A. (2007). Learning from others’ mistakes? Limits on understanding of a trap-tube task by young chimpanzees and children. *Journal of Comparative Psychology*, 121, 12–21.
Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

57. “By means of mirroring and intentional attunement, ‘others’ become persons rather than simply illustrations modeling behavior. A direct experiential link is created between the observer and observed, according to pioneering neurologist Vittorio Gallese, which ‘enables the observer to use his/her own resources to experientially penetrate the world of the other by means of a direct, automatic and unconscious process of simulation. ... The other’s emotion is constituted, experienced and therefore directly understood by means of an embodied simulation producing a shared body state.’ The embodied simulation enabled by mirror neurons acts as an emotional scaffold upon which all further conceptual reasoning is based.”

● Gallese V. (2004b). Intentional attunement. The mirror neuron system and its role in interpersonal relations. <http://www.interdisciplines.org/mirror/papers/1>. Last accessed April 6, 2009.
Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

58. “Who and how much we internalize from what we see involves a variety of factors ranging from personal motivation to cultural differences, from dysfunctional mirror systems to prior experience and skill development. Other major factors include practice and expertise, cultural bias, and gender.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

59. “These newer studies also tie in with older studies in modeling theory in which it is asserted that watching excellent form not only educates as but also increases the speed of learning. Pioneered by Karl Pribram at Stanford, modeling theory took off in its applied form in the 1980s through the work of Steve DeVore who used it to teach athletic skills through what he called ‘Sybervision.’ In one illustrative event, DeVore, not a bowler himself, watched professional bowlers on television and then went to a bowling alley where he threw nine strikes in a row.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

60. “Neural disorders and frontal lobe damage can also cause the same level of disconnect between ourselves and others as like ourselves, causing a lack of empathy and therefore socially appropriate action.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

61. “For autistics, the mirror neuron system seems to be broken, while for those who imitate media violence, either the socializing pull toward empathy is lacking in development, or the subculture has created an overriding value that blocks empathy.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

62. “Because social emotions such as guilt, shame, pride, and embarrassment are dependent upon active mirror neuron systems, we can expect that damaged or inhibited mirror systems will result in either their absence or inhibition.”

● Wicker, B., Keysers, C., Plailly, J., Royet, J., Gallese, V., & Rizzolatti, G. (2003). Both of us disgusted in my insula. The common neural basis of seeing and feeling disgust. *Neuron*, 40, 655–664; Keysers, C., Wicker, B., Gazzola, V., Anton, J., Fogassi, L., & Gallese, V. (2004). A touching sight. SII/PV activation during the observation and experience of touch. *Neuron*, 42, 335–346.
Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

63. “Because of individual exposure and cultural values, we can and do build up cognitive resistance to our empathetic neurophysiological responses.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

64. “Differences in cultures and subcultures, as well as individual experiences, cause the system to work differently in different people, although it is not yet fully clear how they affect behavioral patterns.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

65. “Katharine Ramsland (2008) puts it succinctly: ‘It’s safe to say that in cultures that tolerate violent images and even encourage them, there will likely be a greater propensity among young people and the mentally disturbed to be influenced toward acting out what they see. If their options for dealing with conflict are limited to violence as a resolution, they will generally turn to violence themselves.’”

● Ramsland, K. (2008). “Movies made me murder.” http://www.trutv.com/library/crime/criminal_mind/psychology/movies_made_me_kill. Last accessed April 6, 2009
Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

66. “Such research, backed by more than 50 years of behavioral data, support the idea that media violence induces violent behavior in observers. Yet we still cling to the idea that we are always in conscious control of how our minds work, even though this assumption has been disproven by neurological research.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

67. “As neuroscientist Antonio Damasio explains, we are not thinking beings who feel, but feeling beings who also think.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

68. “Unconscious learning through the emotional system is the basis of all perception, with our conscious minds not only informed after the fact of emotional processing, but also without access to the emotional processes which form our thoughts and attitudes.”

● Damasio, A. (1994). *Descartes’ error: Emotion, reason, and the human brain*. New York: Penguin; Damasio, A. (2000). *The feeling of what happens: Body and emotion in the making of consciousness*. New York: Harvest Books.
Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

69. “Mirror neurons, are not rational, free-acting agents in the world. Mirror neurons in our brains produce automatic imitative influences of which we are often unaware and that limit our autonomy by means of powerful social influences.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

70. “The likelihood of our imitating the violence we see may depend on the individual strength or weakness of the action governing super mirrors which mediate cognitive resistance to imitation as well as on the adequate functioning of the neural systems and the culture we live in. There can be little doubt that the overriding cultural value we exist in is antithetic to empathy.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

71. “Because cultural influence and mirror functions lie outside of our conscious control, the only real control we have over how we respond to what we see may lie simply in carefully choosing what we see and in attempting to build a visual world that prizes empathy instead of aggression.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

72. “We ultimately become what we see.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

73. “Our brains are capable of mirroring the deepest aspects of the minds of others at the fine-grained level of a single brain cell,” Iacoboni hypothesizes.”

● Ann Marie Barry, “Mirror Neurons: How We Become What We See,” *Visual Communication Quarterly* 16, no. 2 (2009): 79–89.

74. “Researchers looking at how mirror neurons are activated with pornography use reported that ‘the mirror-neuron system prompts the observers to resonate with the motivational state of other individuals appearing in visual depictions of sexual interactions.’”

● H. Mouras, S. Stoleru, V. Moulher, M. Pelegriani-Issac, R. Rouxel, B. Grandjean, D. Gluttrou, and J. Bittoun, “Activation of mirror-neuron system by erotic video clips predicts degree of induced erection: an fMRI study,” *NeuroImage* 42, no. 3 (2008): 1142–50.

Brain

1.7

How Pornography Affects Behavior

1. Rather than focusing on whether the addictive behavior involves injecting drugs or viewing highly arousing sexual images, an increased knowledge of cellular mechanisms allows us to understand that addiction involves and alters biology at the synaptic level, which then affects subsequent behavior.

● Donald L. Hilton Jr., MD, "Pornography addiction—a supranormal stimulus considered in the context of neuroplasticity," *Socioaffective Neuroscience & Psychology* 2013, 3: 20767, 3.

2. "The excessive induction of DeltaFosB seen under pathological conditions (e.g. chronic exposure to a drug of abuse) would lead to excessive sensitization of the nucleus accumbens circuitry and ultimately contribute to pathological behaviors (e.g. compulsive drug seeking and taking) associated with drug addiction."

● Nestler, E. J. (2008). Transcriptional mechanisms of addiction: Role of DeltaFosB. *Philosophical Transactions of the Royal Society*, 363, 3245-3256.

3. "The human libido is not a hardwired, invariable biological urge but can be curiously fickle, easily altered by our psychology and the history of our sexual encounters. And our libido can also be finicky."

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

4. "An MSNBC.com survey of viewers in 2001 found that 80% felt they were spending so much time on pornographic sites that they were putting their relationships or jobs at risk."

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

5. "Behavior that is rewarded is likely to be repeated while behavior that is punished is less likely to be repeated. Sexual arousal and orgasm are extremely rewarding experiences. We may be innately predisposed to enjoy the rewards of sexual arousal and orgasm, but we learn how and when and with whom we can experience those pleasures. If a novel sexual behavior produces an orgasm, we are more likely to repeat that behavior and add it to our sexual template and repertoire."

● Mary Anne Layden, "Pornography and Violence: A New look at the Research," in James R. Stoner, Jr. and Donna M. Hughes, eds. *The Social Costs of Pornography: A Collection of Papers*. Princeton, NJ: Witherspoon Institute (2010), 58.

6. "Pornography can offer all these elements—images, arousal, reinforcement, the example of others—so it is a potent teacher of both beliefs and behaviors. It provides the ideal conditions for learning."

● Mary Anne Layden, "Pornography and Violence: A New look at the Research," in James R. Stoner, Jr. and Donna M. Hughes, eds. *The Social Costs of Pornography: A Collection of Papers*. Princeton, NJ: Witherspoon Institute (2010), 58.

7. "Those who were exposed to pornography were more likely to believe that unusual and pathological sexual behaviors were more common and more normal. Their belief in how often others engaged in sex with animals, sex in groups, and sex with violence was double in those exposed to pornography when compared with those who were not."

● Zillmann and Bryant, "Effects of Massive Exposure to Pornography," in *Pornography and Sexual Aggression*, Eds. Neil M Malamuth and Edward Donnerstein (New York: Academic Press, 1984).

8. "For males, greater amounts of pornography use was associated with increased acceptance of sex outside of marriage, increased acceptance of sex before marriage, and less child-centeredness during marriage."

● Jason S. Carroll et al., "Generation XXX: Pornography Acceptance and Use Among Emerging Adults," *Journal of Adolescent Research* 23, no. 1 (2008): 6-30.

9. "For males, increased pornography use is correlated with increased alcohol use and more binge-drinking."

● Jason S. Carroll et al., "Generation XXX: Pornography Acceptance and Use Among Emerging Adults," *Journal of Adolescent Research* 23, no. 1 (2008): 6-30.

10. "Pornography makes sex with as many strangers as possible appear normal and desirable, and shows no negative consequences; those who use pornography have more sex partners than do other people."

● Jason S. Carroll et al., "Generation XXX: Pornography Acceptance and Use Among Emerging Adults," *Journal of Adolescent Research* 23, no. 1 (2008): 6-30.

11. In a study of 103 men in London who described their use of prostitutes, "one man explained the impact of pornography on his sexual behavior generally, 'The more I've watched pornography, the more specific my wants have become. Watching pornography has also shaped my sexual desires. I watch pornography and I discover, 'hey, that really turns me on' and I want to recreate what I've seen in porn.'"

● Melissa Farley, Julie Bindel, and Jacqueline M. Golding, "Men Who Buy Sex: Who They Buy and What They Know" (London: Eaves, 2009, 22).

12. "Pornography leaves men desensitized to both outrage and to excitement, leading to an overall diminishment of feeling and eventually to dissatisfaction with the emotional tugs of everyday life."

● Paul, Pamela (2007-04-01). *Pornified: How Pornography Is Transforming Our Lives, Our Relationships, and Our Families* (p. 90). Henry Holt and Co.

13. "Chronic substance use results in impaired reward-related learning, to the extent that the addict may believe that the hedonic properties of the substance far exceed any other goals, and thereby devote their lives to attaining the substance."

● Angres, D. H., & Bettinardi-Angres, K. (2008). The disease of addiction: Origins, treatment, and recovery. *Disease-a-Month*, 54, 696-721.

14. “Addicts are encased in a system of acquisition of a drug and the consistent reward pattern of ingestion, with decreasing awareness of other rewarding stimuli or the need to invest energies in other rewarding activities.”

● Angres, D. H., & Bettinardi-Angres, K. (2008). The disease of addiction: Origins, treatment, and recovery. *Disease-a-Month*, 54, 696-721.

15. “A significant postulate of this commentary is that all addictions create, in addition to chemical changes in the brain, anatomical and pathological changes which result in various manifestations of cerebral dysfunction collectively labeled hypofrontal syndromes. In these syndromes, the underlying defect, reduced to its simplest description, is damage to the “braking system” of the brain.”

● Hilton, D. L., & Watts, C. (2011). Pornography addiction: A neuroscience perspective. *Surgical Neurology International*, 2, 19.

16. Studies of addicts show reduced cellular activity in the orbitofrontal cortex, a brain area...[relied upon]...to make strategic, rather than impulsive, decisions. *Patients with traumatic injuries to this area of the brain display problems—aggressiveness, poor judgment of future consequences, inability to inhibit inappropriate responses that are similar to those observed in substance abusers.*”

● Fowler JL, Volkow ND, Kassed CA. Imaging the addicted human brain. *Sci Pract Perspect* 2007;3:4-16.)

17. “Additionally, our findings show that chronic exposure to stimuli that induce DeltaFosB in the NAc can increase consumption of other natural rewards.”

● Wallace, D. L., Vialou, V., Rios, L., Carle-Florence, T. L., Chakravarty, S., Arvind Kumar, A., et al. (2008). The influence of DeltaFosB in the nucleus accumbens on natural reward-related behavior. *Journal of Neuroscience*, 28(4), 10272-19277.

18. “Repeated activation of the mesolimbic dopamine system results in persistent behavioral alterations accompanied by a pattern of neural plasticity in the nucleus accumbens (NAc).”

● Hedges, V. L., Chakravarty, S., Nestler, E. J., & Meisel, R. L. (2009). Delta FosB overexpression in the nucleus accumbens enhances sexual reward in female Syrian hamsters. *Genes Brain and Behavior*, 8(4), 442-449.

19. “We have shown that female Syrian hamsters, given sexual experience, exhibit several behavioral alterations including increased sexual efficiency with naïve male hamsters, sexual reward and enhanced responsiveness to psychomotor stimulants (e.g. amphetamine). We recently demonstrated that sexual experience increased the levels of Δ FosB in the NAc of female Syrian hamsters.”

● Donald L. Hilton Jr., MD, “Pornography addiction—a supranormal stimulus considered in the context of neuroplasticity,” *Socioaffective Neuroscience & Psychology* 2013, 3: 20767, 5.

Brain

1.8

The Role of DeltaFosB in Brain Pathways

1. DeltaFosB is the molecular switch that initiates many addiction-related brain changes.

● Eric J. Nestler, Michel Barrot, and David W. Self, "DeltaFosB: A Sustained molecular Switch for Addiction," PNAS 98, no. 2 (2001): 11042–46.

2. DeltaFosB builds up in proportion to the amount of dopamine our brain releases when we chronically use natural rewards.

● Deanna L. Wallace, et al., "The Influence of DeltaFosB in the Nucleus Accumbens on Natural Reward-Related Behavior," The Journal of Neuroscience 28, no. 41 (2008): 10272–77.

3. DeltaFosB strengthens nerve connections. As nerve cells fire together and wire together the number of connections grows; there are also chemical changes that happen to help communication between these cells. As a result, the pathways can become large, with lots of strong connections tying back to the reward center. As a result, whenever something triggers a neuron in that pathway (for example, when the person hears the front door shut, something their brain has learned to associate with being alone and using porn) all those connections can activate and slam the reward center, pumping out a bunch of dopamine and making the person experience intense cravings for porn.

● Gary Wilson, Your Brain on Porn

4. DeltaFosB turns on a specific set of genes that both physically and chemically alter the brain's reward center.

● Eric J. Nestler, "Transcriptional Mechanisms of Addiction: Role of Δ FosB," Philosophical Transactions of the Royal Society B 363, no. 1507 (2008): 3245–55.

5. "DeltaFosB is a critical molecular mediator for the long-term neural and behavioral plasticity induced by sexual experience."

● Kyle K. Pitchers, Karla S. Frohmader, Vincent Vialou, Ezekiel Mouzon, Eric J. Nestler, Michael N. Lehman, and Lique M. Coolen, "DeltaFosB in the Nucleus Accumbens is critical for Reinforcing Effects of Sexual Reward," Genes, Brain and Behavior 9, no. 7 (2010): 831–40.

6. The more someone chronically goes back to something that triggers the reward center, the more DeltaFosB builds up. The more DeltaFosB builds up, the more the user craves more of the thing they've been over-consuming.

● Donald L. Hilton, "Pornography Addiction — A Supranormal Stimulus Considered in the Context of Neuroplasticity," Socioaffective Neuroscience & Psychology 3 (2013).

7. "The excessive induction of DeltaFosB seen under pathological conditions (e.g. chronic exposure to a drug of abuse) would lead to excessive sensitization of the nucleus accumbens circuitry and ultimately contribute to pathological behaviors (e.g. compulsive drug seeking and taking) associated with drug addiction."

● Nestler, E. J. (2008). Transcriptional mechanisms of addiction: Role of DeltaFosB. Philosophical Transactions of the Royal Society, 363, 3245–3256.

8. Adolescent animals show much greater induction of DeltaFosB compared with older animals, consistent with their greater vulnerability for addiction.

● Ehrlich, M. E., Sommer, J., Canas, E. & Unterwald, E. M. 2002 Periadolescent mice show enhanced DeltaFosB upregulation in response to cocaine and amphetamine. J. Neurosci. 22, 9155–9159; as quoted in Nestler, E. J. (2008). Transcriptional mechanisms of addiction: Role of DeltaFosB. Philosophical Transactions of the Royal Society, 363, 3245–3256.

9. "We demonstrate that overexpression of DeltaFosB in the NAc increases sucrose intake and promotes aspects of sexual behavior. In addition, we show that animals with previous sexual experience, which exhibit increased DeltaFosB levels, also show an increase in sucrose consumption. This work suggests that DeltaFosB is not only induced in the NAc by drugs of abuse, but also by natural rewarding stimuli. Additionally, our findings show that chronic exposure to stimuli that induce DeltaFosB in the NAc can increase consumption of other natural rewards."

● Wallace, D. L., Vialou, V., Rios, L., Carle-Florence, T. L., Chakravarty, S., Arvind Kumar, A., et al. (2008). The influence of DeltaFosB in the nucleus accumbens on natural reward-related behavior. Journal of Neuroscience, 28(4), 10272–10277.

10. Teen brains produce higher levels of DeltaFosB.

● Eric J. Nestler, "Transcriptional Mechanisms of Addiction: Role of DeltaFosB," Philosophical Transactions of the Royal Society B 363, no. 1507 (2008): 3245–55.

11. DeltaFosB guides us toward high calorie foods and sexual opportunities.

● "The Influence of DeltaFosB in the Nucleus Accumbens on Natural Reward Related Behavior" (2008).

Brain

1.9

How Pornography Changes the Brain

1. Sexual tastes are molded by an individual's experiences and their culture. These tastes are "acquired and then wired into the brain. ... We are unable to distinguish our 'second nature' from our 'original nature' because our neuroplastic brains, once rewired, develop a new nature, every bit as biological as our original."

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

2. "Softcore pornography's influence is now most profound because now that it is no longer hidden, it influences young people with little sexual experience and especially plastic minds, in the process of forming their sexual tastes and desires. Yet the plastic influence of pornography on adults can also be profound and those who use it have no sense of the extent to which their brains are reshaped by it."

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

3. "Porn viewers develop new maps in their brains, based on the photos and videos they see. Because it is a use-it-or-lose-it brain, when we develop a map area, we long to keep it activated. Just as our muscles become impatient for exercise if we've been sitting all day, so too do our senses hunger to be stimulated. The men at their computers looking at porn were uncannily like the rats in the cages of the NIH, pressing the bar to get a shot of dopamine or its equivalent. Though they didn't know it, they had been seduced into pornographic training sessions that met all the conditions required for plastic change of brain maps. Since neurons that fire together wire together, these men got massive amounts of practice wiring these images into the pleasure centers of the brain, with the rapt attention necessary for plastic change. They imagined these images when away from their computers, or while having sex with their girlfriends, reinforcing them. Each time they felt sexual excitement and had an orgasm when they masturbated, a 'spritz of dopamine,' the reward neurotransmitter, consolidated the connections made in the brain during the sessions."

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

4. "Because our brains are experiencing a surge of dopamine, which consolidates plastic change, any pleasurable experiences and associations we have in [this state] are thus wired into our brains."

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

5. "Rather than focusing on whether the addictive behavior involves injecting drugs or viewing highly arousing sexual images, an increased knowledge of cellular mechanisms allows us to understand that addiction involves and alters biology at the synaptic level, which then affects subsequent behavior."

● Donald L. Hilton Jr., MD, "Pornography addiction—a supranormal stimulus considered in the context of neuroplasticity," *Socioaffective Neuroscience & Psychology* 2013, 3: 20767, 3.

6. "Supraphysiologic levels of DeltaFosB appear to portend hyperconsumptive states of natural addiction (Nestler, 2008). That DeltaFosB is not only a marker but also a facilitator of hyperconsumptive behavior (as a neuroplasticity enabler) has been well demonstrated. Two closely related mechanisms have been used to genetically manipulate DeltaFosB independent of behavioral variables. ... These genetically altered animals exhibit addictive hyperconsumptive behavior involving food (Olausson et al., 2006), wheel running (Werme et al., 2002), and sex (Wallace et al., 2008). For instance, when overexpression of DeltaFosB was imposed through these viral vectors in laboratory animals, they exhibited a supraphysiologic enhancement of sexual performance (Hedges, Chakravarty, Nestler, Meisel, 2009; Wallace et al., 2008). Conversely, repression of DeltaFosB decreases performance (Pitchers et al., 2010), thus confirming that it has a role in normal physiologic homeostasis."

● Donald L. Hilton Jr., MD, "Pornography addiction—a supranormal stimulus considered in the context of neuroplasticity," *Socioaffective Neuroscience & Psychology* 2013, 3: 20767, 8.

7. DeltaFosB helps you remember to want whatever dopamine tells you you want, leaving those neural pathways there long after the dopamine is gone.

● Donald L. Hilton Jr., MD, "Pornography addiction—a supranormal stimulus considered in the context of neuroplasticity," *Socioaffective Neuroscience & Psychology* 2013, 3: 20767, 4.

8. "Numerous studies over the last two decades have established the fact that learning physically changes the brain. Such diverse learning templates as music (Elbert, Pantev, Wienbruch, Rockstroh, & Taub, 1995; Schwenkreis et al., 2007), juggling (Draganski et al., 2004), taxi driving (Maguire, Woollett, & Spiers, 2006), and intense studying (Draganski et al., 2006) have all been shown to affect morphologic alterations in gyri, and negative neuroplasticity has been seen with disuse (Coq & Xerri, 1999).

● Donald L. Hilton Jr., MD, "Pornography addiction—a supranormal stimulus considered in the context of neuroplasticity," *Socioaffective Neuroscience & Psychology* 2013, 3: 20767, 5.

9. "Addiction represents a pathologic but powerful form of learning and memory."

● Julie A. Kauer and Robert C. Malenka, "Synaptic Plasticity and Addiction," *Nature Reviews Neuroscience* 8 (2007): 844–858.

10. “Virtually every study on addiction has demonstrated atrophy of multiple areas of the brain, particularly those associated with frontal volitional control and the reward salience centers. This is true for drug addictions such as to cocaine,¹ methamphetamine,² and opioids,³ and also for behavioral conditions associated with pathologic overconsumption of natural rewards and behaviors such as food,⁴ sex⁵ and Internet addiction.”⁶

● (Donald L. Hilton Jr., MD, “Pornography addiction—a supranormal stimulus considered in the context of neuroplasticity,” *Socioaffective Neuroscience & Psychology* 2013, 3: 20767, 5.

1—T. E. Franklin, P. D. Acton, J. A. Maldjian, J. D. Gray, J. R. Croft, C. A. Dackis, et al. (2002). “Decreased Gray Matter Concentration in the Insular, Orbitofrontal, Cingulate, and Temporal Cortices of Cocaine Patients,” *Biological Psychiatry* 51, no. 2 (2002): 134–142.

2—P. M. Thompson, K. M. Hayashi, S. L. Simon, J. A. Geaga, M. S. Hong, Y. Sui, et al., “Structural Abnormalities in the Brains of Human Subjects Who Use Methamphetamine,” *Journal of Neuroscience* 24, no. 26 (2004): 6028–6036.

3—K. Lyoo, M. H. Pollack, M. M. Silveri, K. H. Ahn, C. I. Diaz, J. Hwang, et al. “Prefrontal and Temporal Gray Matter Density Decreases in Opiate Dependence,” *Psychopharmacology* 184, no. 2 (2005): 139–144.

4—N. Pannacciulli, A. Del Parigi, K. Chen, D. S. N. T. Le, R. M. Reiman, and P. A. Tataranni, “Brain Abnormalities in Human Obesity: A Voxel-Based Morphometry Study,” *NeuroImage* 31, no. 4 (2006): 1419–1425.

5—B. Schiffer, T. Peschel, T. Paul, E. Gizewski, M. Forsting, N. Leygraf, et al. “Structural Brain Abnormalities in the Frontostriatal System and Cerebellum in Pedophilia,” *Journal of Psychiatric Research* 41, no. 9 (2007): 754–762.

6—K. Yuan, W. Quin, Y. Lui, and J. Tian, “Internet Addiction: Neuroimaging Findings,” *Communicative & Integrative Biology* 4, no. 6 (2011): 637–639; Y. Zhou, F. Lin, Y. Du, L. Qin, Z. Zhao, J. Xu, et al., “Gray Matter Abnormalities in Internet Addiction: A Voxel-Based Morphometry Study,” *European Journal of Radiology* 79, no. 1 (2011): 92–95.

11. “Pornography is a perfect laboratory for this kind of novel learning fused with a powerful pleasure incentive drive. The focused searching and clicking, looking for the perfect masturbatory subject, is an exercise in neuroplastic learning.”

● Donald L. Hilton Jr., MD, “Pornography addiction—a supranormal stimulus considered in the context of neuroplasticity,” *Socioaffective Neuroscience & Psychology* 2013, 3: 20767, 5.

12. DeltaFosB is a critical molecular mediator for the long-term neural and behavioral plasticity induced by sexual experience.” [Note: in other words, DeltaFosB is behind long term brain and behavioral changes that occur with sexual conditioning.]

● DeltaFosB in The Nucleus Accumbens is Critical for Reinforcing Effects of Sexual Reward” (2010).

13. Natural and drug rewards not only converge on the same neural pathway, they converge on the same molecular mediators and likely in the same neurons (nerve cells) ... to influence the ... wanting of both types of rewards.”

● Natural and Drug Rewards Act on Common Neural Plasticity Mechanisms with DeltaFosB as a Key Mediator” (2013).

14. “Invariably, a vicious cycle is produced. In the pursuit of reward, the receptors that naturally mediate reward become desensitized or diminished, which creates the need for more substances, contributing to tolerance and withdrawal. The more the addict uses, the more they need, creating the progressive, vicious cycle that is the hallmark of all addictions.”

● Angres, D. H., & Bettinardi-Angres, K. (2008). The disease of addiction: Origins, treatment, and recovery. *Disease-a-Month*, 54, 696-721.

15. “Dopamine, a powerful neurotransmitter, can shape stimulus–reward learning to improve prediction while it also shapes stimulus–action learning, i.e., the behavioral response to reward-related stimuli. Cueing involves significant associational memories, and connectionist brain theory suggests that these associations are wired into the brain.”

● Angres, D. H., & Bettinardi-Angres, K. (2008). The disease of addiction: Origins, treatment, and recovery. *Disease-a-Month*, 54, 696-721.

16. “In addition to the obvious consequences of engaging in addictive behavior (i.e., legal, financial, psychosocial), there is a risk of neuronal recircuiting that results in physiological cycles of addictive behaviors, and these circuits are increasingly difficult to break.”

● Angres, D. H., & Bettinardi-Angres, K. (2008). The disease of addiction: Origins, treatment, and recovery. *Disease-a-Month*, 54, 696-721.

17. “Composed of mesolimbic incentive salience circuitry, the reward center governs all behavior in which motivation has a central role, including acquiring food, nurturing young, and having sex.”

● Bostwick, J. M., & Bucci, J. E. (2008). Internet sex addiction treated with naltrexone. *Mayo Clinic Proceedings*, 83(2), 226-230.

18. “Dopamine is the neurotransmitter driving both normal and addictive behavior. Other neurotransmitters modulate the amount of dopamine released in response to a stimulus, with the salience determined by the intensity of the dopamine pulse. Opiates (either endogenous or exogenous) exemplify such modulators.”

● Bostwick, J. M., & Bucci, J. E. (2008). Internet sex addiction treated with naltrexone. *Mayo Clinic Proceedings*, 83(2), 226-230.

19. “We have shown that female Syrian hamsters, given sexual experience, exhibit several behavioral alterations including increased sexual efficiency with naïve male hamsters, sexual reward and enhanced responsiveness to psychomotor stimulants (e.g. amphetamine). We recently demonstrated that sexual experience increased the levels of Δ FosB in the NAc of female Syrian hamsters.”

● Donald L. Hilton Jr., MD, “Pornography addiction—a supranormal stimulus considered in the context of neuroplasticity,” *Socioaffective Neuroscience & Psychology* 2013, 3: 20767, 5.

20. “A significant postulate of this commentary is that all addictions create, in addition to chemical changes in the brain, anatomical and pathological changes which result in various manifestations of cerebral dysfunction collectively labeled hypofrontal syndromes. In these syndromes, the underlying defect, reduced to its simplest description, is damage to the ‘braking system’ of the brain.”

● Hilton, D. L., & Watts, C. (2011). Pornography addiction: A neuroscience perspective. *Surgical Neurology International*, 2, 19.

21. “In 2002, a study on cocaine addiction demonstrated measurable volume loss in several areas of the brain, including the frontal lobes.¹ ... Another VBM study was published in 2004 on methamphetamine, with very similar findings.² ... Even more instructive are similar findings seen with the abuse of a normal biological behavior, eating, leading to addiction and obesity. In 2006, a VBM study was published looking specifically at obesity, and the results were very similar to the cocaine and methamphetamine studies.³ ... In 2007, a VBM study out of Germany looked specifically at pedophilia, and demonstrated almost identical finding to the cocaine, methamphetamine, and obesity studies.⁴ It concludes for the first time that a sexual compulsion can cause physical, anatomic change in the brain, the hallmark of brain addiction. A preliminary study showed frontal dysfunction specifically in patients unable to control their sexual behavior.”⁵

● Hilton, D. L., & Watts, C. (2011). Pornography addiction: A neuroscience perspective. *Surgical Neurology International*, 2, 19.

1—Franklin TR, Acton PD, Maldjian JA, Gray JD, Croft JR, Dackis CA, et al. Decreased gray matter concentration in the insular, orbitofrontal, cingulate, and temporal cortices of cocaine patients. *Biol Psychiatry* 2002;51:134-42.

2—Thompson PM, Hayashi KM, Simon SL, Geaga JA, Hong MS, Sui Y, et al. Structural abnormalities in the brains of human subjects who use methamphetamines. *J Neurosci* 2004;24:6028-36.

3—Pannacciulli N, Del Parigi A, Chen K, Le DS, Reiman EM, Tataranni PA. Brain abnormalities in human obesity: A voxel-based morphometry study. *Neuroimage* 2006;31:1419-25.

4—Schiffer B, Peschel T, Paul T, Gizewski E, Forsting M, Leygraf N, et al. Structural brain abnormalities in the frontostriatal system and cerebellum in pedophilia. *J Psychiatr Res* 2007;41:754-62.

5—Miner MH, Raymond N, Mueller BA, Lloyd M, Lim KO. Preliminary investigation of the impulsive and neuroanatomical characteristics of compulsive sexual behavior. *Psychiatry Res* 2009;174:146-51. (As quoted in

22. Work to date suggests an essential role for synaptic plasticity in the VTA in the early behavioural responses following initial drug exposures, as well as in triggering long-term adaptations in regions innervated by dopamine (DA) neurons of the VTA.¹ By contrast, downstream synaptic changes in the NAc and other brain regions, are likely to represent the formation of powerful and persistent links between the reinforcing aspects of the drug experience and the multiple cues (both internal and external) associated with that experience.² Here we review emerging evidence that addictive drugs elicit or modify synaptic plasticity in many of the key brain regions involved in addiction, and that these synaptic modifications have important behavioural consequences. A major motivation for this research is the assumption that addictions to the different classes of abused substances share important underlying brain mechanisms. Identifying these mechanisms will advance our ability to treat and prevent these often devastating disorders, as well as other related behaviours, such as gambling.³

● 1—Kauer, J. A. Learning mechanisms in addiction: synaptic plasticity in the ventral tegmental area as a result of exposure to drugs of abuse. *Annu. Rev. Physiol.* 66, 447–475 (2004).

2—Hyman, S. E. & Malenka, R. C. Addiction and the brain: the neurobiology of compulsion and its persistence. *Nature Rev. Neurosci.* 2, 695–703 (2001); and Kalivas, P. W. & Volkow, N. D. The neural basis of addiction: a pathology of motivation and choice. *Am. J. Psychiatry* 162, 1403–1413 (2005); and Montague, P. R., Hyman, S. E. & Cohen, J. D. Computational roles for dopamine in behavioural control. *Nature* 431, 760–767 (2004); and Hyman, S. E., Malenka, R. C. & Nestler, E. J. Neural mechanisms of addiction: the role of reward-related learning and memory. *Annu. Rev. Neurosci.* 29, 565–598 (2006); and Kauer, J. A. Learning mechanisms in addiction: synaptic plasticity in the ventral tegmental area as a result of exposure to drugs of abuse. *Annu. Rev. Physiol.* 66, 447–475 (2004); and Kelley, A. E. Memory and addiction: shared neural circuitry and molecular mechanisms. *Neuron* 44, 161–179 (2004).

3—Kauer, J. A., & Malenka, J. C. (2007). Synaptic plasticity and addiction. *Nature Reviews Neuroscience*, 8, 844–858.

23. “We hypothesize further that as higher levels of emotional stimulation induce more DeltaFosB in nucleus accumbens neurons, the neurons’ functioning is altered so that they become more sensitive to rewarding stimuli. In this way, induction of DeltaFosB would promote reward-related (i.e. emotional) memory through afferent projects of the nucleus accumbens.”

● Nestler, E. J. (2008). Transcriptional mechanisms of addiction: Role of DeltaFosB. *Philosophical Transactions of the Royal Society*, 363, 3245–3256.

24. “Pornography is often defined by the particular effect it produces in the spectator, that is, sexual arousal and masturbation to orgasm. Yet masturbation is usually absent in experimental studies. ... Masturbation and orgasm, as powerful physical and emotional experiences, are central to the pornographic experience and influence the interpretation and effects of the material. It is therefore possible that experimental studies in fact underestimate the effect of pornography.”

● Michael Flood, “Young Men Using Pornography,” in *Everyday Pornography*, edited by Karen Boyle. New York: Routledge, 2010.

Brain

1.10

How Pornography is Similar to a Drug

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1. “By hijacking our dopamine system, addictive substances give us pleasure without our having to work for it.”

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

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2. Dopamine is integral in plastic change in the brain because it consolidates the neuronal connections that led to the behavior that earned the dopamine burst. Dopamine is released in sexual excitement (ups the sex drive in men and women, facilitates orgasm, and activates the brain’s pleasure centers), “hence the addictive power of pornography.”

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

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

● Jeffrey Satinover, M.S., M.D., (Princeton University), Senate Committee on Commerce, Science, and Transportation; Subcommittee on Science, Technology, and Space; Hearing on the Brain Science Behind Pornography Addiction and Effects of Addiction on Families and Communities, Thursday, November 18, 2004.

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4. “DeltaFosB was found over a decade ago to be chronically elevated specifically in the medium spiny neurons of the nucleus accumbens in the brains of drug-addicted laboratory animals.¹ Subsequent studies have shown it to be elevated in these same cells in animals manifesting pathologic overconsumption of natural rewards, including food and sex.”²

● Donald L. Hilton Jr., MD, “Pornography addiction—a supranormal stimulus considered in the context of neuroplasticity,” *Socioaffective Neuroscience & Psychology* 2013, 3: 20767, 4.

1—M. B. Kelz, J. Chen, W. A. Carlezon, K. Whisler, L. Gilden, A. M. Beckmann, et al., “Expression of the Transcription Factor DeltaFosB in the Brain Controls Sensitivity to Cocaine,” *Nature* 401 (1999): 272–276.

2—Eric J. Nestler, “Is There a Common Molecular Pathway for Addiction?” *Nature Neuroscience* 9, no. 11 (2005): 1445–1449.

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5. “DeltaFosB is a protein studied by Nestler that appears to be over-expressed in the neurons of addicted subjects. It was first found in the neurons of animals studied in drug addiction² but has now been found in the nucleus accumbens related to over-consumption of natural rewards.”³

● Hilton, D. L., & Watts, C. (2011). Pornography addiction: A neuroscience perspective. *Surgical Neurology International*, 2, 19.

1—Nestler EJ, Kelz MB, Chen J. DeltaFosB: A molecular mediator of long-term neural and behavioral plasticity. *Brain Res* 1999;835:10-7.

2—Nestler EJ. Is there a common molecular pathway for addiction? *Nature Neurosci* 2005;9:1445-9.) (as quoted in Hilton, D. L., & Watts, C. (2011). Pornography addiction: A neuroscience perspective. *Surgical Neurology International*, 2, 19.

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6. “When a man looks at pornography and masturbates, he undergoes all the giddy physical sensations of sexual release. Adrenaline rushes through his veins. His brain releases dopamine, serotonin, and oxytocin—all powerful neurotransmitters associated with feelings of pleasure. Testosterone surges. It’s a potent high.”

● Paul, Pamela (2007-04-01). *Pornified: How Pornography Is Transforming Our Lives, Our Relationships, and Our Families* (p. 75). Henry Holt and Co.

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7. As neuroscience further elucidates addiction’s neural underpinnings, it becomes increasingly clear that a malfunctioning reward center is common to all compulsive behaviors, whether drug abuse, overeating, gambling, or excessive sexual activity.

● Bostwick, J. M., & Bucci, J. E. (2008). Internet sex addiction treated with naltrexone. *Mayo Clinic Proceedings*, 83(2), 226-230.

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8. “Each [compulsive] behavior [whether drug addiction or sexual addiction] has specific triggers and manifestations, yet the final common pathway for all involves neurochemical modulation of dopaminergic activity via receptors in the ventral tegmental area.”

● (VTA) Mick TM, Hollander E. Impulsive-compulsive sexual behavior. *CNS Spectr*. 2006;11(12):944-955; and Hyman SE. Addiction: a disease of learning and memory. *Am J Psychiatry*. 2005;162(8):1414-1422; as quoted in Bostwick, J. M., & Bucci, J. E. (2008). Internet sex addiction treated with naltrexone. *Mayo Clinic Proceedings*, 83(2), 226-230.

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9. “In 2005, Dr. Eric Nestler wrote a landmark paper describing all addiction as a dysfunction of the mesolimbic reward centers of the brain. Addiction occurs when pleasure/reward pathways are hijacked by exogenous drugs such as cocaine or opioids, or by natural processes essential and inherent to survival such as food and sex. The same dopaminergic systems include the ventral tegmental area with its projections to the nucleus accumbens and other striatal salience centers. He wrote, ‘Growing evidence indicates that the VTA-NAc pathway and the other limbic regions cited above similarly mediate, at least in part, the acute positive emotional effects of natural rewards, such as food, sex and social interactions. These same regions have also been implicated in the so-called ‘natural addictions’ (that is, compulsive consumption for natural rewards) such as pathological overeating, pathological gambling, and sexual addictions. Preliminary findings suggest that shared pathways may be involved: (an example is) cross-sensitization that occurs between natural rewards and drugs of abuse.’”

● Nestler EJ. Is there a common molecular pathway for addiction? *Nature Neurosci* 2005;9:1445-9.) (as quoted in Hilton, D. L., & Watts, C. (2011). Pornography addiction: A neuroscience perspective. *Surgical Neurology International*, 2, 19.

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10. “Just as exogenously administered drugs cause downgrading of dopamine receptors in the nucleus accumbens in addiction, evidence supports endogenously functioning neurotransmitters causing similar pathology.”

● As quoted in Hilton, D. L., & Watts, C. (2011). Pornography addiction: A neuroscience perspective. *Surgical Neurology International*, 2, 19.

11. “A recent paper investigating DeltaFosB and its role in over-consumption of two natural rewards, eating and sexuality, concludes: ... ‘the work presented here provides evidence that, in addition to drugs of abuse, natural rewards induce DeltaFosB levels in the Nac...our results raise the possibility that DeltaFosB induction in the NAc may mediate not only key aspects of drug addiction, but also aspects of so-called natural addictions involving compulsive consumption of natural rewards.’”

● Wallace DL, Vialou V, Rios L, Carle-Florence TL, Chakravarty S, Kumar A, et al. The influence of deltaFosB in the nucleus accumbens on natural reward-related behavior. *J Neurosci* 2008; 28:10272-7) (as quoted in Hilton, D. L., & Watts, C. (2011). Pornography addiction: A neuroscience perspective. *Surgical Neurology International*, 2, 19.

12. “Sex, like drug rewards, places its stamp on neuronal receptors, dendrites, and gyri as it facilitates neuroplastic change, thus meriting the addiction label when compulsively and destructively expressed.”

● Donald L. Hilton Jr., MD, “Pornography addiction—a supranormal stimulus considered in the context of neuroplasticity,” *Socioaffective Neuroscience & Psychology* 2013, 3: 20767, 6.

Brain

1.11

How & Why Pornography Can Be Addictive

1. Nora Volkow, as director of the National Institute on Disease of Addiction, wanted the “institute’s name [to] encompass addictions such as pornography, gambling, and food.”

● Donald L. Hilton Jr. and Clark Watts, “Pornography Addiction: a Neuroscience Perspective,” *Surgical Neurology International* 2, no. 19 (2011).

2. Addiction can be defined as “the continued use of mood-altering addicting substances or behaviors (e.g. gambling, CSBs) despite adverse consequences.”

● Angres, D. H., & Bettinardi-Angres, K. (2008). The disease of addiction: Origins, treatment, and recovery. *Disease-a-Month*, 54, 696-721.

3. The American Society of Addiction Medicine changed their definition of addiction in 2011. According to their FAQs about the change: “The new ASAM definition makes a departure from equating addiction with just substance dependence, by describing how addiction is also related to behaviors that are rewarding. ... This definition says that addiction is about functioning and brain circuitry and how the structure and function of the brains of persons with addiction differ from the structure and function of the brains of persons who do not have addiction. ... Food and sexual behaviors and gambling behaviors can be associated with the ‘pathological pursuit of rewards’ described in this new definition of addiction.”

● “Public Policy Statement: Definition of Addiction,” American Association of Addiction Medicine, April 12, 2011, http://www.asam.org/docs/public-policy-statements/1definition_of_addiction_long_4-11.pdf.

4. “The idea of a non-substance-related addiction may be new to some people, but those of us who are studying the mechanisms of addiction find strong evidence from animal and human research that addiction is a disorder of the brain reward system, and it doesn’t matter whether the system is repeatedly activated by gambling or alcohol or another substance.”

— Charles O’Brien, MD, chair of the DSM-5 Work Group on Substance-Related and Addictive Disorders

● Mark Moran, “Gambling Disorder to Be Included in Addictions Chapter,” *Psychiatric News*, April 19, 2013.

5. Addiction Interactive Disorder (AID) implies that addiction has many forms, such as gambling, food, sex, work, certain financial behaviors, and even religiosity.

● Carnes P. Addictive Interaction Disorder, *Handbook of Addictive Disorders: A Practical Guide to Diagnosis and Treatment*. Hoboken, NJ: John Wiley and Sons, 2004; as quoted in Angres, D. H., & Bettinardi-Angres, K. (2008). The disease of addiction: Origins, treatment, and recovery. *Disease-a-Month*, 54, 696-721

6. In his 1996 article in *American Scientist*, Ken Blum describes a reward deficiency syndrome that includes not only alcoholism and drug addiction but also other compulsive behaviors, including gambling, sexual compulsivity, and compulsive overeating. He hypothesized that a variant of the dopamine D2 allele mediates many compulsive behaviors.

● Blum K, Cull JG, Braverman ER, et al. Reward deficiency syndrome. *Am Scientist* 1996;84:132-45; as quoted in Angres, D. H., & Bettinardi-Angres, K. (2008). The disease of addiction: Origins, treatment, and recovery. *Disease-a-Month*, 54, 696-721.

7. “Patrick Carnes, PhD, reinforces this more global view of addiction with an emphasis on sexual compulsivity as a devastating, progressive process that can co-exist with, or be independent of, substance abuse/dependence.”

● Angres, D. H., & Bettinardi-Angres, K. (2008). The disease of addiction: Origins, treatment, and recovery. *Disease-a-Month*, 54, 696-721.

8. Dr. Howard Shaffer at Harvard wrote, “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.”

● Holden C. Behavioral addictions: Do they exist? *Science* 2001;294:980.

9. All addictions, whether substance or behavioral, result in the same set of anatomical and chemical changes in the brain.

● Nora D. Volkow, “Addiction: Decreased Reward Sensitivity and Increased Expectation Sensitivity Conspire to Overwhelm the Brain’s Control Circuit,” *BioEssays* 32, no. 9 (2010): 748–55.

10. In addiction, whether its from drugs or natural rewards, a set of core brain changes occur in response to chronically elevated dopamine levels.

● Christopher M. Olsen, “Natural Rewards, Neuroplasticity, and Non-Drug Addictions,” *Neuropharmacology* 61, no. 7 (2011): 1109–22.

11. “Furthermore, exposure to addictive substances for any reason can produce vulnerability to addiction. In fact, recent studies suggest that even a single exposure to a substance like morphine can make lasting changes in the brain, affecting memory and creating a process of pathological learning; that is, learning to crave drugs.”

● Angres, D. H., & Bettinardi-Angres, K. (2008). The disease of addiction: Origins, treatment, and recovery. *Disease-a-Month*, 54, 696-721.

12. DeltaFosB initiates brain changes related to addiction in both drug addiction and behavioral addiction.

● Eric J. Nestler, “DeltaFosB: a Molecular Switch for Reward,” *Journal of Drug and Alcohol Research* 2 (2013).

13. Sexual arousal is the most powerful natural reward our body has.

● Georgiadis, Janniko R., Rudie Kortekaas, Rutger Kuipers, Arie Nieuwenburg, Jan Pruim, A. A. T. Simone Reinders, and Gert Holstege. "Regional Cerebral Blood Flow Changes Associated with Clitorally Induced Orgasm in Healthy Women." *European Journal of Neuroscience* 24 (2006): 3305–16.

14. "As a person chronically floods their brain with dopamine—either from substances or behaviors such as porn viewing—DeltaFosB accumulates, strengthening and growing the brain pathways leading to whatever the person has been bingeing on.¹ The more those pathways grow and build connections between the reward center and anything connected to using, the easier it is to activate them.² In a desensitized brain, this is happening while it's becoming harder for the brain to register the dopamine put off by every day activities. This can fuel addiction because the person is craving porn while other things in their life are losing value to the reward center (aka, don't activate the person's dulled reward center as well as they used to when the reward center wasn't desensitized)."

● Gary Wilson, *Your Brain on Porn*, Kent, UK: Commonwealth Publishing, 2014
1—Pitchers, K. K., K. S. Frohmader, V. Vialou, E. Mouzon, E. J. Nestler, M. N. Lehman, et al. "DeltaFosB in the Nucleus Accumbens Is Critical for Reinforcing Effects of Sexual Reward." *Genes, Brain and Behavior* 9 (2010): 831–40.
2—J. A. Kauer and J. C. Malenka. "Synaptic Plasticity and Addiction." *Nature Reviews Neuroscience* 8 (2008): 844–58.

15. "Invariably, a vicious cycle is produced. In the pursuit of reward, the receptors that naturally mediate reward become desensitized or diminished, which creates the need for more substances, contributing to tolerance and withdrawal. The more the addict uses, the more they need, creating the progressive, vicious cycle that is the hallmark of all addictions."

● Angres, D. H., & Bettinardi-Angres, K. (2008). The disease of addiction: Origins, treatment, and recovery. *Disease-a-Month*, 54, 696-721.

16. DeltaFosB strengthens the brain pathways connecting porn use back to the reward center, so when a sensitized pathway gets activated, it slams the reward center with dopamine, making the person experience intense cravings to use again.

● Eric Nestler, "DeltaFosB: A Molecular Switch for Reward," *Journal of Drug and Alcohol Research* 2 (2013).

17. Eventually, the accumulation of DeltaFosB in the brain flips "a genetic switch," impacting which genes in the brain are turned on or off and causing damage to the brain's dopamine system, leaving them more vulnerable to addiction.

● Nestler, Eric. "Brain Plasticity and Drug Addiction." Presentation at Reprogramming the Human Brain Conference, Center for Brain Health, University of Texas at Dallas, April 11; Doidge, Norman. *The Brain that Changes Itself*. New York: Viking, 2007.

18. About 70 studies have shown that Internet addicts have the same core brain changes that substance addicts have.

● Internet & Video Game Addiction Brain Studies," [www.yourbrainonporn.com, http://yourbrainonporn.com/list-internet-video-game-brain-studies](http://yourbrainonporn.com/list-internet-video-game-brain-studies).

19. Some Internet addiction studies have included porn use.

● Michela Romano, Lisa A. Osborne, Roberto Truzoli, and Phil Reed, "Differential Psychological Impact of Internet Exposure on Internet Addicts," *PLoS One* 8, no. 2 (2013); Haifeng Hou, et al., "Reduced Striatal Dopamine Transporters in People with Internet Addiction Disorder," *Journal of Biomedicine and Biotechnology* (2012).

20. Dutch researchers found that Internet porn has the greatest addictive potential of any online activity, with online gaming coming in at No. 2.

● G. J. Meerkerk, R. J. Van Den Eijnden, and H. E. Garretsen, "Predicting Compulsive Internet Use: It's All About Sex!" *CyberPsychology & Behavior* 9, no. 1 (2006): 95–103.

21. Studies have shown that meth and cocaine take over the same nerve cells in the reward center that evolved for sexual conditioning.

● Karla S. Frohmader, et al., "Methamphetamine Acts on Subpopulations of Neurons Regulating Sexual Behavior in Male Rats," *Neuroscience* 166, no. 3 (2010): 771–84; Kyle K. Pitchers, et al., "Natural and Drug Rewards Act on Common Neural Plasticity Mechanisms with DeltaFosB as a Key Mediator," *Journal of Neuroscience* 33, no. 8 (2013): 3434–42.

22. Inside the reward center, sexual arousal has its own set of nerve cells that get's activated when something turns us on; these nerve cells are different than the ones activated by other natural rewards. When meth, cocaine, and heroine hijack the reward center, the nerve cells they activate are the ones for sex.

● Frohmader, Karla, Joost Wiskerke, Roy Wise, Michael Lehman, Lique Coolen. "Methamphetamine Acts on Subpopulations of Neurons Regulating Sexual Behavior in Male Rats." *Neuroscience* 166, no. 3 (2010): 771–784; Pitchers, K., V. Vialou, E. Nestler, S. Laviolette, N. Lehman, L. Coolen. "Natural and Drug Rewards Act on Common Neural Plasticity Mechanisms with DeltaFosB as a Key Mediator." *The Journal of Neuroscience* 33, no. 8 (2013): 3434–42.

23. A study examining brain scans of porn addicts and comparing them to non-addicts found that the addicts' brains showed an exaggerated response to porn cues, indicated their brains had been sensitized—which can lead to cravings. The study showed that the porn-addicts' brains lit up when they saw porn, the same way a drug addicts' brain lights up when they see something they associate with taking the drug.

● Valerie Voon, et al., "Neural Correlates of Sexual Cue Reactivity in Individuals with and without Compulsive Sexual Behaviours," *PLOS One* (2014).

24. "There are clear differences in brain activity between patients who have compulsive sexual behavior and healthy volunteers. ... These differences mirror those of drug addicts." —Valerie Voon

● "Love Is the Drug, Scientists Find," *The Telegraph*, July 11, 2014

25. A study comparing female porn users to female non-users found that the porn users “rated pornographic pictures as more arousing and reported greater craving due to pornographic picture presentation compared with [non-porn users]. Moreover, craving, sexual arousal rating of pictures, sensitivity to sexual excitation, problematic sexual behavior, and severity of psychological symptoms predicted tendencies toward cybersex addiction in [porn users].”

● C. Laier, J. Pekal, and M. Brand, “Cybersex Addiction in Heterosexual Female Users of Internet Pornography Can Be Explained by Gratification Hypothesis,” *CyberPsychology, Behavior and Social Networking* 17, no. 8 (2014): 505–11.

26. When a person’s dopamine signaling is reduced (such as with down-regulation of dopamine receptors) they’re left numbed to normal dopamine releasers and anxious for the large dopamine bursts that come with big dopamine rewards (drugs, porn).

● Jim Rosack, “Volkow May Have Uncovered Answer to Addiction Riddle,” *Psychiatric News*, June 4, 2004, <http://psychnews.psychiatryonline.org/newsarticle.aspx?articleid=107597>.

27. A recent study that compared brain scans of porn users to scans of non-users found that the more porn the person had used, the less their reward center activated when porn images were flashed on a screen. ¹ Once that happens, the person can’t feel dopamine’s effects as well, ² which can leave users looking for more extreme material or using porn more often to compensate for their numbed reward center.

● 1—Simone Kühn and Jürgen Gallinat, “Brain Structure and Functional Connectivity Associated With Pornography Consumption: The Brain on Porn,” *JAMA Psychiatry* (2014): 827–34.
2—Y. Goto, S. Otani, and A. A. Grace, “The Yin and Yang of Dopamine Release: A New Perspective,” *Neuropharmacology* 53, no. 5 (2007): 583–87.

28. Sensitization, or rewiring the brain to associate a substance or behavior—or related cues—with pleasure, means the reward center gets super stimulated by these things.

● G. Dong, J. Huang, and A. Du, “Enhanced Reward Sensitivity and Decreased Loss Sensitivity in Internet Addicts: An fMRI Study During a Guessing Task,” *Journal of Psychiatric Research* 45, no. 11 (2011): 1525–29.

29. “The part of the reward center that was overacting in addicts was different than the part of the reward center the Kuhn study found to underreact in porn users. That under reaction is a sign of desensitization, aka numbed pleasure response. The Laier and Voon studies show sensitization, or the effect of DeltaFosB build-up slamming the reward center with urges to use when users come across porn-related cues. Also, it’s important to note that the Kuhn study used 0.5 second exposures to still images, while the Voon study used 9 second video clips more similar to what porn users are used to and which are more likely to be cues. In short, these studies show that porn users are hyper reactive to porn but numbed to more normal sexual stimuli. Both of these symptoms are common to addicts.”

● Gary Wilson, *Your Brain on Porn*, Kent, UK: Commonwealth Publishing, 2014.

30. Voon’s research found that there was a wanting/liking split found among porn addicts—while they craved porn more intensely than their non-porn addicted peers, they didn’t show any increase in liking it. That wanting/liking split was also recorded in another patient being treated for porn addiction at the Mayo clinic. Speaking of porn, he said, “It was the pit of hell. I got no satisfaction, but I went there anyway.”

● J. Michael Bostwick and Jeffrey A. Bucci, “Internet Sex Addiction Treated with Naltrexone,” *Mayo Clinic Proceedings* 83, no. 2 (2008): 226–230.

31. “The addictiveness of Internet pornography is not a metaphor. Not all addictions are to drugs or alcohol. ... Pornographers promise healthy pleasure and relief from sexual tension, but what they often deliver is an addiction, tolerance, and an eventual decrease in pleasure. Paradoxically, the male patients I worked with often craved pornography but didn’t like it.”

● Norman Doidge, *The Brain that Changes Itself*

32. Altered grey matter and white matter in the brain’s prefrontal regions is correlated with having less impulse control¹ and less ability to anticipate consequences.²

● 1—G. Dong, H. Zhou, and X. Zhao, “Impulse Inhibition in People with Internet Addiction Disorder: Electrophysiological Evidence from a Go/NoGo Study,” *Neuroscience Letters* 485, no. 2 (2010): 138–42.
2—G. Dong, H. Zhou, and X. Zhao, “Male Internet Addicts Show Impaired Executive Control Ability: Evidence from a Color-Word Stroop Task,” *Neuroscience Letters* 499, no. 2 (2011): 114–18.

33. Researchers have found that having compromised brain function in Internet addicts may be related to their inability to control their Internet use.

● Matthias Brand, Kimberly S. Young, and Christian Laier, “Prefrontal Control and Internet Addiction: A Theoretical Model and Review of Neuropsychological and Neuroimaging Findings,” *Frontiers in Human Neuroscience* 8, no. 375 (2014).

34. Some experts warn that modern porn may cause “rapid onset” addiction in some users.

● Jennifer Riemersma and Michael Stysma, “A New Generation of Sexual Addiction,” *Sexual Addiction & Compulsivity* 20, no. 4 (2013): 306–22.

35. When a person is addicted to drugs, the spike in brain activity caused by seeing/hearing/smelling/etc. something associated with the drug can be as high as the spike in brain activity from actually using.

● Wynne K. Schiffer, et al., “Cue-Induced Dopamine Release Predicts Cocaine Preference: Positron Emission Tomography Studies in Freely Moving Rodents,” *The Journal of Neuroscience* 29, no. 19 (2009): 6176–85.

36. When lab rats were given the option between sweetened water and cocaine, nearly 95 percent of the rats preferred the sweetened water. [Note: This offers evidence that we may be more susceptible to natural addictions than to drug addictions.]

● Lenoir, Magalie, Fuschia Serre, Lauriane Cantin, and Serge H. Ahmed. "Intense Sweetness Surpasses Cocaine Reward," *PLoS One* (2007).

37. Among the porn addicts the Cambridge researchers examined, some had lost jobs due to porn use. Others had damaged relationships. More than half were experiencing lower libido or erectile dysfunction when they tried to have sex with real women, and some had lost large amounts of money or even become suicidal, each of which they reported was a result of their problem with porn.

● Voon, Valerie, Thomas Mole, Paula Banca, Laura Porter, Laurel Morris, Simon Mitchell, Tatyana Lapa, et al. "Neural Correlates of Sexual Cue Reactivity in Individuals with and without Compulsive Sexual Behaviours." *PLOS ONE* 9, no. 7 (2014).

38. "There is no question [these people] are suffering. ... I think [ours is] a study that can help people understand that this is a real pathology, this is a real disorder, so people will not dismiss compulsive sexual behavior as something moralistic. ... This is not different from how pathologic gambling and substance addiction were viewed several years ago."

—Valerie Voon, Cambridge

● Berman, Tara. "Sexual Addiction May Be Real After All," *ABC News*, July 11, 2014.

39. Pornography use often escalates to addiction.

● Alvin Cooper, David Delmonico, and Ron Burg, "Cybersex Users, Abusers, and Compulsives: New Findings and Implications," *Sexual Addiction & Compulsivity* 7, nos. 1 and 2 (2000): 5-29; Natasha Petty Levert, "A Comparison of Christian and Non-Christian Males, Authoritarianism, and Their Relation to Internet Pornography Addiction/Compulsion," *Sexual Addiction & Compulsivity* 14, no. 2 (2007): 145-66.

40. "The phenomenology of excessive nonparaphilic sexual disorder favors its conceptualization as an addictive behavior, rather than an obsessive-compulsive, or an impulse control disorder."

● Garcia & Thibault, 2010

41. "Rather than focusing on whether the addictive behavior involves injecting drugs or viewing highly arousing sexual images, an increased knowledge of cellular mechanisms allows us to understand that addiction involves and alters biology at the synaptic level, which then affects subsequent behavior."

● Donald L. Hilton Jr., MD, "Pornography addiction—a supranormal stimulus considered in the context of neuroplasticity," *Socioaffective Neuroscience & Psychology* 2013, 3: 20767, 3

42. Our brains naturally seek novelty, and sexuality can condition a powerful reward with novelty.

● Donald L. Hilton Jr., MD, "Pornography addiction—a supranormal stimulus considered in the context of neuroplasticity," *Socioaffective Neuroscience & Psychology* 2013, 3: 20767, 5.

43. Sexual orgasm is the most powerful natural dopaminergic reward in the nervous system.

● Georgiadis, Janniko R., Rudie Kortekaas, Rutger Kuipers, Arie Nieuwenburg, Jan Pruim, A. A. T. Simone Reinders, and Gert Holstege. "Regional Cerebral Blood Flow Changes Associated with Clitorally Induced Orgasm in Healthy Women." *European Journal of Neuroscience* 24 (2006): 3305-16.

44. "Sex, like drug rewards, places its stamp on neuronal receptors, dendrites, and gyri as it facilitates neuroplastic change, thus meriting the addiction label when compulsively and destructively expressed."

● Donald L. Hilton Jr., MD, "Pornography addiction—a supranormal stimulus considered in the context of neuroplasticity," *Socioaffective Neuroscience & Psychology* 2013, 3: 20767, 6.

45. "In the 2004 Elle-MSNBC.com survey, 17 percent of men who had used Internet pornography admitted to having a problem controlling their urge to log on."

● Paul, Pamela (2007-04-01). *Pornified: How Pornography Is Transforming Our Lives, Our Relationships, and Our Families* (p. 216). Henry Holt and Co.. Kindle Edition.

46. We may be more vulnerable to natural addictions than we are to drug addictions. Among people that take crack or meth, between 10 and 20 percent develop an addiction.¹ However, when it comes to problems with food the numbers are higher: 70 percent of American adults are overweight and 37 percent are obese.² When lab rats are given the option between sweetened water and cocaine, nearly 95 percent of the rats preferred the sweetened water.³

● 1—John Tierney, "The Rational Choices of Crack Addicts," *The New York Times*, September 16, 2013.

2—National Center for Health Statistics. *Health, United States, 2013: With Special Feature on Prescription Drugs*. Hyattsville, MD (2014).

3—Lenoir, Magalie, Fuschia Serre, Lauriane Cantin, and Serge H. Ahmed. "Intense Sweetness Surpasses Cocaine Reward," *PLoS One* (2007).

47. The fact that teens' brains are more sensitive to dopamine and produce more DeltaFosB makes them more vulnerable to developing addictions.

● B. J. Casey and R.M. Jones. "Neurobiology of the Adolescent Brain and Behavior: Implications for Substance Use Disorders," *Journal of the American Academy of Child & Adolescent Psychiatry* 49, no. 12 (2010): 1189-1201.

48. DeltaFosB may become a "biomarker to assess the state of activation of an individual's reward circuitry, as well as the degree to which an individual is 'addicted', both during the development of an addiction and its gradual waning during extended withdrawal or treatment."

● Pitchers KK, Frohmader KS, Vialou V, Mouzou E, Nestler EJ, Lehman MN, et al. DeltaFosB in the nucleus accumbens is critical for reinforcing effects of sexual reward. *Genes Brain Behav* 2010;9:831-40.)

49. It is unequivocal that the mesolimbic dopamine system, consisting of the ventral tegmental area (VTA) and nucleus accumbens (NAc), as well as associated limbic structures (FIG. 1), are critical substrates for the neural adaptations that underlie addiction. It is also clear that the interactions between addictive drugs and synaptic plasticity in different brain regions will contribute to specific aspects of addiction, such as craving, withdrawal and, perhaps most importantly, relapse.

● Kauer, J. A., & Malenka, J. C. (2007). Synaptic plasticity and addiction. *Nature Reviews Neuroscience*, 8, 844-858.

50. “The excessive induction of DeltaFosB seen under pathological conditions (e.g. chronic exposure to a drug of abuse) would lead to excessive sensitization of the nucleus accumbens circuitry and ultimately contribute to pathological behaviors (e.g. compulsive drug seeking and taking) associated with drug addiction.”

● Nestler, E. J. (2008). Transcriptional mechanisms of addiction: Role of DeltaFosB. *Philosophical Transactions of the Royal Society*, 363, 3245-3256.

51. “Sexual experience was shown to cause DeltaFosB accumulation in several limbic brain regions including the nucleus accumbens (NAc), medial prefrontal cortex, ventral tegmental area and caudate putamen.”

● Pitchers, K. K., Frohmader, K. S., Vialou, V., Mouzon, E., Nestler, E. J., Lehman, M. N., et al. (2010). DeltaFosB in the nucleus accumbens is critical for reinforcing effects of sexual reward. *Genes Brain and Behavior*, 9(7), 831-840.

52. Compared to the homosexual and heterosexual control subjects, pedophiles showed decreased gray matter volume in the ventral striatum (also extending into the nucleus accumbens), the orbitofrontal cortex and the cerebellum. These observations further indicate an association between frontostriatal morphometric abnormalities and pedophilia. [Fight the New Drug Editor's Note: These result show a significant correlation between a sexual compulsion and gray matter shrinkage.]

● Schiffer, B., Peschel, T., Paul, T., Gizewski, E., Forsting, M., Leygraf, N., et al. (2007). Structural brain abnormalities in the frontostriatal system and cerebellum in pedophilia. *Journal of Psychiatric Research*, 41(9), 754-762.

53. “We demonstrate that overexpression of DeltaFosB in the NAc increases sucrose intake and promotes aspects of sexual behavior. In addition, we show that animals with previous sexual experience, which exhibit increased DeltaFosB levels, also show an increase in sucrose consumption. This work suggests that DeltaFosB is not only induced in the NAc by drugs of abuse, but also by natural rewarding stimuli. Additionally, our findings show that chronic exposure to stimuli that induce DeltaFosB in the NAc can increase consumption of other natural rewards.”

● Wallace, D. L., Vialou, V., Rios, L., Carle-Florence, T. L., Chakravarty, S., Arvind Kumar, A., et al. (2008). The influence of DeltaFosB in the nucleus accumbens on natural reward-related behavior. *Journal of Neuroscience*, 28(4), 10272-10277

54. In a poll of about 1,500 NoFap users, only 7 percent had joined for religious reasons.

● NoFap Survey, www.reddit.com/r/NoFap, March, 2014, <https://docs.google.com/file/d/0B7q3tr4EV02wbkpTTVt4R2VGbm8/edit?pli=1>.

55. Researchers have found that dopamine works through “the brain’s main stress signal to increase the activity of a brain region involved in addiction relapse.” The study indicates that stress can lead to craving and relapse by activating rewired pathways.

● Leigh MacMillan, “Reward-Stress Link Points to New Addiction Targets,” *Reporter*, January 9, 2009, [http://www.mc.vanderbilt.edu/reporter/index.html?ID=6916.and Withdrawal](http://www.mc.vanderbilt.edu/reporter/index.html?ID=6916.and%20Withdrawal).” *Physiology & Behavior* 106, no. 3 (2012): 332-36.

56. In a recent nationally representative poll, 43 percent of men and 9 percent of women reported that they had watched porn in the past week. Among 20-somethings, numbers for those who had used in the past week rose above 50 percent for men and 20 percent for women.

● The Austin Institute for the Study of Family and Culture. *Relationships in American Survey*. 2014. <http://relationshipsinaustralia.com/relationships-and-sex/how-much-pornography-are-americans-consuming>.

Brain

1.12

Why the Adolescent Brain Is Vulnerable

1. “The teen brain is not ... a half-baked adult brain ... It has been forged by evolution to function differently from that of a child or an adult.”

● Jay N. Giedd, “The Amazing Teen Brain,” *Scientific American*, June 2015, 32–37.

2. “Foremost among the teen brain’s features is its ability to change in response to the environment by modifying the communications networks that connect brain regions This special changeability, or plasticity, is a double-edged sword It allows teenagers to make enormous strides in thinking and socialization. But the morphing landscape also makes them vulnerable to dangerous behaviors and serious mental disorders.”

● Jay N. Giedd, “The Amazing Teen Brain,” *Scientific American*, June 2015, 32–37.

3. “An early maturing or exaggerated reward system, perhaps associated with an augmented responsiveness of the NAc, may lead to an enhanced sensitivity to the positive hedonics of potential rewards during this developmental phase [adolescence].”

● Tamara L. Doremus-Fitzwater, Elena I. Varlinskaya, and Linda P. Spear, “Motivational Systems in Adolescence: Possible Implications for Age Differences in Substance Abuse and Other Risk-Taking Behaviors,” *Brain and Cognition* 72, no. 1 (2010): 114.

4. “Adolescents [have been shown] to be more sensitive than adults to positive rewarding properties of various drugs and natural stimuli, while less sensitive to the aversive properties of these stimuli.”

● Tamara L. Doremus-Fitzwater, Elena I. Varlinskaya, and Linda P. Spear, “Motivational Systems in Adolescence: Possible Implications for Age Differences in Substance Abuse and Other Risk-Taking Behaviors,” *Brain and Cognition* 72, no. 1 (2010): 114.

5. The teen brain’s reward center has a response two to four times more powerful than an adult brain’s, which means teen brains release higher levels of dopamine in response to natural rewards.

● Sturman, David A. and Bita Moghaddam, “Reduced Neuronal Inhibition and Coordination of Adolescent Prefrontal Cortex During Motivated Behavior,” *The Journal of Neuroscience* 31, no. 4 (2011): 1471–78.

6. The teen brain produces higher levels of DeltaFosB compared with the adult brain.

● Eric Nestler, “Transcriptional Mechanisms of Addiction: Role of DeltaFosB,” *Philosophical Transactions of the Royal Society B* 363, no. 1507 (2008): 3245–3255.

7. By the time a person reaches adulthood, their dopamine receptors in their reward center have decreased by a third to a half of their adolescent levels.

● Tamara L. Doremus-Fitzwater, Elena I. Varlinskaya, and Linda P. Spear, “Motivational Systems in Adolescence: Possible Implications for Age Differences in Substance Abuse and Other Risk-Taking Behaviors,” *Brain and Cognition* 72, no. 1 (2010): 114.

8. In experiments looking at rats, researchers found that “VTA dopamine neurons fired faster in adolescents than in adults as measured with in vivo extracellular recordings. Dopamine neuron firing can be divided into nonbursting (single spikes) and bursting activity (clusters of high-frequency spikes). Nonbursting activity was higher in adolescents compared with adults. Frequency of burst events did not differ between ages, but bursts were longer in adolescents than in adults. ... In conclusion, VTA dopamine neurons fire faster in adolescence, potentially because GABA tone increases as rats reach adulthood. This elevation of firing rate during adolescence is consistent with it representing a vulnerable period for developing drug addiction.”

● James E. McCutcheon, Kelly L. Conrad, Steven B. Carr, Kerstin A. Ford, Daniel S. McGehee, and Michela Marinelli, “Dopamine Neurons in the Ventral Tegmental Area Fire faster in Adolescent Rats than in Adults,” *Journal of Neurophysiology* 108, no. 6 (2012): 1620–1630.

9. “Behavioral evidence suggests that adolescents may conversely exhibit an attenuated sensitivity to aversive properties of stimuli, perhaps in part through developmental alterations in neural components of these same motivational systems, although the neural mechanisms underlying such aversive properties have not been systematically explored in adolescence.”

● Tamara L. Doremus-Fitzwater, Elena I. Varlinskaya, and Linda P. Spear, “Motivational Systems in Adolescence: Possible Implications for Age Differences in Substance Abuse and Other Risk-Taking Behaviors,” *Brain and Cognition* 72, no. 1 (2010): 114.

10. “Adolescents across a variety of species not only show increases in risk-taking and novelty seeking behaviors, but also demonstrate elevated social interactions with their peers. Brain alterations in regions implicated in mediating motivational and reward-related behaviors likely contribute to expression of these adolescent-typical behaviors.”

● Tamara L. Doremus-Fitzwater, Elena I. Varlinskaya, and Linda P. Spear, “Motivational Systems in Adolescence: Possible Implications for Age Differences in Substance Abuse and Other Risk-Taking Behaviors,” *Brain and Cognition* 72, no. 1 (2010): 114.

11. “The most recent studies indicate that the riskiest behaviors arise from a mismatch between the maturation of networks in the limbic system, which drives emotions and becomes turbo-boosted in puberty, and the maturation of networks in the prefrontal cortex, which occurs later and promotes sound judgment and the control of impulses. Indeed, we now know that the prefrontal cortex continues to change prominently until well into a person’s 20s. And yet puberty seems to be starting earlier, extending the ‘mismatch years.’”

● Jay N. Giedd, “The Amazing Teen Brain,” *Scientific American*, June 2015, 32–37.

12. “The limbic system, which drives emotions, intensifies at puberty, but the prefrontal cortex, which controls impulses, does not mature until the 20s. This mismatch makes teens prone to risk taking but also allows them to adapt readily to their environment.”

● Jay N. Giedd, “The Amazing Teen Brain,” *Scientific American*, June 2015, 32–37.

13. “Adolescent rats, like their human counterparts, exhibit elevations in peer-directed social interactions, risk-taking/ novelty seeking and drug and alcohol use relative to adults, along with notable changes in motivational and reward-related brain regions.”

● Tamara L. Doremus-Fitzwater, Elena I. Varlinskaya, and Linda P. Spear, “Motivational Systems in Adolescence: Possible Implications for Age Differences in Substance Abuse and Other Risk-Taking Behaviors,” *Brain and Cognition* 72, no. 1 (2010): 114.

14. “Ultimately, this adolescent-typical combination of enhanced positive/attenuated aversive biases toward drugs and other stimuli may contribute to elevated drug use during adolescence.”

● Tamara L. Doremus-Fitzwater, Elena I. Varlinskaya, and Linda P. Spear, “Motivational Systems in Adolescence: Possible Implications for Age Differences in Substance Abuse and Other Risk-Taking Behaviors,” *Brain and Cognition* 72, no. 1 (2010): 114.

15. Scientific research has “increased risk-taking behavior in adolescence is associated with different developmental trajectories of subcortical pleasure and cortical control regions. These developmental changes can be exacerbated by individual differences in activity of reward systems.”

● B. J. Casey, Sarah Getz, and Adriana Galvan, “The Adolescent Brain,” *Developmental Review* 28, no. 1 (2008): 62–77.

16. “It’s also a particularly cruel irony of nature, I think, that right at this time [adolescence] when the brain is most vulnerable is also the time when teens are most likely to experiment with drugs or alcohol. Sometimes when I’m working with teens, I actually show them these brain development curves, how they peak at puberty and then prune down and try to reason with them that if they’re doing drugs or alcohol that evening, it may not just be affecting their brains for that night or even for that weekend, but for the next 80 years of their life.”

● Jay Giedd, “Inside the Teenage Brain,” *Frontline*, <http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/interviews/giedd.html>

17. “Brain development, like other complex processes in nature, proceeds by a one-two punch of overproduction, followed by selective elimination. ... Many cognitive advances arise during a sculpting process in which unused or maladaptive brain cell connections are pruned away. Frequently used connections, meanwhile, are strengthened. Although pruning and strengthening occur throughout our lives, during adolescence the balance shifts to elimination, as the brain tailors itself to the demands of its environment.”

● Jay N. Giedd, “The Amazing Teen Brain,” *Scientific American*, June 2015, 32–37.

[NOTE: Brain sculpting has particular relevance to pornography users in that it impacts which arousal pathways are strengthened. When teens are learning to associate arousal with pornography—which involves being alone, constantly seeking new subjects, and extreme sex acts—those pathways will strengthen at the expense of pathways connecting arousal to actual people and real-life sexual experiences.]

16. “Specialization arises as unused connections among neurons are eliminated, decreasing the brain’s gray matter. ... Overall, gray matter increases during childhood, reaches a maximum around age 10 and declines through adolescence. It levels off during adulthood and declines somewhat further in senescence. The pattern also holds for the density of receptor cells on neurons that respond to neurotransmitters—molecules such as dopamine, serotonin and glutamate that modulate communication among brain cells.”

● Jay N. Giedd, “The Amazing Teen Brain,” *Scientific American*, June 2015, 32–37.

17. “The exuberant growth during the pre-puberty years gives the brain enormous potential. The capacity to be skilled in many different areas is building up during those times. ... But the pruning-down phase is perhaps even more interesting, because our leading hypothesis for that is the ‘use it or lose it’ principle. Those cells and connections that are used will survive and flourish. Those cells and connections that are not used will wither and die. So if a teen is doing music or sports or academics, those are the cells and connections that will be hard-wired. If they’re lying on the couch or playing video games or MTV, those are the cells and connections that are going [to] survive.”

● Jay Giedd, “Inside the Teenage Brain,” *Frontline*, <http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/interviews/giedd.html>

18. “Right around the time of puberty and on into the adult years is a particularly critical time for the brain sculpting to take place. Much like Michelangelo’s David, you start out with a huge block of granite at the peak at the puberty years. Then the art is created by removing pieces of the granite, and that is the way the brain also sculpts itself. Bigger isn’t necessarily better, or else the peak in brain function would occur at age 11 or 12. ... The advances come from actually taking away and pruning down of certain connections themselves.”

● Jay Giedd, “Inside the Teenage Brain,” *Frontline*, <http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/interviews/giedd.html>

19. “The cortex prunes away little used circuits, while strengthening well worn neural pathways. Nerve cell axons in favored pathways become better insulated with myelin, increasing the speed of nerve impulses. Little branches that receive messages (called dendrites) grow like veins to better hear the incoming signal. The connections between axons and dendrite (synapses) multiply on strong circuits and vanish on weaker ones. In the end you have memories, skills, habits, preferences and ways of coping that stand the test of time.”

● David Dobbs, “Teenage Brains,” *National Geographic*, October 2011.

20. “Although genetic factors strongly contribute to the development and maturation of neural circuits, a large body of evidence shows that the fine-tuning of neural circuits is also under environmental influences. Human studies suggest that activity-dependent elimination of excitatory connections is mainly responsible for the 40 percent reduction of synapses during adolescence.”

● Gregory Z. Tau and Bradley S. Peterson, “Normal Development of Brain Circuits,” *Neuropsychopharmacology* 35, no. 1 (2010): 147–168.

21. “The prefrontal cortex functions are not absent in teenagers; they are just not as good as they are going to get. Because they do not fully mature until a person’s 20s, teens may have trouble controlling impulses or judging risks and rewards.”

● Jay N. Giedd, “The Amazing Teen Brain,” *Scientific American*, June 2015, 32–37.

22. “Unlike the prefrontal cortex, the hormone-fueled limbic system undergoes dramatic changes at the time of puberty, which traditionally begins between ages 10 and 12. The system regulates emotion and feelings of reward. It also interacts with the prefrontal cortex during adolescence to promote novelty seeking, risk taking and a shift toward interacting with peers. These behaviors, deeply rooted in biology and found in all social mammals, encourage tweens and young teens to separate from the comfort and safety of their families to explore new environments and seek outside relationships. These behaviors diminish the likelihood of inbreeding, creating a healthier genetic population, but they can also pose substantial dangers, especially when mixed with modern temptations ... unchecked by sound judgment.”

● Jay N. Giedd, “The Amazing Teen Brain,” *Scientific American*, June 2015, 32–37.

23. “The frontal lobes are the seat of what’s sometimes called the brain’s executive function. They’re responsible for planning, for self-awareness, and for judgment. Optimally, they act as a check on impulses originating in other parts of the brain. But in the teen years ... the brain is still busy building links between its different regions. This process involves adding myelin around the axons, which conduct electrical impulses. (Myelin insulates the axons, allowing impulses to travel faster.) It turns out that the links are built starting in the back of the brain, and the frontal lobes are one of the last regions to get connected. They are not fully myelinated until people are in their twenties, or even thirties.”

● Elizabeth Kolbert, “The Terrible Teens,” *The New Yorker*, August 31, 2015, <http://www.newyorker.com/magazine/2015/08/31/the-terrible-teens>.

24. “In MRI scans, the increase in connectivity among brain regions is indicated as greater volumes of white matter. The ‘white’ in white matter comes from a fatty substance called myelin, which wraps and insulates the long wire, or axon, that extends from a neuron’s body. Myelination—the formation of this fatty sheath—takes place from childhood through adulthood and significantly speeds up the conduction of nerve impulses among neurons. Myelinated axons transmit signals up to 100 times faster than unmyelinated ones.”

● Jay N. Giedd, “The Amazing Teen Brain,” *Scientific American*, June 2015, 32–37.

25. “Recent investigations are revealing another, more nuanced role for myelin. Neurons integrate information from other neurons but only fire to pass it on if the incoming input exceeds a certain electrical threshold. If the neuron fires, that action initiates a series of molecular changes that strengthens the synapses, or connections, between that neuron and the input neurons. This strengthening of connections forms the basis for learning. What researchers themselves are now learning is that for input from nearby and distant neurons to arrive simultaneously at a given neuron, the transmission must be exquisitely timed, and myelin is intimately involved in the fine-tuning of this timing. As children become teenagers, the rapid expansion of myelin increasingly joins and coordinates activities in different parts of the brain on a variety of cognitive tasks.”

● Jay N. Giedd, “The Amazing Teen Brain,” *Scientific American*, June 2015, 32–37.

26. “The plasticity of networks linking brain regions—and not the growth of those regions, as previously thought—is key to eventually behaving like an adult.”

● Jay N. Giedd, “The Amazing Teen Brain,” *Scientific American*, June 2015, 32–37.

27. “The adolescent brain does not mature by getting larger; it matures by having its different components become more interconnected and by becoming more specialized.”

● Jay N. Giedd, “The Amazing Teen Brain,” *Scientific American*, June 2015, 32–37.

Brain

1.13

Pornography Addiction Escalates

1. Men interviewed reported that after many hours looking at porn, they found themselves willing to look at things they would have previously found disturbing, including bestiality, group sex, hard-core S&M, genital torture and child pornography.

● Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in James R. Stoner, Jr. and Donna M. Hughes, eds. *The Social Costs of Pornography: A Collection of Papers*. Princeton, NJ: Witherspoon Institute (2010), 7.

2. "The current porn epidemic gives a graphic demonstration that sexual tastes can be acquired. Pornography, delivered by high-speed Internet connections, satisfies every one of the prerequisites for neuroplastic change. Pornography seems, at first glance, to be a purely instinctual matter ... But if that were true, pornography would be unchanging. The same triggers, bodily parts and their proportions that appealed to our ancestors would excite us. That is what pornographers would have us believe ... But in fact the content of pornography is a dynamic phenomenon that perfectly illustrates the progress of an acquired taste. ... Now hardcore has evolved and is increasingly dominated by the sadomasochistic themes of forced sex, ejaculations on women's faces, and angry anal sex, all involving scripts fusing sex with hatred and humiliation."

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

3. "When pornographers boast that they are pushing the envelope by introducing new, harder themes, what they don't say is that they must, because their customers are building up a tolerance to the content."

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

4. "Sexual deviance can be learned. Some men may initially look at deviant pornography out of curiosity. Some may move up to hard kinds because softer material no longer arouses them. Either way they may learn deviant beliefs and behavior from it. Things that used to lead to disgust now seem less unusual and more common and even normal, and over time, come to seem sexy."

● Mary Anne Layden, "Pornography and Violence: A New look at the Research," in James R. Stoner, Jr. and Donna M. Hughes, eds. *The Social Costs of Pornography: A Collection of Papers*. Princeton, NJ: Witherspoon Institute (2010), 67.

5. Looking at porn frequently leads to the user normalizing things that initially caused adverse reactions or was offensive; it also builds up a tolerance for sexually explicit material, which in turns requires the user to seek out more novel porn to experience the same arousal or interest.

● Dolf Zillmann, "Influence of Unrestrained Access to Erotica on Adolescents' and Young Adults' Dispositions Toward Sexuality," *Journal of Adolescent Health* 27, no 2 (2000): 41-44.

6. "The first change that happened was an addiction-effect. The porn-consumers got hooked. Once involved in pornographic materials, they kept coming back for more and still more. ... The second phase was an escalation-effect. With the passage of time, the addicted person required rougher, more explicit, more deviant, and 'kinky' kinds of sexual material to get their 'highs' and 'sexual turn-ons.' It was reminiscent of individuals afflicted with drug addictions. ... The third phase was desensitization. Material ... which was originally perceived as shocking, taboo-breaking, illegal, repulsive, or immoral, in time came to be seen as acceptable and commonplace. ... The fourth phase was an increasing tendency to act out sexually the behaviors viewed in the pornography, including ... frequenting massage parlors."

● Dr. Victor Cline, clinical psychologist who treated many with pornography addictions; Victor B. Cline, *Pornography's Effect on Adults and Children* (New York: Morality in Media, 2001).

7. If your appetite is stimulated and fed by poor-quality material, it takes more junk to fill you up. People are not closer because of porn but further apart; people are not more turned on in their daily lives but less so.

● Niomi Wolf, http://nymag.com/nymetro/news/trends/n_9437/index1.html

8. Men shown pornographic films for ninety minutes a day, five days a week showed diminished sexual arousal and interest over time.

● Edward Donnerstein, Daniel Linz, and Steen Penrod, *The Question of Pornography: Research Findings and Policy Implications* (New York: Free Press, 1987), p. 29.

9. "Pornography, without emotional variation, will become repetitive and uninteresting, even to men watching primarily to facilitate masturbation. So pornography needs an edge."

● Robert Jensen, "A Cruel Edge: The Painful Truth About Today's Pornography—and What Men Can Do About It," *Ms.*, Spring 2004, pp. 55–58.

10. Desensitization occurs when "pornography which was originally perceived as shocking, taboo-breaking, illegal, repulsive, or immoral, though still sexually arousing, in time came to be seen as acceptable and commonplace.... There is an increasing sense that 'everybody does it' and this gave them permission to also do it, even though the activity was possibly illegal and contrary to their previous moral beliefs and personal standards."

● Victor B. Cline, "Pornography's Effects on Adults and Children" (New York: Morality in Media, n.d.).

11. In addition to the obvious consequences of engaging in addictive behavior (i.e., legal, financial, psychosocial), there is a risk of neuronal recircuiting that results in physiological cycles of addictive behaviors, and these circuits are increasingly difficult to break.

● Angres, D. H., & Bettinardi-Angres, K. (2008). The disease of addiction: Origins, treatment, and recovery. *Disease-a-Month*, 54, 696-721.

12. “Nora Volkow’s study has shown that 14 demonstrates that, as the addiction progresses, one’s ability to make appropriate choices diminishes. Increased impulsivity is accompanied by old memories of times past when the addiction worked and negation of options other than engaging in the addiction. “Impaired Response Inhibition and Salience Attribution in Addictions.”

● Goldstein RZ, Volkow ND. Drug addiction and its underlying neurobiological basis: neuroimaging evidence for the involvement of the frontal cortex. *Am J Psychiatry* 2002;159:1642-52; as quoted in Angres, D. H., & Bettinardi-Angres, K. (2008). The disease of addiction: Origins, treatment, and recovery. *Disease-a-Month*, 54, 696-721.

13. “Cellular adaptations in the [pornography] addict’s PFC result in increased salience of drug-associated stimuli, decreased salience of non-drug stimuli, and decreased interest in pursuing goal-directed activities central to survival.”

● Bostwick, J. M., & Bucci, J. E. (2008). Internet sex addiction treated with naltrexone. *Mayo Clinic Proceedings*, 83(2), 226-230.

14. “He has created a kind of ‘neosexuality,’ a rebuilt libido that has strong roots in his buried sexual tendencies. Because he often develops tolerance, the pleasure of sexual discharge must be supplemented with the pleasure of an aggressive release, and sexual and aggressive images are increasingly mingles—hence the increase in sadomasochistic themes in hardcore porn.”

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

Brain

1.14

Healing the Brain from Pornography Exposure

1. Once porn is left behind, the brain pathways it created will start to fade.

● Doidge, Norman. *The Brain that Changes Itself*. New York: Viking, 2007.

2. When a brain that has become accustomed to chronic overstimulation stops getting that overstimulation, neurochemical changes in the brain start happening. As a result, many users report withdrawal symptoms.

● Avena, N. M. and P. V. Rada. "Cholinergic modulation of Food and Drug Satiety and Withdrawal." *Physiology & Behavior* 106, no. 3 (2012): 332–36.

3. The brain can regain sensitivity to healthy, everyday activities.

● Lisle, Douglas and Alan Goldhamer. *The Pleasure Trap*. Summertown, TN: Healthy Living Publications.

4. Research indicates that damaged frontal lobes can recover once constant overstimulation stops.

● Kim, Seog Ju, In Kyoong Lyoo, Jaewuk Hwang, Ain Chung, Young Hoon Sung, Jihyun Kim, Do-Hoon Kwon, Kee Hyun Chang, and Perry Renshaw. "Prefrontal Grey-matter Changes in Short-term and Long-term Abstinent Methamphetamine Abusers." *The International Journal of Neuropsychopharmacology*, 9 (2006): 221–28.

Heart

Heart

Heart

2.1

How Pornography Warps Expectations

1. In pornography “sex is divorced from intimacy, loving affection, and human connection; all women are constantly available for sex and have insatiable sexual appetites; and all women are sexually satisfied by whatever the men in the film do.”

● R. Jensen and G. Dines, “The Content of Mass-Marketed Pornography,” in *Pornography: The Production and Consumption of Inequality*, eds. G. Dines, R. Jensen, and A. Russo. New York: Routledge (1998), pp. 65–100.

2. “Media affect youth ... by influencing beliefs and behaviors.”

● Victor C. Strasburger, Amy B. Jordan, and Ed Donnerstein, “Health Effects of Media on Children and Adolescents,” *Pediatrics* 125, no. 4 (2010): 756–767.

3. “According to social learning theory, children and adolescents learn by observing and imitating what they see on the screen particularly when these behaviors seem realistic or are rewarded.”

● Victor C. Strasburger, Amy B. Jordan, and Ed Donnerstein, “Health Effects of Media on Children and Adolescents,” *Pediatrics* 125, no. 4 (2010): 756–767.

4. “Media present youth with common ‘scripts’ for how to behave in unfamiliar situations such as romantic relationships.”

● D. L. Tolman, J. L. Kim, D. Schooler, and C. L. Sorsoli, “Rethinking the Associations between Television Viewing and Adolescent Sexuality Development: Bringing Gender into Focus,” *Journal of Adolescent Health* 40, no. 1 (2007): 84; as quoted in Victor C. Strasburger, Amy B. Jordan, and Ed Donnerstein, “Health Effects of Media on Children and Adolescents,” *Pediatrics* 125, no. 4 (2010): 756–767.

5. According to “superpeer theory,” the media acts as an influential best friend that makes risky behaviors seem normal and common.

● V. C. Strasburger, B. J. Wilson, and A. B. Jordan. *Children, Adolescents, and the Media*, 2nd Edition. Thousand Oaks, Calif.: Sage, 2009.

6. “We learn better using images than words, because images carry more information in a more compact form. ... Words are often perceived as opinions, while images are often perceived as events or facts. We argue in our head against words or opinions, but much less often against events or facts, particularly images. The vast majority of pornography is visual.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

7. “We also learn better when aroused. If something activates our sympathetic nervous system, we are more prepared to remember the information received at that point.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

8. “Learning is better if it is reinforced. Behavior that is rewarded is likely to be repeated while behavior that is punished is less likely to be repeated. Sexual arousal and orgasm are extremely rewarding experiences. We may be innately predisposed to enjoy the rewards of sexual arousal and orgasm, but we learn how and when and with whom we can experience those pleasures. If a novel sexual behavior produces an orgasm, we are more likely to repeat that behavior and add it to our sexual template and repertoire.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

9. “Learning is also better if we see others perform a behavior and observe what happens. Seeing others who are modeling behaviors rewarded or punished will have some of the same effects on us as if we were rewarded or punished ourselves.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

10. “Imagery that contains role models who are demonstrating sexual behavior and being rewarded for it, that produces sexual arousal in the viewer and is followed by an orgasm, can be extremely effective in producing deeply learned beliefs and behaviors. Pornography can offer all these elements—images, arousal, reinforcement, the example of others—so it is a potent teacher of both beliefs and behaviors. It provides the ideal conditions for learning.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

11. Frequent exposure to pornography is associated with “acceptance of promiscuity as a normal state of interaction.”

● Dolf Zillmann, “Influence of Unrestrained Access to Erotica on Adolescents’ and Young Adults’ Dispositions Toward Sexuality,” *Journal of Adolescent Health* 27, no. 2 (2000): 41–44.

12. Media plays an important role in shaping adolescents beliefs about how males and females behave in romantic relationships.

● J. D. Brown and K. L. L’Engle, “X-Rated: Sexual Attitudes and Behaviors Associated with US Early Adolescents’ Exposure to Sexually Explicit Media,” *Communication Research* 36, no. 1 (2009): 129–151.

13. A study of Greek youth found that adolescents exposed to pornography may develop “unrealistic attitudes about sex and misleading attitudes toward relationships.”

● A. Tsitsika, E. Critselis, D. Kormas, E. Konstantoulaki, A. Constantopoulos, and D. Kafetzis, “Adolescent Pornographic Internet Site Use: A Multivariate Regression Analysis of the Predictive Factors of Use and Psychosocial Implications,” *CyberPsychology and Behavior* 12 (2009): 545–550.

14. In a series of interviews and focus groups with 51 participants aged 14–20, researchers found what they called a “pornographic script” for appearance and sexual performance that was reinforced by pornography use, which set unrealistic expectations for both the males and females in the study. Males expressed that they felt insecure about their ability to perform sexually, while the women expressed insecurities about their physical appearance.

● L. Lofgren-Martenson and S. Mansson, “Lust, Love, and Life: A Qualitative Study of Swedish Adolescents’ Perceptions and Experiences with Pornography,” *Journal of Sex Research* 47 (2010): 568–579.

15. “Examining both how often sexually explicit material was used and how many types of SEM were used, this study also suggested that these two variables were associated in interesting ways with aspects of participants’ sexual behaviors, satisfaction, and preferences, lending support to the hypothesis that SEM use plays a role in the cultivation of sexual scripts during young adults’ sexual development.”

● Elizabeth M. Morgan, “Associations between Young Adults’ Use of Sexually Explicit Materials and Their Sexual Preferences, Behaviors, and Satisfaction,” *Journal of Sex Research* 48, no. 6 (2011): 520–530.

16. “Porn creates a sense of what is normal, what is expected, and that we ought to consent to ways of doing sex that are not just derived from the interaction between those individuals engaged in the experience, and what they would like to be doing. We’re hearing many stories from young women about their partners initiating the signature sex acts from pornography and of the women struggling with both wanting to please their partners, wanting to be accommodating and generous in their sexuality, but not wanting to engage in those sex acts.”

● Maree Crabbe, expert in sexuality and sexual health among young people (as quoted in Michael Short, “The Problem with Porn,” *The Sydney Morning Herald*, May 22, 2013).

17. Using pornography’s unrealistic portrayals to learn about gender roles is associated with reduced sexual and relational satisfaction.

● Joan Shapiro and Lee Kroeger, “Is Life Just a Romantic Novel? The Relationship Between Attitudes About Intimate Relationships and the Popular Media,” *American Journal of Family Therapy* 19, no. 3 (September 1991): 226–36.

18. “Not only younger children, but even young teenagers are generally not sophisticated enough to differentiate between fantasy and reality. They learn direct lessons from pornography, with no filter, and with no concept of exaggeration, irony, or affect. They learn what women supposedly look like, how they should act, and what they are supposed to do. They learn what women ‘want’ and how men can give it to them. Watching pornography, boys and girls learn that women always want sex and that sex is divorced from relationships. They learn that men can have whomever they want and that women will respond the way men want them to. They learn that anal sex is the norm and instant female orgasm is to be expected. And they absorb these lessons avidly, emulating people they perceive to be role models.”

● Pamela Paul, “From Pornography to Porno to Porn: How Porn Became the Norm,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

19. “This may be pornography’s most insidious influence; namely, the acceptance of the attitudes (some obvious, some more subtle) expressed in pornography. Pornographic depictions of sexuality distort the truth about desires of women and children, and legitimize men’s sense of entitlement, and use of force, violence, and degrading acts by the male actors.”

● William L. Marshall, “Revisiting the Use of Pornography by Sexual Offenders: Implications for Theory and Practice,” *Journal of Sexual Aggression* 6, nos. 1 and 2 (2000): 67.

20. In a study of Internet users, researchers found that those who had not engaged in Internet sexual experiences were much more likely to say pornography was an act of infidelity compared with pornography users.

● Monica Therese Whitty, “Pushing the Wrong Buttons: Men’s and Women’s Attitudes Toward Online and Offline Infidelity,” *CyberPsychology and Behavior* 6, no. 6 (2003): 569–79.

21. Frequent exposure to porn is associated with diminished trust in intimate partners, increased risk of developing a negative body image, especially for women, acceptance of promiscuity as a normal state of interaction, beginning to view love in a cynical manner, belief that superior sexual satisfaction is attainable without having affection for one’s partner, belief that marriage is sexually confining, and belief that raising children and having a family is an unattractive prospect.

● Dolf Zillmann, “Influence of Unrestrained Access to Erotica on Adolescents’ and Young Adults’ Dispositions Toward Sexuality,” *Journal of Adolescent Health* 27, no. 2 (2000): 41–44.

22. “In other words, pornography has the ability not only to teach social attitudes and behaviors, but also to give permission to engage in them. Permission-giving beliefs become releasers of behavior.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

Heart

2.2

How Pornography Warps Expectations of Sex

1. “Sexual script model. ... Scripts are memory structures that provide information and rules for behaving. They evolve over time and with repeated exposure to a set of stimuli or with repetition of particular behaviors.¹ For example, people develop scripts for how to behave in a public library, a football game, or when stopped by a police officer for speeding. Pornography’s scripts emphasize culturally accepted beauty standards, the idea of the constant sexual availability and insatiable sexual appetites of men and women, the excitement of sexual novelty, and sex outside of a primary romantic relationship.² It rarely includes affection, intimate relationships, or expressions of love, and it often involves men ejaculating outside of a woman’s body while she expresses orgasmic pleasure. Frequently, pornography lacks foreplay and afterplay: The focus on sexual penetration is so pervasive that caressing, kissing, or cuddling are minimized or eliminated.³ As scripts for sexual intimacy with a real life partner, these nearly always fall short.

● Ana J. Bridges, “Pornography’s Effects on Interpersonal Relationships,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 89–110. Princeton, New Jersey: Witherspoon Institute, 2010.

1—Ramesh Lakshmi-Ratan and Easwar Iyer, “Similarity Analysis of Cognitive Scripts,” *Journal of the Academy of Marketing Science* 16, no. 2 (1988): 36–42.

2—Hans-Bernd Brosius et al., “Exploring the Social and Sexual ‘Reality’ of Contemporary Pornography,” *Journal of Sex Research* 30, no. 2 (1993): 161–70.

3—Donald L. Mosher and Paula Maclan, “College Men and Women Respond to X-Rated Videos Intended for Male or Female Audiences: Gender and Sexual Scripts,” *Journal of Sex Research* 31, no. 2 (1994): 99–112.

2. “The type of sexuality depicted [in pornography] often has more to do with violence, extreme fetishes, and mutual degradation than with fun, much less with sexual or emotional connection. For those who haven’t double-clicked: These aren’t airbrushed photos of the girl next door or images of coupling; they are vivid scenes of crying women enduring aggressive multiple penetration.”

● Pamela Paul, “From Pornography to Porno to Porn: How Porn Became the Norm,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

3. “Sex, in pornography, is a commercialized product, devoid of emotion, stripped of humanity, an essentially empty experience.”

● Pamela Paul, “From Pornography to Porno to Porn: How Porn Became the Norm,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

4. “[Massachusetts-based sex therapist Aline Zolbrod] believes many young men today are terrible lovers because they learn about sexuality from pornography. ‘In real life, sexually-speaking, women are slow cookers and men are microwaves. But in pornography, all a man does is touch a woman and she’s howling in delight. Today, pornography is so widely used by young men, they learn these falsehoods. There’s good evidence that the more porn men watch, the less satisfied they are with their partner’s looks and sexual performance.’”

● Pamela Paul, “From Pornography to Porno to Porn: How Porn Became the Norm,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

5. “Judith Coche, a clinical psychologist who runs the Coche Center in Philadelphia and teaches psychiatry at the University of Pennsylvania ... [says] ‘pornography is so often tied into videogame culture and insinuates itself even into non-pornographic areas of the web. It’s very hard for a twelve-year-old boy to avoid.’ As a result, boys are learning to sexually cue to a computer, rather than to human beings.”

● Pamela Paul, “From Pornography to Porno to Porn: How Porn Became the Norm,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

6. “Kids today are going to run into pornography online, not erotica. ... They’re getting a very bad model. Pornography doesn’t show how a real couple negotiates conflict or creates intimacy. ... [For girls, it’s a] brutal way to be introduced to sexuality.”

● Aline Zolbrod (as quoted in Pamela Paul, “From Pornography to Porno to Porn: How Porn Became the Norm,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

7. “It’s sad that boys who are initiated to sex through these images become indoctrinated in a way that can potentially stay with them for the rest of their lives. ... Boys learn that you have sex in spite of your feelings, not because of your feelings. Meanwhile, girls are taught that you don’t have intimacy without relationships.”

● Gary Brooks (as quoted in Pamela Paul, “From Pornography to Porno to Porn: How Porn Became the Norm,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

8. “Many of these boys are very smart and academically successful; a lot of computer geeks are the ones who get drawn in. It affects how they develop sexually. Think about a twelve-year-old boy looking at *Playboy* magazine. When you’re talking about Internet pornography, you can multiply that effect by the relative size of the Internet itself.”

● Mark Schwartz, marriage and family therapist and former clinical director at Masters and Johnson Institute, as quoted in Pamela Paul, “From Pornography to Porno to Porn: How Porn Became the Norm,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

9. Frequent exposure to pornography is associated with believing it’s possible to have high sexual satisfaction without having affection for one’s partner.

● Dolf Zillmann, “Influence of Unrestrained Access to Erotica on Adolescents’ and Young Adults’ Dispositions Toward Sexuality,” *Journal of Adolescent Health* 27, no. 2 (2000): 41–44.

10. “There is agreement in the literature suggesting that adolescents can learn sexual behaviors from observing the behaviors depicted in sexually explicit materials.”

● Eric W. Owens, Richard J. Behun, Jill C. Manning, and Rory C. Reid, “The Impact of Internet Pornography on Adolescents: A Review of the Research,” *Sexual Addiction and Compulsivity* 19 (2012): 99–122.

11. Since adolescents often don't have "real-life experiences with sexual partners ... they are especially susceptible to internalization of distorted pornographic images of human sexuality and may act accordingly."

● J. A. Hunter, A. J. Figueredo, and N. M. Malamuth, "Developmental Pathways into Social and Sexual Deviance," *Journal of Family Violence* 25 (2010): 141–148.

12. "Analyses revealed that both [pornography] viewing frequency and the number of [pornography] types viewed uniquely predicted all three sexual preference variables. These robust relationships ... indicate that heavy consumers of [pornography] hold similar sexual preferences to those frequently portrayed in [pornography]. ... Interestingly, however, the average age of first [pornography] use proceeded the average age of first sexual intercourse by two to four years, suggesting that the majority of participants likely engaged with [pornography] prior to developing preferences based on their own sexual experiences. In sum, the findings from this study reveal that multiple dimensions of [pornography] use, including frequency of use and number of types used, share significant associations with young adults' sexual behaviors, sexual and relationship satisfaction, and sexual preferences."

● Elizabeth M. Morgan, "Associations between Young Adults' Use of Sexually Explicit Materials and Their Sexual Preferences, Behaviors, and Satisfaction," *Journal of Sex Research* 48, no. 6 (2011): 520–530.

13. "This combination reveals that, despite having a well-defined set of preferences and experiences, individuals frequently using [pornography] are nonetheless less satisfied with these experiences. This difference could reflect a disconnect between their preferences and their actual sexual and relationship experiences, suggesting that [pornography] viewing may indeed set up young adults to expect unrealistic sexual encounters."

● Elizabeth M. Morgan, "Associations between Young Adults' Use of Sexually Explicit Materials and Their Sexual Preferences, Behaviors, and Satisfaction," *Journal of Sex Research* 48, no. 6 (2011): 520–530.

14. Adult exposure to pornography is connected with users trying to get partners to act out scenes from pornographic films.

● E. Cramer and J. McFarlane, "Pornography and Abuse of Women," *Public Health Nursing* 11, no. 4 (1994): 268–272.

15. Adult exposure to pornography is connected with users increasing their estimates of how often people have violent sex.

● Zillmann and Bryant, "Effects of Massive Exposure to Pornography" in *Pornography and Sexual Aggression*, Eds. Neil M. Malamuth and Edward Donnerstein (New York: Academic Press, 1984).

16. Adult exposure to pornography is associated with users increasing their estimates of how often people engage in group sex.

● Zillmann and Bryant, "Effects of Massive Exposure to Pornography" in *Pornography and Sexual Aggression*, Eds. Neil M. Malamuth and Edward Donnerstein (New York: Academic Press, 1984).

17. In a study comparing male undergraduate students' sexual beliefs, researchers found that "participants who viewed music videos of highly objectified female artists reported more adversarial sexual beliefs, more acceptance of interpersonal violence, and, at a level of marginal significance, more negative attitudes about sexual harassment than participants assigned to low-sexually objectifying music videos by the same female artists."

● Jennifer Stevens Aubrey, K. Megan Hopper, and Wanjiru G. Mbure, "Check That Body! The Effects of Sexually Objectifying Music Videos on College Men's Sexual Beliefs," *Journal of Broadcasting and Electronic Media* 55, no. 3 (2011): 360–379.

18. In a survey of 487 college men aged 18–29 in the United States, researchers found that "the more pornography a man watches, the more likely he was to use it during sex, request particular pornographic sex acts of his partner, deliberately conjure images of pornography during sex to maintain arousal, and have concerns over his own sexual performance and body image. Further, higher pornography use was negatively associated with enjoying sexually intimate behaviors with a partner. We conclude that pornography provides a powerful heuristic model which is implicated in men's expectations and behaviors during sexual encounters."

● Chyng Sun, Ana Bridges, Jennifer Johnason, and Matt Ezzell, "Pornography and the Male Sexual Script: An Analysis of Consumption and Sexual Relations," *Archives of Sexual Behavior*, published online December 3, 2014.

Heart

2.3

How Pornography Impacts Partner's Mental & Emotional Health

1. "Many women ... find themselves constantly trying to measure up to the bodies and sexual performance of the women their men watch online and onscreen. They fear that they've lost the ability to turn their men on anymore—and quite often, they have."

● Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

2. "Pornography influences everything from how teens speak of and frame sexuality, to why and how they pierce certain body parts, to what they expect to give and receive in intimate relationships. I am also witnessing more female adolescents tolerating emotional, physical, and sexual abuse in dating relationships, feeling pressure to make out with females as a way to arouse young men, looking at or producing pornography so that their boyfriends will think they are 'open-minded' and 'hot,' and normalizing sexual abuse done to them because they see the same acts eroticized in pornography—after all, how bad can it be if the larger culture around you finds abusive and demeaning acts a turn-on?"

● Jill C. Manning, "The Impact of Pornography on Women: Social Science Findings and Clinical Observations," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 69–88. Princeton, New Jersey: Witherspoon Institute, 2010.

3. "Many young women I have worked with dislike the fact that young men consume pornography, but they are conflicted about how to reject their behavior while at the same time trying to garner and compete for their romantic attention. Young women used to have allure and mystery on their side. Now, young men are inundated with airbrushed images of naked and sexually engaged females that dramatically alter the flirtatious dance between the sexes."

● Jill C. Manning, "The Impact of Pornography on Women: Social Science Findings and Clinical Observations," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 69–88. Princeton, New Jersey: Witherspoon Institute, 2010.

4. "To add insult to injury, many wives are directly or indirectly blamed for their husband's pornography use by her spouse, family, or confidant. Many women I have worked with clinically describe stinging insinuations that the marriage must be unsatisfying, that she has 'let herself go' and is no longer as physically attractive as she once was, that she is closed-minded to new sexual experiences, or that she is overly focused on her children and not attending to her husband's needs. Too often the woman's experience of the marital relationship and the historical context of his pornography habit become conveniently dismissed as irrelevant by those seeking to assign blame to her."

● Jill C. Manning, "The Impact of Pornography on Women: Social Science Findings and Clinical Observations," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 69–88. Princeton, New Jersey: Witherspoon Institute, 2010.

5. Studies have found that women who learn of a husband's consumption of porn and/or online sexual activity through either discovery or disclosure commonly report feelings of betrayal, loss, mistrust, devastation, and anger.

● Ana J. Bridges, R. M. Bergner, and M. Hesson-McInnis, "Romantic Partners' Use of Pornography: Its Significance for Women," *Journal of Sex and Marital Therapy* 29, no. 1 (2003): 1–14; Jill C. Manning, "A Qualitative Study of the Supports Women Find Most Beneficial When Dealing with a Spouse's Sexually Addictive or Compulsive Behaviors," unpublished doctoral dissertation (Provo, Utah: Brigham Young University, 2006); Schneider, "Effects of Cybersex Addiction on the Family."

6. Some researchers have found that partners in committed relationships who learn that their partner is compulsively using pornography or engages in other sexually addictive behaviors can show signs of post-traumatic stress disorder.

● Barbara A. Steffens and Robyn L. Rennie, "The Traumatic Nature of Disclosure for Wives of Sexual Addicts," *Sexual Addiction & Compulsivity* 13, nos. 2 and 3 (2006): 247–67.

7. Many women who learn of a partner's compulsive pornography use or sexual addiction behavior experience psychological effects, such as fatigue, changes in appetite and libido, and other signs of anxiety and depression, such as suicidal tendencies.

● Jill C. Manning, "A Qualitative Study of the Supports Women Find Most Beneficial"; M. Lynn Wildmon-White, and J. Scott Young, "Family-of-Origin Characteristics Among Women Married to Sexually Addicted Men," *Sexual Addiction & Compulsivity* 9, no. 4 (2002): 263–73.

8. "Some of the most significant impacts on women include increased risk of marital distress, separation, and divorce; increased isolation; and increased risk of abuse."

● Jill C. Manning, "The Impact of Pornography on Women: Social Science Findings and Clinical Observations," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 69–88. Princeton, New Jersey: Witherspoon Institute, 2010.

9. Wives of users tend to feel lonely and isolated, often due to getting caught up in keeping their husband's secret as part of their effort to cope with the problem.

● Judith C. Heaton Matheny, "Strategies for Assessment and Early Treatment with Sexually Addicted Families," *Sexual Addiction & Compulsivity* 5, no. 1 (1998): 27–48.

10. Women often feel that they won't be understood if they share their struggle over the issue of a partner's pornography use with others; many also fear being ridiculed or other consequences of sharing.

● Wildmon-White and Young, "Family-of-Origin Characteristics Among Women Married to Sexually Addicted Men."

11. Adult exposure to pornography is connected with users trying to get partners to act out scenes from pornographic films.

● E. Cramer and J. McFarlane, "Pornography and Abuse of Women," *Public Health Nursing* 11, no. 4 (1994): 268–272.

12. In a study of wives of sex addicts for whom pornography use was an issue in their relationship with their spouse, 68.18 percent had experienced a form of isolation (emotional, spiritual, physical, or social) during the course of dealing with the problem.¹ “What was interesting was that many of the women reported having strong networks of support and family ties, but still described being isolated due to the shameful nature of this particular problem. This suggests women who are high-functioning and well-supported in other areas of life may still be at risk for isolation, delayed help-seeking behavior, and/or prolonged psychological struggle because the problem is so shaming and public awareness of it is in its infancy. In addition, isolation can put women at risk for heightened psychological stress and turmoil if they are used to receiving support in other areas of life, thereby making this population more vulnerable overall.”²

● Jill C. Manning, “The Impact of Pornography on Women: Social Science Findings and Clinical Observations,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 69–88. Princeton, New Jersey: Witherspoon Institute, 2010.

1—Jill C. Manning, “A Qualitative Study of the Supports Women Find Most Beneficial When Dealing with a Spouse's Sexually Addictive or Compulsive Behaviors,” unpublished doctoral dissertation (Provo, Utah: Brigham Young University, 2006).

13. In a study conducted using college students, males were randomly assigned to watch one of three films: one of erotica, one of nonsexual news coverage of war, or one of pornography. After the films they were invited to attend a seemingly separate experiment in which they were paired with a female and asked to work on a problem-solving task. They were filmed while solving the problem, and researchers coded the taped interactions for eye gaze, interruptions, touch, unwanted sexual remarks, and disregard of a partner's suggestions. Those participants who have viewed the sexually explicit films (erotica and pornography) exhibited more dominant behaviors, touched their female partners for longer periods of time, and ignored their partner's ideas and suggestions more often than those who had watched the news coverage video. Men who had viewed the pornography video interrupted their partners more often and showed more anxious behaviors than those who had watched one of the other two videos. The researchers also looked at the female partners' behaviors and found that even though the women were unaware that their partners had watched the films, their behavior correlated highly with their male partner's behavior. Women who were partnered with men who had viewed either of the sexually explicit films exhibited similar levels of anxiety, physical proximity, partner touch, and gazing as their male partners, suggesting that women partners of porn users can be negatively affected by their partner's use of pornography even when they aren't aware of said use.

● Anthony Mulac, Laura Jansma, and Daniel Linz, “Men's Behavior Toward Women After Viewing Sexually Explicit Films: Degradation Makes a Difference,” *Communication Monographs* 69, no. 4 (December 2002): 311–28.

14. For many partners, learning of their partner's porn use is a traumatic event.

● Raymond Bergner and Ana J. Bridges, “The Significance of Heavy Pornography Involvement for Romantic Partners: Research and Clinical Implications,” *Sex and Marital Therapy* 28, no. 3 (May 2002): 193–206.

15. Wives of pornography users commonly report that their partners ask them to reenact pornographic scenes, consume pornography with said partner, or pressure or coerce them into sexual acts they find uncomfortable or demeaning.

● Mark Laaser, *Faithful and True: Sexual Integrity in a Fallen World* (Grand Rapids, Mich.: Zondervan, 1996); Eunjung Ryu, “Spousal Use of Pornography and Its Clinical Significance for Asian-American Women: Korean Women as an Illustration,” *Journal of Feminist Family Therapy* 16, no. 4 (2004): 75–89; Janet Hinson Shope, “When Words Are Not Enough: The Search for the Effect of Pornography on Abused Women,” *Violence Against Women* 10, no. 1 (2004): 56–72.

16. When researchers interviewed partners of “sexual addicts” (91 females, 3 males) to learn how they were being impacted by the partners' use, subjects reported feelings of hurt, betrayal, lowered self-esteem, mistrust, decreased intimacy, anger, feelings of being unattractive and objectified, feeling their partners had less interest in sexual contact, pressure from the partner to enact things from online fantasy, and feeling like they could not measure up to the women seen online.

● Jennifer P. Schneider, “Effects of Cybersex Addiction on the Family: Results of a Survey,” *Sexual Addiction & Compulsivity* 7, nos. 1 and 2 (2000): 31–58.

17. Researches found that women with the most frequent, repeated exposure to pornography and who found it difficult to avoid in their daily lives were the most negative about it. They expressed that it gave unrealistic beauty standards and felt the women in the pornography were being victimized and violated. Over half the women in the study were involved with men who used pornography and most felt negatively about that use. They felt rejected by the use of porn and reported that it was negatively impacting the relationship. They also believed that the ways they were treated by their partners were a result of the pornography the partner used. Even the women who held neutral or slightly positive view of pornography (7 percent of the sample) felt it created unrealistic standards of how women should look and behave sexually, and they reported that it hurt their self esteem or that their partner's use of it was emotionally painful.

● Charlene Y. Senn, “Women's Multiple Perspectives and Experiences with Pornography,” *Psychology of Women Quarterly* 17, no. 3 (1993): 319–41.

18. Frequent exposure to pornography is associated with greater risk of developing a negative body image, especially for women.

● Siegel, 1997; Dolf Zillmann, “Influence of Unrestrained Access to Erotica on Adolescents' and Young Adults' Dispositions Toward Sexuality,” *Journal of Adolescent Health* 27, no. 2 (2000): 41–44.

19. “One study examined conversations with women who identified their partners as pornography ‘addicts,’ were quite upset over this use, and were seeking help from an online, anonymous, public forum. The study found that the woman's partner's use of pornography was associated with her having numerous devastating interpretations of her role in his use, his moral character, and the state of their romantic relationship. Themes of the women's self-descriptions included seeing herself as the reason for her

partner's use ('I am not attractive enough,' 'I should be more available'), seeing the partner as uncaring or selfish ('If he loved me, he wouldn't hurt me this way,' 'I've told him it bothers me and he still uses pornography; he must not care about me'), and viewing the relationship as a farce ('We pretend like everything is fine, but really our relationship is sick and unhealthy')."

● Ana J. Bridges, "Pornography's Effects on Interpersonal Relationships," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 89–110. Princeton, New Jersey: Witherspoon Institute, 2010.

20. In a web-based survey of 100 women whose partners used pornography, nearly a third reported moderate to high levels of distress about their partner's use. They felt their partners were not interested in making love to them, but that when they did have sex the partner was instead picturing the women seen in pornography. They felt their partners were less trustworthy, usually because the user would keep their use of pornography a secret even when the female partner did not object to it. Nearly 75 percent reported that the partner's use negatively affected their own self-esteem. Some felt that the pornography use was an indication that they had failed their partners sexually.

● Ana J. Bridges, R. M. Bergner, and M. Hesson-McInnis, "Romantic Partners' Use of Pornography: Its Significance for Women," *Journal of Sex and Marital Therapy* 29, no. 1 (2003): 1–14.

21. "Porn creates a sense of what is normal, what is expected, and that we ought to consent to ways of doing sex that are not just derived from the interaction between those individuals engaged in the experience, and what they would like to be doing. We're hearing many stories from young women about their partners initiating the signature sex acts from pornography and of the women struggling with both wanting to please their partners, wanting to be accommodating and generous in their sexuality, but not wanting to engage in those sex acts."

● Maree Crabbe, expert in sexuality and sexual health among young people (as quoted in Michael Short, "The Problem with Porn," *The Sydney Morning Herald*, May 22, 2013).

22. A survey of female college students found that women who perceived their boyfriends' use of porn to be problematic experienced diminished self-esteem, poorer relationship quality, and lower sexual satisfaction.

● Destin Stewart and Dawn Szymanski, "Young Adult Women's Reports of Their Male Romantic Partner's Pornography Use as a Correlate of their Psychological distress, relationship quality, and Sexual Satisfaction," *Sex Roles* 67 (2012): 257–271.

23. "The young women who talk to me on campuses about the effect of pornography on their intimate lives speak of feeling that they can never measure up, that they can never ask for what they want; and that if they do not offer what porn offers, they cannot expect to hold a guy."

● Naomi Wolf, "The Porn Myth," *New York Magazine*, http://nymag.com/nymetro/news/trends/n_9437/

Heart

2.4

How Pornography Changes Perceptions of Partners

1. Exposure to porn causes men to rate their female partner as less attractive than they would if they had not been exposed to porn.

● James B. Weaver, Jonathan L. Masland, and Dolf Zillmann, "Effects of Erotica on Young Men's Aesthetic Perception of Their Female Sexual Partners," *Perceptual and Motor Skills* 58 (1984): 929-930.

2. After being exposed to pornography, men are less satisfied with their partners' attractiveness, sexual performance, and level of affection. They also express a greater desire for sex without emotional involvement.

● Dolf Zillmann and Jennings Bryant, "Pornography's Impact on Sexual Satisfaction," *Journal of Applied Social Psychology* 18, no. 5 (1988): 438-53.

3. "Even short, experimental situations involving a one-time exposure to popular pornographic depictions create negative consequences for males' evaluations of their romantic partner's attractiveness and how in love with them they feel. Compared with men who watched a neutral film, men who watched a pornographic film subsequently rated themselves as less in love with their romantic partner."

● Ana J. Bridges, "Pornography's Effects on Interpersonal Relationships," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 89-110. Princeton, New Jersey: Witherspoon Institute, 2010.

4. In a two-part study, researchers exposed subjects to pornographic pictures of female centerfold models, and discovered that such exposure significantly lowered both men's and women's estimations about the attractiveness of average-looking persons, regardless of whether or not the subject found the pictures to be pleasant. In the second part of the study, pornographic centerfolds of male models were also used. After viewing the opposite sex models, subjects rated how sexually attractive they felt their partner was. Men who had seen the pornographic photos rated their female partner's attractiveness and scores on Rubin's Love Scale significantly lower compared to men who had not seen the pornographic photos. Women's ratings did not show the same effect. ¹ "This supports the notion that in this culture men find physical attractiveness to be more central to their sexual response than women, and that consumption of popular pornographic magazines may adversely affect males' commitments to monogamous relationships. It also validates women's experiences that they are being unfavorably compared with the impossible ideal portrayed in pornography and erotica." ²

● Ana J. Bridges, "Pornography's Effects on Interpersonal Relationships," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 89-110. Princeton, New Jersey: Witherspoon Institute, 2010.
¹—Raymond Bergner and Ana J. Bridges, "The Significance of Heavy Pornography Involvement for Romantic Partners: Research and Clinical Implications," *Sex and Marital Therapy* 28, no. 3 (May 2002): 193-206.

5. In one study, participants viewed either non-violent pornographic videos or sexually innocuous comic acts from television over a six-week period. Researchers found that both men and women who had been repeatedly exposed to pornography significantly decreased their sexual satisfaction in their partner's displays of affection, appearance, sexual curiosity, and actual sexual performance. However, non-sexual items of satisfaction such as general life happiness, satisfaction in non-romantic relationships, etc., had not changed, demonstrating that the reduced satisfaction was specific to the subject's partner, not a result of a general decline in satisfaction.

● Dolf Zillmann and Jennings Bryant, "Pornography's Impact on Sexual Satisfaction," *Journal of Applied Social Psychology* 18, no. 5 (1988): 438-53.

6. Adult exposure to pornography is connected with rating one's partner as less attractive.

● J. Weaver, J. L. Masland, and D. Zillmann, "Effect of Erotica on Young Men's Aesthetic Perception of Their Female Sexual Partners," *Perceptual and Motor Skills* 58 (1984): 929-930; D. Zillmann and J. Bryant, "Pornography's Impact on Sexual Satisfaction," *Journal of Applied Social Psychology* 18 (1988): 438-453.

7. Adult exposure to pornography is connected with the user being less satisfied with their partner's sexual performance.

● D. Zillmann and J. Bryant, "Pornography's Impact on Sexual Satisfaction," *Journal of Applied Social Psychology* 18 (1988): 438-453.

8. "Adolescents' exposure to [sexually explicit Internet material] was both a cause and a consequence of their beliefs that women are sex objects. More frequent exposure to [sexually explicit Internet material] caused stronger beliefs that women are sex objects. At the same time, stronger beliefs that women are sex objects led to more frequent exposure to [sexually explicit Internet material], albeit only for male adolescents."

● Jochen Peter and Patti M. Valkenburg, "Adolescents' Exposure to Sexually Explicit Internet Material and Notions of Women as Sex Objects: Assessing Causality and Underlying Processes," *Journal of Communication* 59 (2009): 407-433.

9. "Men who watch a lot of porn seem to focus more intensely on the visual, even when in bed with a woman, asking her to emulate the look and moves of porn stars."

● Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3-20. Princeton, New Jersey: Witherspoon Institute, 2010.

10. According to a nationally representative poll released in 2004, six out of ten women believe pornography affects how men expect them to look and act. One in seven women believes pornography doesn't change men's expectations of women.

● Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3-20. Princeton, New Jersey: Witherspoon Institute, 2010.

11. A 2002 study looking at heterosexual men who used pornography found that the more pornography the man consumed, the more likely he was to describe women in sexualized and stereotypically feminine ways; to approve of women in traditionally female occupations; and to value women who are more submissive and subordinate to men.

● Ryan J. Burns, "Male Internet Pornography Consumers' Perception of Women and Endorsement of Traditional Female Gender Roles" (Austin, Tex.: Department of Communication Studies, University of Texas, 2002), p. 11.

12. Lexington, Massachusetts-based psychologist and sex therapist Aline Zoldbrod says "The majority of porn out there is degrading to women and it's only gotten worse. The women are plasticized; there's no longer as much diversity or naturalism as there was two decades ago."

● Pamela Paul, *Pornified: How Pornography Is Transforming Our Lives, Our Relationships, and Our Families*. New York: Henry Holt and Co, p. 145.

13. In a series of interviews with researchers, one female adolescent described a common theme in pornography saying, "Well, the girl should be small, thin, and you know ... inferior ... while the guy should be muscular and superior."

● E. Haggstrom-Nordin, J. Sandberg, U. Hanson, and T. Tyden, "'It's Everywhere!' Young Swedish People's Thoughts and Reflections about Pornography," *Scandinavian Journal of Caring Science* 20 (2006): 386–393.

Heart

2.5

How Pornography Influences Acquired Sexual Tastes

1. “The human libido is not a hardwired, invariable biological urge but can be curiously fickle, easily altered by our psychology and the history of our sexual encounters.”

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

2. “Sexual taste is obviously influenced by culture and experience and is often acquired and then wired into the brain. ‘Acquired tastes’ are by definition learned, unlike ‘tastes,’ which are inborn. ... Many tastes we think ‘natural’ are acquired through learning and become ‘second nature’ to us. We are unable to distinguish our ‘second nature’ from our ‘original nature’ because our neuroplastic brains, once rewired, develop a new nature, every bit as biological as our original.”

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

3. “Softcore pornography’s influence is now most profound because, now that it is no longer hidden, it influences young people with little sexual experience and especially plastic minds, in the process of forming their sexual tastes and desires.”

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

4. Research indicates that our brains must unlearn existing neuronal connections to make room for new neuronal connections to be made and strengthened in our networks.

● E.S. Rosenzweig, C. A. Barnes, and B. L. McNaughton, “Making Room for New Memories,” *Nature Neuroscience* 5, no. 1 (2002): 6-8.

5. “Freeman argues that massive plastic brain reorganization—far more massive than in normal learning or unlearning—becomes possible because of a brain neuromodulator. Neuromodulators are different from neurotransmitters. While neurotransmitters are released in the synapses to excite or inhibit neurons, neuromodulators enhance or diminish the overall effectiveness of the synaptic connections and bring about enduring change. Freeman believes that when we commit in love, the brain neuromodulator oxytocin is released, allowing existing neuronal connections to melt away so that changes on a large scale can follow.”

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

6. Because oxytocin has the ability to erase learned behavior, some scientists call it an amnesic hormone.

● T. R. Insel. “Oxytocin—a Neuropeptide for Affiliation: Evidence from Behavioral, Receptor, Autoradiographic, and Comparative Studies.” *Psychoneuroendocrinology* 19, no. 1 (1992): 85-117, especially 86.

7. Freeman’s research suggests that oxytocin causes existing neuronal connections that underlie attachments to melt away, allowing new attachments to be formed, making it possible for people to learn new patterns of behavior.

● W. J. Freeman, *Societies of Brains: A Study in the Neuroscience of Love and Hate*. Hillsdale, N.J.: Lawrence Erlbaum Associates, 122-23; W. J. Freeman, *How Brains Make Up Their Minds*, London: Weidenfeld & Nicolson (1999): 160-161.

8. “Freeman’s theory helps to explain how love and plasticity affect each other. Plasticity allows us to develop brains so unique—in response to our individual life experiences—that it is often hard to see the world as others do, to want what they want, or to cooperate. But the successful reproduction of our species requires cooperation. What nature provides, in a neuromodulator like oxytocin, is the ability for two brains in love to go through a period of heightened plasticity, allowing them to mold to each other and shape each other’s intentions and perceptions. The brain for Freeman is fundamentally an organ of socialization, and so there must be a mechanism that, from time to time, undoes our tendency to become overly individualized, overly self-involved, and too self-centered.”

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.) [Note: Porn, however, emphasizes self-centeredness, selfishness, and abuse of partner—the opposite of what love would teach.

9. “Sexual deviance can be learned. Some men may initially look at deviant pornography out of curiosity. Some may move up to harder kinds because softer material no longer arouses them. Either way they may learn deviant beliefs and behavior from it. Things that used to lead to disgust now seem less unusual and more common and even normal, and over time, come to seem sexy.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

10. Frequent exposure to pornography is associated with less interest in having a sexually exclusive relationship with a partner.

● Dolf Zillmann, “Influence of Unrestrained Access to Erotica on Adolescents’ and Young Adults’ Dispositions Toward Sexuality,” *Journal of Adolescent Health* 27, no. 2 (2000): 41-44, as quoted in A, 76-77.

11. “There is some evidence that males’ consumption of pornography is informing increased interest in, demand for, and participation in particular sexual practices such as anal intercourse and extra-vaginal ejaculation, both of which are pornographic staples.”

● Michael Flood, “Young Men Using Pornography,” in *Everyday Pornography*, edited by Karen Boyle. New York: Routledge, 2010.

12. Five studies conducted on Swedish youth found that young men who regularly consume pornography are more likely to have had anal intercourse with a girl and to have tried acts seen in pornography, and that girls who have seen pornography are more likely to have had anal sex. Most of the young women in the studies did not enjoy anal intercourse and did not want to do it again.

● Tyden et al, 2001, Rogala and Tyden 2003, Tyden and Togala 2004; Haggstrom-Nordin et al 2005, Johansson and Hammaren 2007.

13. “Results suggest that both the frequency of [pornography] viewing and having a diverse [sexually-explicit] media diet are uniquely and significantly associated with sexual behavior.”

● Elizabeth M. Morgan, “Associations between Young Adults’ Use of Sexually Explicit Materials and Their Sexual Preferences, Behaviors, and Satisfaction,” *Journal of Sex Research* 48, no. 6 (2011): 520–530.

14. Higher frequency of viewing pornographic videos is associated with higher rates of having anal sex, group sex, and hook-ups.

● Elisabet Häggström-Nordin, Tanja Tydén, and Ulf Hanson, “Associations Between Pornography Consumption and Sexual Practices Among Adolescents in Sweden,” *International Journal of STD & AIDS* 16, no. 2 (2005): 102–7.

15. Researchers have found that in 98 percent of pornographic movies studied a man ejaculates on the body, face, or in the mouth of a women.

● H.-B. Brosius, J. B. Weaver, and J. F. Staab, “Exploring the Social and Sexual Reality of Contemporary Pornography,” *Journal of Sex Research* 30 (1993): 161–170.

16. Adolescents report that pornography influences adolescent sexual behavior.

● Christina Rogala and Tanja Tydén, “Does Pornography Influence Young Women’s Sexual Behavior?” *Women’s Health Issues* 13, no. 1 (2003): 39–43; Elisabet Häggström-Nordin, Tanja Tydén, and Ulf Hanson, “Associations Between Pornography Consumption and Sexual Practices Among Adolescents in Sweden,” *International Journal of STD & AIDS* 16, no. 2 (2005): 102–7.

Heart

2.6

How Pornography Impacts Sexual Intimacy

1. In a survey of heterosexual couples, couples in which men reported high use of pornography also reported significantly lower sexual satisfaction than couples where the male used less pornography.

● Ana J. Bridges, "Pornography's Effects on Interpersonal Relationships," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 89–110. Princeton, New Jersey: Witherspoon Institute, 2010.

2. "Very strong experimental evidence demonstrates that pornography can negatively impact sexual satisfaction within a current, heterosexual relationship."

● Ana J. Bridges, "Pornography's Effects on Interpersonal Relationships," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 89–110. Princeton, New Jersey: Witherspoon Institute, 2010.

3. Examining both how often [pornography] was used and how many types of [pornography] were used, this study also suggested that these two variables were associated in interesting ways with aspects of participants' sexual behaviors, satisfaction, and preferences, lending support to the hypothesis that [pornography] use plays a role in the cultivation of sexual scripts during young adults' sexual development."

● Elizabeth M. Morgan, "Associations between Young Adults' Use of Sexually Explicit Materials and Their Sexual Preferences, Behaviors, and Satisfaction," *Journal of Sex Research* 48, no. 6 (2011): 520–530.

4. "Regression results further revealed that [pornography] viewing frequency played a unique role in predicting sexual and relationship satisfaction for college students. Specifically, higher viewing frequency was associated with less sexual and relationship satisfaction when controlling for gender, religiosity, dating status and the number of [pornography] types viewed. The number of [pornography] types viewed was not associated with either satisfaction variable. ... What is also noteworthy is that frequency of [pornography] use was predictive even when controlling for dating status which understandably was highly predictive of sexual and relationship satisfaction."

● Elizabeth M. Morgan, "Associations between Young Adults' Use of Sexually Explicit Materials and Their Sexual Preferences, Behaviors, and Satisfaction," *Journal of Sex Research* 48, no. 6 (2011): 520–530.

5. "This combination reveals that, despite having a well-defined set of preferences and experiences, individuals frequently using [pornography] are nonetheless less satisfied with these experiences. This difference could reflect a disconnect between their preferences and their actual sexual and relationship experiences, suggesting that [pornography] viewing may indeed set up young adults to expect unrealistic sexual encounters."

● Elizabeth M. Morgan, "Associations between Young Adults' Use of Sexually Explicit Materials and Their Sexual Preferences, Behaviors, and Satisfaction," *Journal of Sex Research* 48, no. 6 (2011): 520–530.

6. Pornography use is associated with decreased sexual satisfaction in couples.

● Steven Stack, Ira Wasserman, and Roger Kern, "Adult Social Bonds and Use of Internet Pornography," *Social Science Quarterly* 85, no. 1 (2004): 75–88.

7. In a survey of 487 college men aged 18–29 in the United States, researchers found that "the more pornography a man watches, the more likely he was to use it during sex, request particular pornographic sex acts of his partner, deliberately conjure images of pornography during sex to maintain arousal, and have concerns over his own sexual performance and body image. Further, higher pornography use was negatively associated with enjoying sexually intimate behaviors with a partner. We conclude that pornography provides a powerful heuristic model which is implicated in men's expectations and behaviors during sexual encounters."

● Chyng Sun, Ana Bridges, Jennifer Johnason, and Matt Ezzell, "Pornography and the Male Sexual Script: An Analysis of Consumption and Sexual Relations," *Archives of Sexual Behavior*, published online December 3, 2014.

8. Using pornography's unrealistic portrayals to learn about gender roles is associated with reduced sexual and relational satisfaction.

● Joan Shapiro and Lee Kroeger, "Is Life Just a Romantic Novel? The Relationship Between Attitudes About Intimate Relationships and the Popular Media," *American Journal of Family Therapy* 19, no. 3 (September 1991): 226–36.

9. "What has been labeled 'pornotopia' tells [men] what joys they might, could and should experience. As pornography features beautiful bodies in youthful, at times acrobatic, sexual interactions during which nothing short of ecstasy is continually expressed, consumers of such entertainment are readily left with the impression that 'others get more' and that whatever they themselves have in their intimate relationship is less than what it should be. This comparison, of which pornography consumers may or may not be fully aware, is bound to foster sexual dissatisfaction or greatly enhance already existing dissatisfaction."

● D. Zillmann, "Pornografie," in *Lehrbuch der Medienpsychologie*, ed. R. Mangold, P. Vorderer, and G. Bente (Göttingen, Germany: Hogrefe Verlag, 2004), pp. 565–85.

10. "Countless men have described to me how, while using pornography, they have lost the ability to relate to or be close to women. They have trouble being turned on by 'real' women, and their sex lives with their girlfriends or wives collapse. ... Men who use pornography say they are losing the ability to relate to, be close to, and achieve orgasm with real women. ... When they are having sex with real women, such men need to conjure images they've viewed in pornography in order to maintain their level of excitement. Other times, they want to focus on their partner, but find their minds filled with pornographic images instead."

● Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

11. “They reported increasing difficulty in being turned on by their actual sexual partners, spouses or girlfriends, though they still considered them objectively attractive. When I asked if this phenomenon had any relationship to viewing pornography, they answered that it initially helped them get more excited during sex but over time had the opposite effect. Now, instead of using their senses to enjoy being in bed, in the present, with their partners, lovemaking increasingly required them to fantasize that they were part of a porn script. Some gently tried to persuade their lovers to act like porn stars, and they were increasingly interested in ‘f***ing’ as opposed to ‘making love.’ Their sexual fantasy lives were increasingly dominated by the scenarios that they had, so to speak, downloaded into their brains, and these new scripts were often more primitive and more violent than their previous sexual fantasies.”

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

12. “‘When they’re with their partner, they lose the ability to be aroused by her positive features,’ explains psychologist Gary Brooks. ‘Many of them then try to re-create the images from porn in their brain while they’re with another person in order to maintain their arousal.’ Yet by doing so, men are no longer mentally with their partner, nor are they able to lose themselves in the moment.”

● Pamela Paul, *Pornified: How Pornography Is Transforming Our Lives, Our Relationships, and Our Families*. New York: Henry Holt and Co, p. 95.

13. “Mark Schwartz, director of the Masters and Johnson Clinic, notes that married couples are contemplating sex with the same person for forty or fifty years. ‘Naturally people think, “Why not add a little salt and pepper?”’ he says. ‘I don’t think fantasy is necessarily dangerous. There’s nothing wrong if it enhances a man’s relationship with his wife. But with pornography, what happens too often is that the man starts making love to a picture rather than to his partner.’”

● Pamela Paul, *Pornified: How Pornography Is Transforming Our Lives, Our Relationships, and Our Families*. New York: Henry Holt and Co, p. 140–141.

Heart

2.7

How Pornography Impacts Relationships & Families

1. In a nationally representative poll, two-thirds of respondents said they believe looking at pornography will harm a couple's relationship.

● Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

2. "Using pornography is like adultery. It's not legally adultery, which requires penetration. But there are many ways of cheating. It's often effectively desertion—men abandoning their family to spend time with porn."

● Attorney Marcia Maddox (as quoted in Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

3. "Often judges find that even if children aren't directly exposed to a father's pornography, they are indirectly affected because their fathers ignore them in favor of porn."

● Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

4. "We see cases in which the husband becomes so immersed in online porn it destroys the marriage.... Not only is it unsettling for the wife that he's using other women to get off, but it takes away from the time they could spend together as a couple."

● Attorney Mary Jo McCurley (as quoted in Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

5. "Among males, greater amounts of porn use was associated with greater acceptance of sex outside of marriage for married persons, greater acceptance of sex before marriage, and less child-centeredness during marriage."

● Jason S. Carroll et al., "Generation XXX: Pornography Acceptance and Use Among Emerging Adults," *Journal of Adolescent Research* 23, no. 1 (2008): 6–30.

6. Men who use pornography, in addition to being less child-centered, are particularly uninterested in having female children.

● Dolf Zillmann, "The Effects of Prolonged Consumption of Pornography," in *Pornography: Research Advances and Policy Considerations*, eds. Dolf Zillmann and Jennings Bryant (Hillsdale, N.J.: Lawrence Erlbaum Associates, 1989), 127–58.

7. Both men and women who were shown pornography reduced their support for women's rights.

● Zillmann and Bryant, "Effects of Massive Exposure to Pornography" in *Pornography and Sexual Aggression*, Eds. Neil M. Malamuth and Edward Donnerstein (New York: Academic Press, 1984).

8. Among males, increased pornography use is correlated with increased use of alcohol and binge drinking.

● Jason S. Carroll et al., "Generation XXX: Pornography Acceptance and Use Among Emerging Adults," *Journal of Adolescent Research* 23, no. 1 (2008): 6–30.

9. Among attorneys at the November 2002 meeting of the American Academy of Matrimonial Lawyers, 62 percent said the Internet had been a significant factor in divorces they had handled during that year. Of those cases, 56 percent involved one person having an obsessive interest in Internet porn.

● Jonathan Dedmon, "Is the Internet Bad for Your Marriage? Online Affairs, Pornographic Sites Playing Greater Role in Divorces," press release from the Dilenschneider Group, Inc., November 2002, <http://www.expertclick.com/NewsReleaseWire/ReleaseDetails.aspx?ID=3051&CFID=1696313&CFTOKEN=23726003>.

10. "Generally speaking, North American women are socialized to seek, if not to expect, marital and intimate relationships that foster equality between partners and that are founded on mutual respect, honesty, shared power, and romantic love. In stark contrast, pornography promotes and eroticizes the antitheses of these relational and marital ideals: power imbalances, discrimination, disrespect, abuse, violence, voyeurism, objectification, and detachment. Consequently, when a North American, married woman discovers that her husband has been secretly consuming pornography, the discovery not only devastates her sense of self and trust, but often threatens the foundation upon which she has constructed and framed her relational world. She is suddenly confronted with how psychologically, spiritually, and sexually split her supposedly 'modern man' really is. It's not uncommon for women in this situation to say things such as, 'I have no idea who he is anymore,' 'I now feel like I've lived a lie the entire time I've been married,' or 'I thought we had a good marriage until this was revealed.'"

● Jill C. Manning, "The Impact of Pornography on Women: Social Science Findings and Clinical Observations," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 69–88. Princeton, New Jersey: Witherspoon Institute, 2010.

11. A study of 100 women who were or had been in relationships with male pornography users found that women in married relationships commonly view Internet pornography consumption as a substantial threat to the marriage. Their distress increased according to how frequent they believed their husband's online sexual activities were, and their feelings were not significantly influenced by religious beliefs.

● Ana J. Bridges, R. M. Bergner, and M. Hesson-McInnis, "Romantic Partners' Use of Pornography: Its Significance for Women," *Journal of Sex and Marital Therapy* 29, no. 1 (2003): 1–14.

12. A study looking at how couples were impacted by cybersex addiction found cybersex addiction to be a major contributing factor to separation and divorce among affected couples. While several online sexual activities were listed in the study, pornography use was involved in every case.

● Jennifer P. Schneider, "Effects of Cybersex Addiction on the Family: Results of a Survey," *Sexual Addiction & Compulsivity* 7, nos. 1 and 2 (2000): 31–58.

13. Marriages in which one partner has a pornography problem or sexual compulsion are commonly plagued by problems with diminished intimacy and sensitivity, anxiety, secrecy, isolation, relationship dysfunction, and decreased financial security due to the risk of job loss or related debts.

● Patrick J. Carnes, *Don't Call It Love* (New York: Bantam Books, 1991); Jennifer P. Schneider, "Effects of Cybersex Addiction on the Family: Results of a Survey," *Sexual Addiction & Compulsivity* 7, nos. 1 and 2 (2000): 31–58; M. Lynn Wildmon-White and J. Scott Young, "Family-of-Origin Characteristics Among Women Married to Sexually Addicted Men," *Sexual Addiction & Compulsivity* 9 (2002): 263–273.

14. Most of the time, porn users are using pornography outside of the relationship, in private, and frequently without their romantic partner knowing.¹ A study of partners of porn users found that, "this kind of secrecy in combination with sexual activity outside the relationship as well as the user's porn-influenced perceptions of reality had left significant numbers of women disturbed by their partner's use."²

● Ana J. Bridges, Raymond M. Bergner, and Matthew Hesson-McInnis, "Romantic Partners' Use of Pornography: Its Significance for Women," *Journal of Sex and Marital Therapy* 29, no. 1 (January–February 2003): 1–14.
1—Alvin Cooper et al., "Sexuality on the Internet: From Sexual Exploration to Pathological Expression," *Professional Psychology* 30, no. 2 (April 1999): 154–64.

15. Role disruption can occur when one partner is spending significant portions of time using porn instead of spending time with their partner or family.

● Jennifer P. Schneider, "Effects of Cybersex Addiction on the Family: Results of a Survey," *Sexual Addiction & Compulsivity* 7, nos. 1 and 2 (2000): 31–58.

16. Pornography use is increasingly playing a role in separations and divorce.

● Andrea Coombes, "Computer Infidelity: Online Chat, Porn Increasing Factors in Divorce," *CBS MarketWatch*, 2002, <http://www.marketwatch.com/News/Story/Story.aspx?guid=%7BE69E5888-614A-4327-8917> (accessed 5 December 2008).

17. Compulsive pornography users are at risk for depression and stress.

● Cooper et al., "Sexuality on the Internet"; Martin P. Kafka, "The Paraphilia-Related Disorders: Nonparaphilic Hypersexuality and Sexual Compulsivity/Addiction," in *Principles and Practice of Sex Therapy*, 3rd ed., eds. Sandra R. Leiblum and Raymond C. Rosen (New York: Guilford Press, 2000), 471–503.

18. When researchers created a series of mock online profiles of individuals and asked others to rate how interested they would be in pursuing a long-term romantic relationship with each person, women were significantly less interested in pursuing a relationship with those who were frequent pornography users.

● Ana J. Bridges, "Pornography's Effects on Interpersonal Relationships," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 89–110. Princeton, New Jersey: Witherspoon Institute, 2010.

19. In a study done on Internet users, those who were happily married were 61 percent less likely to have visited a pornographic site in the last 30 days.

● Steven Stack, Ira Wasserman, and Roger Kern, "Adult Social Bonds and Use of Internet Pornography," *Social Science Quarterly* 85, no. 1 (March 2004): 75–88.

20. In a survey of 9,177 Internet users, 70 percent reported keeping the amount of time they spent in online sexual activities secret from their partners. Among them, 93 percent of males and 84 percent of females said that people in their lives had complained about their online sexual activities.

● Alvin Cooper et al., "Toward an Increased Understanding of User Demographics in Online Sexual Activities," *Journal of Sex and Marital Therapy* 28, no. 2 (March 2002): 105–29.

21. Frequent exposure to pornography is associated with less trust in intimate partners.

● Dolf Zillmann, "Influence of Unrestrained Access to Erotica on Adolescents' and Young Adults' Dispositions Toward Sexuality," *Journal of Adolescent Health* 27, no. 2 (2000): 41–44.

22. Frequent exposure to pornography is associated with the belief that marriage is sexually confining and that having children and a family is not a good idea.

● Dolf Zillmann, "Influence of Unrestrained Access to Erotica on Adolescents' and Young Adults' Dispositions Toward Sexuality," *Journal of Adolescent Health* 27, no. 2 (2000): 41–44.

23. "Regression results further revealed that [pornography] viewing frequency played a unique role in predicting sexual and relationship satisfaction for college students. Specifically, higher viewing frequency was associated with less sexual and relationship satisfaction when controlling for gender, religiosity, dating status and the number of [pornography] types viewed. The number of [pornography] types viewed was not associated with either satisfaction variable. ... What is also noteworthy is that frequency of [pornography] use was predictive even when controlling for dating status which understandably was highly predictive of sexual and relationship satisfaction."

● Elizabeth M. Morgan, "Associations between Young Adults' Use of Sexually Explicit Materials and Their Sexual Preferences, Behaviors, and Satisfaction," *Journal of Sex Research* 48, no. 6 (2011): 520–530.

24. Adult exposure to pornography is associated with greater acceptance of having affairs for married individuals.

● J. S. Carroll, L. M. Padilla-Walker, L. J. Nelson, C. D. Olson, C. M. Barry, and S. Madsen, "Generation XXX: Pornography Acceptance and Use Among Emerging Adults," *Journal of Adolescent Research* 23, no. 1 (2008): 6–30.

25. Adult exposure to pornography is associated with being more likely to have an affair.

● S. Stack, I. Wasserman, and R. Kern, "Adult Social Bonds and Use of Internet Pornography," *Social Science Quarterly* 85 (2004): 75–88.

26. A study examining male college students found that use of pornography that included coercion or violence was positively correlated with holding beliefs that women should occupy more gender-defined, traditional roles, should be less independent than men, exhibit less interest in sexual behaviors, and maintain more traditional roles in marriages.¹ “A relationship in which the man holds such demeaning attitudes is likely to result in diminished relationship satisfaction.”²

● Ana J. Bridges, “Pornography’s Effects on Interpersonal Relationships,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 89–110. Princeton, New Jersey: Witherspoon Institute, 2010.
 1—Luis T. Garcia, “Exposure to Pornography and Attitudes About Women and Rape: A Correlational Study,” *Journal of Sex Research* 22, no. 3 (August 1986): 378–85.

27. The nationally representative Pornified/ Harris poll found that overall, 34 percent of women see men using pornography as cheating in absolutely all cases.

● Pamela Paul, *Pornified: How Pornography Is Transforming Our Lives, Our Relationships, and Our Families*. New York: Henry Holt and Co, p. 163.

28. “Many of the female [pornography] consumers I have worked with experience increased difficulty in developing long-term, intimate relationships; have become desensitized to graphic material and sexual content; have less-sensitive attitudes toward males; are more willing to use a male for sexual gratification while not being emotionally committed to him; and take greater risks with their sexual health.”

● Jill C. Manning, “The Impact of Pornography on Women: Social Science Findings and Clinical Observations,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 69–88. Princeton, New Jersey: Witherspoon Institute, 2010.

29. In a survey of 400 Internet pornography users, researchers added an online survey on eight pre-existing Internet pornography websites to measure loneliness. “The study found a significant association between loneliness and Internet pornography use (in days per week) as the main predictor of loneliness. It was unexpected, however, that the second highest predictor was the non-pornographic use (in minutes per day) of the Internet. ... Which may indicate a link between time spent in isolated activity and feelings of loneliness.”

● Vincent Cyrus Yoder, Thomas B. Virden III, and Kiran Amin, “Internet Pornography and Loneliness: An Association?” *Sexual Addiction & Compulsivity* 12, no. 1 (2005): 19–44.

Heart

2.8

How Pornography Encourages Objectification

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1. When adolescents, both male and female, are exposed to sexualized media, they are more likely to have stronger notions of women being sex objects.

● L. Monique Ward and Kimberley Friedman, "Using TV as a Guide: Associations Between Television Viewing and Adolescents' Sexual Attitudes and Behavior," *Journal of Research on Adolescents* 16, no. 1 (2006): 133-56.

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2. "A single twenty-something graphic designer told me he would find himself in bars, berating himself over the way he scanned potential dates. 'I'd be saying, 'No, her breasts are too small, she's not worth it,' then wonder, 'Who have I become? Why am I judging women like this.'"

● Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3-20. Princeton, New Jersey: Witherspoon Institute, 2010.

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3. "Countless men have described to me how, while using pornography, they have lost the ability to relate to or be close to women ... They found the way they looked at women in real life warping to fit the pornography fantasies they consumed onscreen. Their daily interactions with women became pornified. Their relationships soured. They had trouble relating to women as individual human beings. They worried about the way they saw their daughters and girls their daughters' age."

● Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3-20. Princeton, New Jersey: Witherspoon Institute, 2010.

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4. "Soft-core pornography has a very negative effect on men as well. The problem with soft-core pornography is that it's voyeurism—it teaches men to view women as objects rather than to be in relationships with women as human beings."

● Gary Brooks (as quoted in Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3-20. Princeton, New Jersey: Witherspoon Institute, 2010.

Heart

2.9

How Pornography Use Decreases Interest in Actual Partners & Actual Sex

1. “Who needs the hassle of dating when I’ve got online porn.”
— Teenage boy in Boston, as quoted in *New York Times Magazine*.

● Benoit Denizet-Lewis, “Friends, Friends with Benefits and the Benefits of the Local Mall,” *New York Times Magazine*, 30 May 2004.

2. “The content of what they found exciting changed as the Web sites introduced themes and scripts that altered their brains without their awareness. Because plasticity is competitive, the brain maps for new, exciting images increased at the expense of what had previously attracted them—the reason, I believe, they began to find their girlfriends less of a turn-on.”

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

3. Frequent exposure to pornography is associated with less trust in intimate partners.

● Dolf Zillmann, “Influence of Unrestrained Access to Erotica on Adolescents’ and Young Adults’ Dispositions Toward Sexuality,” *Journal of Adolescent Health* 27, no 2 (2000): 41-44.

4. “Just as Tinbergen’s and Magnus’s ‘butterfly porn’ successfully competed for male attention at the expense of real females,¹ Awe see this same process occurring in humans.”²

● Donald L. Hilton Jr., MD, “Pornography addiction—a supranormal stimulus considered in the context of neuroplasticity,” *Socioaffective Neuroscience & Psychology* 2013, 3: 20767, 6.

1— Magnus, 1958; Tinbergen, 1951.

5. “For the first time in human history, the images’ power and allure have supplanted that of real naked women. Today real naked women are just bad porn.”

● Naomi Wolf, “The Porn Myth,” *New York Magazine*, http://nymag.com/nymetro/news/trends/n_9437/.

6. “In the 2004 Elle-MSNBC.com poll, 45 percent of men who used Internet pornography for five or more hours per week said they were masturbating too much, and one in five confessed they were having sex less often with their partners. Which isn’t surprising, given that 35 percent said real sex with a woman had become less arousing and 20 percent admitted real sex just couldn’t compare to cybersex anymore.”

● Pamela Paul, *Pornified: How Pornography Is Transforming Our Lives, Our Relationships, and Our Families*. New York: Henry Holt and Co, p. 153.

7. “An orgasm is one of the biggest reinforcers imaginable. If you associate orgasm with your wife, a kiss, a scent, a body, that is what, over time, will turn you on; if you open your focus to an endless stream of ever-more-transgressive images of cybersex slaves, that is what it will take to turn you on. The ubiquity of sexual images does not free eros but dilutes it.”

● Naomi Wolf, “The Porn Myth,” *New York Magazine*, http://nymag.com/nymetro/news/trends/n_9437/

Heart

2.10

How Pornography Can Lead to Physical Danger for Partners

1. “The impact of media violence on real-life aggressive behavior is stronger than many commonly accepted public health risks and nearly as strong as the link between smoking and lung cancer. ... Not everyone who smokes will get lung cancer, and not everyone who views media violence will become aggressive themselves. However, the connection is significant. The most problematic forms of media violence include attractive and unpunished perpetrators, no harm to victims, realism, and humor.”

● Victor C. Strasburger, Amy B. Jordan, and Ed Donnerstein, “Health Effects of Media on Children and Adolescents,” *Pediatrics* 125, no. 4 (2010): 756–767.

2. In a content analysis of 50 best-selling pornographic videos, nearly half of the scenes analyzed contained verbal aggression and more than 88 percent showed physical aggression. Of those aggressive acts, 70 percent were done by men, and 87 percent of the aggressive acts were perpetrated against women. The overwhelming majority of the time these aggressions were responded to with pleasure or neutrality by the victims. Fewer than 5 percent of aggressive acts resulted in a negative response from the victim. Furthermore, it was very infrequent for scenes to show positive behaviors, such as compliments, kissing, or laughter.

● A. J. Bridges, R. Wosnitzer, E. Scharrer, S. Chyng, and R. Liberman, “Aggression and Sexual Behavior in Best Selling Pornography Videos: A Content Analysis Update,” *Violence Against Women* 16, no. 10 (2010): 1065–1085.

3. “Pornography is an ideal teacher of these releaser beliefs. It can teach specific sexual behaviors and general attitudes toward women and children, teach what relationships are like, and teach the nature of sexuality, thus giving permission for a wide range of actions.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

4. A study that both exposed participants to pornography and asked them about their pornography use found that high–pornography users were higher than low–pornography users on scales measuring acceptance of rape myth, acceptance of violence against women, adversarial sex beliefs, reported likelihood of committing rape and forced sex acts, and sexual callousness. High users who were exposed to non-violent dehumanizing pornography had higher scores in reported likelihood of committing rape, sexual callousness, and sexually aggressive behaviors than high pornography users who weren’t shown pornography as part of the study.

● James Check and Ted Guloien, “The Effects of Repeated Exposure to Sexually Violent Pornography, Nonviolent Dehumanizing Pornography, and Erotica,” in *Pornography: Research Advances and Policy Considerations*, eds. Dolf Zillmann and Jennings Bryant (Hillsdale, N.J.: Lawrence Erlbaum Associates, 1989), 159–84.

5. Pornography makes violence appear sexy.

● Diana E. H. Russell, *Making Violence Sexy: Feminist Views on Pornography* (New York: Teachers College Press, 1993).

6. “[Through pornography] a man may learn that there isn’t any need to pay attention to a woman who is resisting, crying, screaming, struggling, or saying no, because ultimately she wants it and will enjoy it. He can conclude that her resistance is a sham and is part of a sex dance that leads to orgasm. He may assume that even her resistance is sexy and sexually arousing because it is part of the sexual template.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

7. A study that examined sexual violence found that all pornography types (soft-core, hard-core, violent, and rape) are correlated with using verbal coercion, drugs, and alcohol to sexually coerce women. All pornography types, including soft-core, are correlated with the future likelihood of raping a woman. All pornography other than soft-core are correlated with actual rape. Those who had higher past exposure to violent pornography were six times more likely to report having raped someone compared to those who reported low past exposure to pornography.

● Scot B. Boeringer, “Pornography and Sexual Aggression: Associations of Violent and Nonviolent Depictions with Rape and Rape Proclivity,” *Deviant Behavior* 15, no. 3 (1994): 289–304.

8. The correlations between circulation rates for *Playboy*, *Penthouse*, *Chic*, *Club*, *Forum*, *Gallery*, *Genesis*, and *Oui* and rape rates shows that states with higher rates of circulation had higher rates of rape.

● Larry Baron and Murray Straus, “Sexual Stratification, Pornography, and Rape in the United States,” in *Pornography and Sexual Aggression*, eds. Neil M. Malamuth and Edward Donnerstein (New York: Academic Press, 1984).

9. Researchers have found that the more frequently men used pornography and the more violent it was, the more likely they were to coerce others into sex, including using physical force (rape).

● Mary Koss and Cheryl Oros, “Sexual Experiences Survey: A Research Instrument Investigating Sexual Aggression and Victimization,” *Journal of Consulting and Clinical Psychology* 50, no. 3 (June 1982): 455–57.

10. A meta-analysis of 33 studies found that behavioral aggression is increased with exposure to either violent or non-violent pornography.

● Mike Allen et al., “Exposure to Pornography and Acceptance of the Rape Myth,” *Journal of Communication* 45, no. 1 (1995): 5–26.

11. In a study looking at women who were victims of domestic or partner violence, among those that had been raped, 73 percent stated that their partners had used pornography.

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

12. “Pornography influences everything from how teens speak of and frame sexuality, to why and how they pierce certain body parts, to what they expect to give and receive in intimate relationships. I am also witnessing more female adolescents tolerating emotional, physical, and sexual abuse in dating relationships, feeling pressure to make out with females as a way to arouse young men, looking at or producing pornography so that their boyfriends will think they are ‘open-minded’ and ‘hot,’ and normalizing sexual abuse done to them because they see the same acts eroticized in pornography—after all, how bad can it be if the larger culture around you finds abusive and demeaning acts a turn-on?”

● Jill C. Manning, “The Impact of Pornography on Women: Social Science Findings and Clinical Observations,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 69–88. Princeton, New Jersey: Witherspoon Institute, 2010.

13. Three separate studies examining adolescents and pornography found that for both males and females there was a strong association between pornography consumption and engaging in anal sex. This is despite the fact that the majority of females had a negative experience with anal sex.

● Rogala and Tydén, “Does Pornography Influence Young Women’s Sexual Behavior?”; Tanja Tydén and Christina Rogala, “Sexual Behavior Among Young Men in Sweden and the Impact of Pornography,” *International Journal of STD & AIDS* 15, no. 9 (2004): 590–93; Elisabet Häggström-Nordin, Tanja Tydén, and Ulf Hanson, “Associations Between Pornography Consumption and Sexual Practices Among Adolescents in Sweden,” *International Journal of STD & AIDS* 16, no. 2 (2005): 102–7.

14. “An increasing number of women I have worked with clinically have learned about a partner’s involvement with pornography and related infidelity through the discovery that they had contracted a sexually transmitted disease.”

● Jill C. Manning, “The Impact of Pornography on Women: Social Science Findings and Clinical Observations,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 69–88. Princeton, New Jersey: Witherspoon Institute, 2010.

15. In a study examining marital rape, research found that there was a correlation between pornography use and the most sadistic marital rapes.

● Rachel Kennedy Bergen, “The Reality of Wife Rape: Women’s Experiences of Sexual Violence in Marriage,” in *Issues in Intimate Violence*, ed. Rachel Kennedy Bergen (Thousand Oaks, Calif.: Sage, 1998), 237–50.

16. Pornography use by adults is associated with engaging in date rape.

● R. Warshaw, *I Never Called It Rape*. (New York: Harper and Row, 1988).

17. According to survey data, those Internet users who had engaged in an extramarital affair were 3.18 times more likely to have use Internet porn than internet users who did not have affairs.¹ Those who have paid for sex were also 37 times more likely to use internet pornography compared with those who had never gone to a prostitute.² “These statistics indicate that internet pornography is often associated with activities that can undermine marital exclusivity and fidelity, and subsequently increase the risk of contracting and transmitting sexual diseases.”³

● Jill C. Manning, “The Impact of Pornography on Women: Social Science Findings and Clinical Observations,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 69–88. Princeton, New Jersey: Witherspoon Institute, 2010.

1—Jonathan Dedmon, “Is the Internet Bad for Your Marriage? Online Affairs, Pornographic Sites Playing Greater Role in Divorces,” press release from the Dilenschneider Group, Inc., November 2002, <http://www.expertclick.com/NewsReleaseWire/ReleaseDetails.aspx?ID=3051&CFID=1696313&CFTOKEN=23726003>.

2—Steven Stack, Ira Wasserman, and Roger Kern, “Adult Social Bonds and Use of Internet Pornography,” *Social Science Quarterly* 85, no. 1 (2004): 75–88.

18. In a study examining marital rape, research found that there was a correlation between pornography use and the most sadistic marital rapes.

● Rachel Kennedy Bergen, “The Reality of Wife Rape: Women’s Experiences of Sexual Violence in Marriage,” in *Issues in Intimate Violence*, ed. Rachel Kennedy Bergen (Thousand Oaks, Calif.: Sage, 1998), 237–50.

19. Use of pornography is the strongest correlate of sexual aggression.

● Leslie L. Crossman, *Date Rape and Sexual Aggression by College Males: Incidence and the Involvement of Impulsivity, Anger, Hostility, Psychopathology, Peer Influence, and Pornography Use*, unpublished doctoral dissertation (College Station: Texas A&M University, 1994).

20. Men who are exposed to violent porn are six times more likely to report rape behavior compared with those who have not been exposed.

● S. B. Boeringer, “Pornography and Sexual Aggression: Associations of Violent and Nonviolent Depictions with Rape and Rape Proclivity,” *Deviant Behavior* 15, no. 3 (1994): 289–304.

21. “Among the effects of the use of pornography are an increased negative attitude toward women, decreased empathy for victims of sexual violence, a blunted affect, and an increase in dominating and sexually imposing behavior.”

● Ana J. Bridges, “Pornography’s Effects on Interpersonal Relationships,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 89–110. Princeton, New Jersey: Witherspoon Institute, 2010.

22. “Exposure to pornography also results in more dominating, degrading, and sexualizing behaviors in men.”

● Ana J. Bridges, “Pornography’s Effects on Interpersonal Relationships,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 89–110. Princeton, New Jersey: Witherspoon Institute, 2010.

23. In a study of women who had been battered by their partner, researchers found that when the partner was a pornography user the odds that a woman reported that partner sexually assaulting her nearly doubled. More than half (58 percent) reported that their partner's pornography use had played a part in their sexual assault. Alcohol use did not significantly increase the chance of sexual assault beyond porn use alone.

● Janet Hinson Shope, "When Words Are Not Enough: The Search for the Effect of Pornography on Abused Women," *Violence Against Women* 10, no. 1 (2004): 56–72.

24. Five studies conducted on Swedish youth found that young men who regularly consume pornography are more likely to have had anal intercourse with a girl and to have tried acts seen in pornography, and that girls who have seen pornography are more likely to have had anal sex. Most of the young women in the studies did not enjoy anal intercourse and did not want to do it again.

● Tyden et al, 2001, Rogala and Tyden 2003, Tyden and Togala 2004; Haggstrom-Nordin et al 2005, Johansson and Hammaren 2007.

25. "A survey of 313 college students indicated that exposure to men's magazines was significantly associated with lower intentions to seek sexual consent and lower intentions to adhere to decisions about sexual consent."

● Stacey, J. T. Hust, Emily Garrigues Maret, Chunbo Ren, Paula M. Adams, Jessica F. Willoughby, Ming Lei, Weina Ran, and Cassie Norman, "Establishing and Adhering to Sexual Consent: The Association between Reading Magazines and College Students' Sexual Consent Negotiation," *Journal of Sex Research* 51, no. 3 (2014): 280–290.

26. Adult exposure to pornography is connected with increased sexual callousness.

● Zillmann and Bryant, "Effects of Massive Exposure to Pornography" in *Pornography and Sexual Aggression*, Eds. Neil M. Malamuth and Edward Donnerstein (New York: Academic Press, 1984).

27. Adult exposure to pornography is connected with users trying to get partners to act out scenes from pornographic films.

● E. Cramer and J. McFarlane, "Pornography and Abuse of Women," *Public Health Nursing* 11, no. 4 (1994): 268–272.

28. Adult exposure to pornography is associated with engaged in more behavioral aggression.

● E. Donnerstein, "Pornography: Its Effects on Violence Against Women," in *Pornography and Sexual Aggression*, Eds. Neil M. Malamuth and Edward Donnerstein (New York: Academic Press, 1984; M. Allen, D. D'Allesio, and K. Brezgel, "A Meta-Analysis Summarizing the Effects of Pornography II: Aggression After Exposure," *Human Communication Research* 22 (1995): 258–283.

29. Pornography use by adults is associated with engaging in marital rape.

● C. A. Simmons, P. Lehmann, and S. Collier-Tennison, "Linking Male Use of the Sex Industry to Controlling Behaviors in Violent Relationships: An Exploratory Analysis," *Violence Against Women* 14, (2008): 406–417.

30. Pornography use by adults is associated with having more adversarial sex beliefs.

● J. V. P. Check and T. H. Guloien, "The Effects of Repeated Exposure to Sexually Violent Pornography, Nonviolent Dehumanizing Pornography, and Erotica," in *Pornography: Recent Research, Interpretations, and Policy Considerations*, Eds. D. Zillmann and J. Bryant (Hillsdale, N.J.: Erlbaum, 1989).

31. Pornography use by adults is associated with more self-reported likelihood of forcing a woman sexually.

● J. V. P. Check and T. H. Guloien, "The Effects of Repeated Exposure to Sexually Violent Pornography, Nonviolent Dehumanizing Pornography, and Erotica," in *Pornography: Recent Research, Interpretations, and Policy Considerations*, Eds. D. Zillmann and J. Bryant (Hillsdale, N.J.: Erlbaum, 1989).

32. Pornography use by adults is associated with using physical coercion to have sex.

● J. Carr and K. VanDeusen, "Risk Factors for Male Sexual Aggression on College Campuses," *Journal of Family Violence* 19 (2004): 279–289.

33. Pornography use by adults is associated with using verbal coercion to have sex.

● S. B. Boeringer, "Pornography and Sexual Aggression: Associations of Violent and Nonviolent Depictions with Rape and Rape Proclivity," *Deviant Behavior* 15 (1994): 289–304.

34. Pornography use by adults is associated with sexually abusing a battered spouse.

● J. Shope, "When Words Are Not Enough: The Search for the Effect of Pornography on Abused Women," *Violence Against Women* 10, no. 1 (2004): 56–72; C. A. Simmons, P. Lehmann, and S. Collier-Tennison, "Linking Male Use of the Sex Industry to Controlling Behaviors in Violent Relationships: An Exploratory Analysis," *Violence Against Women* 14 (2008): 406–417.

World

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3.1

Pornography Usage in Society

1. In a recent nationally representative poll, 43 percent of men and 9 percent of women reported that they had watched porn in the past week; among 20-somethings, numbers for those who had used in the past week rose above 50 percent for men and 20 percent for women.

● The Austin Institute for the Study of Family and Culture. Relationships in America Survey. 2014. <http://relationshipsinaustralia.com/relationships-and-sex/how-much-pornography-are-americans-consuming>.

2. A 2014 survey conducted by the Institute for Public Policy Research (IPPR) that polled 500 teens found that two-thirds of boys and three-fourths of girls believe porn causes unrealistic attitudes about sex. Two out of three respondents, both boys and girls, believe porn can be addictive, and 62 percent of boys and 78 percent of girls believe porn can negatively impact young people's views on sex and relationships. Seventy-seven percent of boys and 83 percent of girls said "it's too easy for young people to accidentally see pornography online." Among those who thought using porn was typical for their peers, about two in three said using porn was coming by age 15.

● 500 Online Interviews amongst UK Adults aged 18 (2014, June). Retrieved October 8, 2014, from Institute for Public Policy Research: <http://www.ippr.org/assets/media/publications/attachments/OP4391-IPPR-Data-Tables.pdf>.

3. In the UK, Pornhub was the 35th most visited website for children aged 6 to 14 in 2013.

● Children and Parents: Media Use and Attitudes Report (2014, October) (p. 232). Retrieved November 17, 2014, from Ofcom: http://stakeholders.ofcom.org.uk/binaries/research/media-literacy/media-use-attitudes-14/Childrens_2014_Report.pdf.

4. In Canada, one in three boys is a "heavy" porn user, watching more times than they can count.

● Betkowski, B. (2007, March 2), Study Finds Teen Boys Most Likely to Access Pornography. Retrieved June 16, 2014, from University of Alberta: <http://www.ualberta.ca/~publicas/folio/44/13/09.html>.

5. "Men look at pornography online more than they look at any other subject."

● Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in James R. Stoner, Jr. and Donna M. Hughes, eds. *The Social Costs of Pornography: A Collection of Papers*. Princeton, NJ: Witherspoon Institute (2010), 4.

6. "Thirty years ago 'hardcore' pornography usually meant the explicit depiction of sexual intercourse between two aroused partners, displaying their genitals. 'Softcore' meant pictures of women, mostly, ... in various states of undress, breasts revealed. Now hardcore has evolved and is increasingly dominated by the sadomasochistic themes of forced sex, ejaculations on women's faces, and angry anal sex, all involving scripts fusing sex with hatred and humiliation. Hardcore pornography now explores the world of perversion, while softcore is now what hardcore was a few decades ago, explicit sexual intercourse between adults, now available on cable TV. The comparatively tame softcore pictures of yesteryear—women in various states of undress—now show up on mainstream media all day long, in the pornification of everything, including television, rock videos, soap operas, advertisements, and so on."

● Norman Doidge, *The Brain That Changes Itself* (New York: Penguin Books, 2007), 30.

7. "Although pornography is nothing new, the proximity of the sex industry to the public and private squares is new. In the past, the triple-x bookstore and restricted movie theater were tangible buffers between sexually explicit material and minors, as well as adults who did not want to be exposed to 'dirty pictures.' Today, anyone with a cable or an Internet connection has access to a smorgasbord of sexual content, including obscene content not protected by the First Amendment. Moreover, the sex industry has unprecedented access to those who are technologically connected, and it capitalizes on this contact with stunning effectiveness, not to mention blatant disregard for those who may be harmed (not just offended) in the process."

● Mary Anne Layden, "Pornography and Violence: A New look at the Research," in James R. Stoner, Jr. and Donna M. Hughes, eds. *The Social Costs of Pornography: A Collection of Papers*. Princeton, NJ: Witherspoon Institute (2010), 70.

8. Between 1998 and 2005, the number of sex scenes on television nearly doubled.

● Dale Kunkel et al., *Sex on TV 4* (Menlo Park, Calif.: The Henry J. Kaiser Family Foundation, 2005).

9. “The sex industry plays on the ever more transgressive nature of the pornographic content, mainstreaming what in former times would only have been found in seedy, marginal, pornographic emporiums. What is most disturbing about all this information is that not only is the sex industry big business but that the selling of its ‘products’—pornography, prostitution, sex tourism, mail order brides—all depending on the commodification of mostly women and children, has become much more acceptable, more normal, and even fashionable and ‘cool.’ And anyone who raises criticisms of the industry and its turning of sexual exploitation into ‘sex’ is labeled out of touch, moralistic and repressed. Ultimately, the sex industry has made sexual exploitation not only normal but respectable. ... Many women have commented that many men seem incapable of having sexual relationships or, for that matter, genuine emotional relationships with women who don’t act like women in pornography.”

● Janice Raymond, “Public Hearing on ‘The Impact of the Sex Industry in the EU,’” Committee on Women’s Rights and Equal Opportunities, European Parliament, January 19, 2004” (Coalition Against Trafficking in Women, New York), <http://www.europarl.europa.eu/hearings/20040119/femm/raymond.pdf>.

10. “There’s an old story about a trial of a man charged with biting off another man’s finger in a fight. An eyewitness took the stand. The defense attorney asked, ‘Did you actually see my client bit off the finger?’ The eyewitness said, ‘Well, no, I didn’t.’ ‘Aha!’ said the attorney with a smug smile. ‘How then can you claim he bit off the man’s finger?’ ‘Well,’ replied the witness, ‘I saw him spit it out.’ Think about this in the context of young men watching online porn. We may not know all the effects that online porn has on the brain and behavior yet, but never before in human history have young men experienced the phenomenon known as porn-induced erectile dysfunction (PIED). It’s not just PIED either. Young men themselves are flocking to online forums like Reddit/ noFap and YourBrainOnPorn.com because they feel they cannot stop watching porn and they are noticing positive life changes once they STOP watching online porn, such as improved clarity of thought, social anxiety disappearing – increased desire to be social, sexual anxiety disappearing, stronger erections, women are more interesting (socially and sexually, real-life partners become more attractive to them), depression and suicidal thoughts disappearing – a greater sense of overall happiness, improved self-confidence, more energy, more general motivation.”

● Philip Zimbardo and Nikita D. Coulombe, *Man (Dis)connected* (London: Rider Books), 2015.

11. “Symantec’s 2009 study of children online revealed the word ‘porn’ ranked as the fourth most popular search word for children aged 7 and younger, and was in the top 5 words Googled by children under 18.”

● Maggie Hamilton, “Groomed to Consume Porn: How Sexualized Marketing Targeting Children,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 16–24. North Melbourne, Australia: Spinifex Press, 2011.

12. “When a girl or boy grows up in a toxic sexual atmosphere, their inhibitions are lowered to the point that accessing porn seems a natural progression. The sexualized climate our

children are growing up in is a manufactured process, not an organic one. The sexualized landscape children are now forced to inhabit reshapes their attitudes to sex and their desires, and it starts long before they learn to read or write.”

● Maggie Hamilton, “Groomed to Consume Porn: How Sexualized Marketing Targeting Children,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 16–24. North Melbourne, Australia: Spinifex Press, 2011.

13. “Compared to studies conducted in the 1980s and 1990s, our study revealed that pornography has become much more aggressive in both frequency and type of act.”

● Chyng Sun, “Investigating Pornography: The Journey of a Filmmaker and Researcher,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 171–178. North Melbourne, Australia: Spinifex Press, 2011.

14. “In India today, 1 in 5 teenagers watch porn before the age of 13. Violent 3-D animation sex video games are especially created for this young market. They start with a pop-up site in which a woman prompts the user to undress her. That act then leads to violent sex games.”

● Ruchira Gupta, “Pornography in India,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 239–248. North Melbourne, Australia: Spinifex Press, 2011.

15. “Boys between the ages of 8 and 16 are particularly lured to the porn sites through ‘porn-napped’ and ‘typosquatted’ websites. Figures reveal that nearly 90 percent of boys aged 8 to 16 who have access to the Internet, have viewed pornographic sites while doing their homework.”

● Ruchira Gupta, “Pornography in India,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 239–248. North Melbourne, Australia: Spinifex Press, 2011.

16. “The Portman’s [the Portman Clinic in London is a well-respected addiction and behavioral treatment center] casebook has shifted significantly in recent years, for one principal reason: internet pornography. Ruszczyński told me that the number of patients who are either addicted or otherwise adversely affected by it is ‘phenomenal’. Referral letters mention it regularly, and if they don’t the patient will often mention it during his assessment. ‘I don’t just mean bonking sites,’ Ruszczyński says, ‘but heavy-duty material.’ Frequently patients mention searching for pedophilic material. ‘There’s something about the internet... I imagine that 20 years ago some chap somewhere was sitting there with a very strange perversion that he probably thought he had all to himself. But then he gets on the internet and finds there are 33 sites where other people are doing something similar. So suddenly something that was quite contained is automatically normalized. I think this is a real issue. On the internet you can get anything you want, so that people who were once constrained by societal moralities and values, they now find there’s a doorway... I don’t want to sound like a dinosaur, but it definitely opens up people’s possibilities for actively pursuing some of these compulsions. And if you find that a lot of other people are interested in the same things you are, you will tend to believe, “Well, what’s the problem?””

● Simon Garfield, “Porn Addicts, Sex Offenders, Rapists, Paedophiles,” *The Observer*, November 22, 2008, <http://www.theguardian.com/lifeandstyle/2008/nov/23/health-wellbeing-therapy-society>

World

3.2

How We Learn From Pornography

1. “We learn better using images than words, because images carry more information in a more compact form. ... Words are often perceived as opinions, while images are often perceived as events or facts. We argue in our head against words or opinions, but much less often against events or facts, particularly images. The vast majority of pornography is visual.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

2. “We also learn better when aroused. If something activates our sympathetic nervous system, we are more prepared to remember the information received at that point.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

3. “Learning is better if it is reinforced. Behavior that is rewarded is likely to be repeated while behavior that is punished is less likely to be repeated. Sexual arousal and orgasm are extremely rewarding experiences. We may be innately predisposed to enjoy the rewards of sexual arousal and orgasm, but we learn how and when and with whom we can experience those pleasures. If a novel sexual behavior produces an orgasm, we are more likely to repeat that behavior and add it to our sexual template and repertoire.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

4. “Learning is also better if we see others perform a behavior and observe what happens. Seeing others who are modeling behaviors rewarded or punished will have some of the same effects on us as if we were rewarded or punished ourselves.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

5. “Imagery that contains role models who are demonstrating sexual behavior and being rewarded for it, that produces sexual arousal in the viewer and is followed by an orgasm, can be extremely effective in producing deeply learned beliefs and behaviors. Pornography can offer all these elements—images, arousal, reinforcement, the example of others—so it is a potent teacher of both beliefs and behaviors. It provides the ideal conditions for learning.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

6. “One category of beliefs we learn is called ‘permission-giving beliefs.’ These beliefs give us permission to engage in a behavior we would like to engage in or are already engaging in. They tell us there is no need to stop, change, or reduce the behavior—they tell us, for example, that what we are doing is normal, that it doesn’t hurt anyone, and that everybody is doing it.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

7. “This may be pornography’s most insidious influence; namely, the acceptance of the attitudes (some obvious, some more subtle) expressed in pornography. Pornographic depictions of sexuality distort the truth about desires of women and children, and legitimize men’s sense of entitlement, and use of force, violence, and degrading acts by the male actors.”

● William L. Marshall, “Revisiting the Use of Pornography by Sexual Offenders: Implications for Theory and Practice,” *Journal of Sexual Aggression* 6, nos. 1 and 2 (2000): 67.

8. “Sexual deviance can be learned. Some men may initially look at deviant pornography out of curiosity. Some may move up to harder kinds because softer material no longer arouses them. Either way they may learn deviant beliefs and behavior from it. Things that used to lead to disgust now seem less unusual and more common and even normal, and over time, come to seem sexy.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

9. “Pornography is often defined by the particular effect it produces in the spectator, that is, sexual arousal and masturbation to orgasm. Yet masturbation is usually absent in experimental studies. ... Masturbation and orgasm, as powerful physical and emotional experiences, are central to the pornographic experience and influence the interpretation and effects of the material. It is therefore possible that experimental studies in fact underestimate the effect of pornography.”

● Michael Flood, “Young Men Using Pornography,” in *Everyday Pornography*, edited by Karen Boyle. New York: Routledge, 2010.

10. “Media affect youth ... by influencing beliefs and behaviors.”

● Victor C. Strasburger, Amy B. Jordan, and Ed Donnerstein, “Health Effects of Media on Children and Adolescents,” *Pediatrics* 125, no. 4 (2010): 756–767.

11. “According to social learning theory, children and adolescents learn by observing and imitating what they see on the screen particularly when these behaviors seem realistic or are rewarded.”

● Victor C. Strasburger, Amy B. Jordan, and Ed Donnerstein, “Health Effects of Media on Children and Adolescents,” *Pediatrics* 125, no. 4 (2010): 756–767.

12. “Media present youth with common ‘scripts’ for how to behave in unfamiliar situations such as romantic relationships.”

● D. L. Tolman, J. L. Kim, D. Schooler, and C. L. Sorsoli, “Rethinking the Associations between Television Viewing and Adolescent Sexuality Development: Bringing Gender into Focus,” *Journal of Adolescent Health* 40, no. 1 (2007): 84; as quoted in Victor C. Strasburger, Amy B. Jordan, and Ed Donnerstein, “Health Effects of Media on Children and Adolescents,” *Pediatrics* 125, no. 4 (2010): 756–767.

13. According to “superpeer theory,” the media acts as an influential best friend that makes risky behaviors seem normal and common.

● V. C. Strasburger, B. J. Wilson, and A. B. Jordan. *Children, Adolescents, and the Media*, 2nd Edition. Thousand Oaks, Calif.: Sage, 2009.

14. “There is agreement in the literature suggesting that adolescents can learn sexual behaviors from observing the behaviors depicted in sexually explicit materials.”

● Eric W. Owens, Richard J. Behun, Jill C. Manning, and Rory C. Reid, “The Impact of Internet Pornography on Adolescents: A Review of the Research,” *Sexual Addiction and Compulsivity* 19 (2012): 99–122.

15. “There is a wealth of research within media studies that shows that people construct their notions of reality from the media they consume, and the more consistent and coherent the message, the more people believe it to be true.”

● Gail Dines, “The New Lolita: Pornography and the Sexualization of Childhood,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 3–8. North Melbourne, Australia: Spinifex Press, 2011; for more information and a discussion of the findings of over 30 years of studies on how media shapes the social construction of reality, see George Gerbner, “Cultivation Analysis: An Overview,” *Mass Communication and Society* 1, nos. 3 & 4 (1998): 175–194.

16. “The fallout from the countless sexual images seen in ads, on TV screens, posters, and billboards, in MTV clips, movies, video games and sitcoms, on clothing and accessories, and on the Internet, is real and impacting. This constant stream of hyper-sexualized imagery and sexual expression that boys and girls are subjected to daily lowers their inhibitions, discourages empathy towards others, and reshapes their sexual aspirations and expression often in risky, violent or unhelpful ways.”

● Maggie Hamilton, “Groomed to Consume Porn: How Sexualized Marketing Targeting Children,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 16–24. North Melbourne, Australia: Spinifex Press, 2011.

World

3.3

How Pornography Distorts Views of Women & Gay Men

1. “Countless men have described to me how, while using pornography, they have lost the ability to relate to or be close to women ... They found the way they looked at women in real life warping to fit the pornography fantasies they consumed onscreen. Their daily interactions with women became pornified. Their relationships soured. They had trouble relating to women as individual human beings. They worried about the way they saw their daughters and girls their daughters’ age.”

● Pamela Paul, “From Pornography to Porno to Porn: How Porn Became the Norm,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

2. Both men and women who were shown pornography reduced their support for women’s rights.

● Zillmann and Bryant, “Effects of Massive Exposure to Pornography” in *Pornography and Sexual Aggression*, Eds. Neil M. Malamuth and Edward Donnerstein (New York: Academic Press, 1984).

3. A study examining male college students found that use of pornography that included coercion or violence was positively correlated with holding beliefs that women should occupy more gender-defined, traditional roles, should be less independent than men, exhibit less interest in sexual behaviors, and maintain more traditional roles in marriages.

● Luis T. Garcia, “Exposure to Pornography and Attitudes About Women and Rape: A Correlational Study,” *Journal of Sex Research* 22, no. 3 (August 1986): 378–85.

4. A 2002 study looking at heterosexual men who used pornography found that the more pornography the man consumed, the more likely he was to describe women in sexualized and stereotypically feminine ways; to approve of women in traditionally female occupations; and to value women who are more submissive and subordinate to men.

● Ryan J. Burns, “Male Internet Pornography Consumers’ Perception of Women and Endorsement of Traditional Female Gender Roles” (Austin, Tex.: Department of Communication Studies, University of Texas, 2002), p. 11.

5. Lexington, Massachusetts-based psychologist and sex therapist Aline Zoldbrod says ... “The majority of porn out there is degrading to women and it’s only gotten worse. The women are plasticized; there’s no longer as much diversity or naturalism as there was two decades ago.”

● Pamela Paul, *Pornified: How Pornography Is Transforming Our Lives, Our Relationships, and Our Families*. New York: Henry Holt and Co, p. 145.

6. When adolescents, both male and female, are exposed to sexualized media, they are more likely to have stronger notions of women being sex objects.

● L. Monique Ward and Kimberley Friedman, “Using TV as a Guide: Associations Between Television Viewing and Adolescents’ Sexual Attitudes and Behavior,” *Journal of Research on Adolescents* 16, no. 1 (2006): 133–56

7. In a series of interviews with researchers, one female adolescent described a common theme in pornography saying, “Well, the girl should be small, thin, and you know ... inferior ... while the guy should be muscular and superior.”

● E. Haggstrom-Nordin, J. Sandberg, U. Hanson, and T. Tyden, “It’s Everywhere! Young Swedish People’s Thoughts and Reflections about Pornography,” *Scandinavian Journal of Caring Science* 20 (2006): 386–393.

8. Adolescents are more likely to believe women are sex objects when they use pornography more often.

● J. Peter and P. M. Valkenburg, “Adolescents’ Exposure to a Sexualized Media Environment and Notions of Women as Sex Objects,” *Sex Roles* 56 (2007): 381–395.

9. “Adolescents’ exposure to [sexually explicit Internet material] was both a cause and a consequence of their beliefs that women are sex objects. More frequent exposure to SEIM caused stronger beliefs that women are sex objects. At the same time, stronger beliefs that women are sex objects led to more frequent exposure to SEIM, albeit only for male adolescents.”

● Jochen Peter and Patti M. Valkenburg, “Adolescents’ Exposure to Sexually Explicit Internet Material and Notions of Women as Sex Objects: Assessing Causality and Underlying Processes,” *Journal of Communication* 59 (2009): 407–433.

10. [In evaluating male college students’ use of porn] “The guys I interviewed consistently spoke of women more with contempt than desire. Women were ‘hos,’ ‘bitches,’ and ‘sluts.’ ... [Their attitudes were that] you don’t have sex with women because you desire them; sex is the weapon by which you get even with them, or, even, humiliate them.”

● Michael Kimmel, *Guyland*, New York: HarperCollins, 2008.

11. [In gay male pornography] the white male is described as one who seeks out an inferior Asian other; the young Asian is described and presented as ready and willing to serve his sexual needs and fantasies. The white male is superior; the Asian male inferior. The resulting harm is an affront to all persons seeking equality. In a similar vein, the reader is offered materials in which African-American men are present as violent sexual predators with large sexual organs who care only to emasculate white men through rape or in which the same men are presented as sexually desiring to be the slaves of white men needing to reaffirm a masculinity threatened by the Black male.”

● Christopher N. Kendall, “The Harms of Gay Male Pornography,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 53–62. North Melbourne, Australia: Spinifex Press, 2011.

12. “Becoming ‘a man’ does nothing for gay male liberation. It does, however, do a lot for male supremacy. It ensures that the rejection of male dominance necessary for gay male liberation, will be more difficult and that those of us who do choose to do so will face more hostility from both straight men and those in our community who have sold out. It ensures that the ‘groveling faggot,’ aware that he can never be the man he is supposed to be, will be just what gay male pornography and society says he should be: the object of scorn and male aggression. It ensures that the closeted youth, already attacked for being different, will stay closeted, afraid to express any ‘difference’ that might reveal his secret and make him the target of more hatred.”

● Christopher N. Kendall, “The Harms of Gay Male Pornography,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 53–62. North Melbourne, Australia: Spinifex Press, 2011.

13. “While my overt task at hand was to make sure that the girls got naked, my true responsibility as the director was to make sure the girls got punished. Scenes that stuck out, and hence made more money, were those in which the female ‘targets’ were verbally degraded and sometimes physically humiliated.”

● Sam Benjamin, author of *Confessions of an Ivy League Pornographer*, as quoted in Chyng Sun, “Investigating Pornography: The Journey of a Filmmaker and Researcher,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 171–178. North Melbourne, Australia: Spinifex Press, 2011.

World

3.4

How Pornography Distorts Views of Sex

1. "Porn creates a sense of what is normal, what is expected, and that we ought to consent to ways of doing sex that are not just derived from the interaction between those individuals engaged in the experience and what they would like to be doing. We're hearing many stories from young women about their partners initiating the signature sex acts from pornography and of the women struggling with both wanting to please their partners, wanting to be accommodating and generous in their sexuality, but not wanting to engage in those sex acts."

● Maree Crabbe, expert in sexuality and sexual health among young people, as quoted in Michael Short, "The Problem with Porn," *The Sydney Morning Herald*, May 22, 2013.

2. "The type of sexuality depicted [in pornography] often has more to do with violence, extreme fetishes, and mutual degradation than with fun, much less with sexual or emotional connection. For those who haven't double-clicked: These aren't airbrushed photos of the girl next door or images of coupling; they are vivid scenes of crying women enduring aggressive multiple penetration."

● Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

3. Sharon Mitchell, a former porn star, describes working in the pornography industry saying, "It's multiple penetrations, it's fisting, it's all about unprotected anal sex. A few people still do vanilla regular sex, but for the most part, it's as kinky as they can get and as much as they can push it as possible. That's the majority of the porn that's out there."

● "Young Women, Porn & Profits: Corporate America's Secret Affair," *Primetime Live*, ABC, Diane Sawyer, May 27, 2004.

4. "Not only younger children, but even young teenagers are generally not sophisticated enough to differentiate between fantasy and reality. They learn direct lessons from pornography, with no filter, and with no concept of exaggeration, irony, or affect. They learn what women supposedly look like, how they should act, and what they are supposed to do. They learn what women 'want' and how men can give it to them. Watching pornography, boys and girls learn that women always want sex and that sex is divorced from relationships. They learn that men can have whomever they want and that women will respond the way men want them to. They learn that anal sex is the norm and instant female orgasm is to be expected. And they absorb these lessons avidly, emulating people they perceive to be role models."

● Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

6. "Kids today are going to run into pornography online, not erotica. ... They're getting a very bad model. Pornography doesn't show how a real couple negotiates conflict or creates intimacy. ... [For girls, it's a] brutal way to be introduced to sexuality."

● Aline Zoldbrod, as quoted in Pamela Paul, "From Pornography to Porno to Porn: How Porn Became the Norm," in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

7. Since adolescents often don't have "real-life experiences with sexual partners ... they are especially susceptible to internalization of distorted pornographic images of human sexuality and may act accordingly."

● J. A. Hunter, A. J. Figueredo, and N. M. Malamuth, "Developmental Pathways into Social and Sexual Deviance," *Journal of Family Violence* 25 (2010): 141–148.

8. "Softcore pornography's influence is now most profound because, now that it is no longer hidden, it influences young people with little sexual experience and especially plastic minds, in the process of forming their sexual tastes and desires."

● Norman Doidge, *The Brain that Changes Itself*. New York: Viking, 2007.

9. In pornography "sex is divorced from intimacy, loving affection, and human connection; all women are constantly available for sex and have insatiable sexual appetites; and all women are sexually satisfied by whatever the men in the film do."

● R. Jensen and G. Dines, "The Content of Mass-Marketed Pornography," in *Pornography: The Production and Consumption of Inequality*, eds. G. Dines, R. Jensen, and A. Russo. New York: Routledge (1998), pp. 65–100.

10. "Analyses revealed that both sexually explicit material (SEM) viewing frequency and the number of SEM types viewed uniquely predicted all three sexual preference variables. These robust relationships ... indicate that heavy consumers of SEM hold similar sexual preferences to those frequently portrayed in SEM. ... Interestingly, however, the average age of first SEM use preceded the average age of first sexual intercourse by two to four years, suggesting that the majority of participants likely engaged with SEM prior to developing preferences based on their own sexual experiences. In sum, the findings from this study reveal that multiple dimensions of SEM use, including frequency of use and number of types used, share significant associations with young adults' sexual behaviors, sexual and relationship satisfaction, and sexual preferences."

● Elizabeth M. Morgan, "Associations between Young Adults' Use of Sexually Explicit Materials and Their Sexual Preferences, Behaviors, and Satisfaction," *Journal of Sex Research* 48, no. 6 (2011): 520–530.

11. “Examining both how often sexually explicit material [SEM] was used and how many types of SEM were used, this study also suggested that these two variables were associated in interesting ways with aspects of participants’ sexual behaviors, satisfaction, and preferences, lending support to the hypothesis that SEM use plays a role in the cultivation of sexual scripts during young adults’ sexual development.”

● Elizabeth M. Morgan, “Associations between Young Adults’ Use of Sexually Explicit Materials and Their Sexual Preferences, Behaviors, and Satisfaction,” *Journal of Sex Research* 48, no. 6 (2011): 520–530.

12. Adult exposure to pornography is connected with users increasing their estimates of how often people have violent sex and group sex.

● Zillmann and Bryant, “Effects of Massive Exposure to Pornography” in *Pornography and Sexual Aggression*, Eds. Neil M. Malamuth and Edward Donnerstein (New York: Academic Press, 1984).

13. Pornography use by adults is associated with having more adversarial sex beliefs.

● J. V. P. Check and T. H. Guloien, “The Effects of Repeated Exposure to Sexually Violent Pornography, Nonviolent Dehumanizing Pornography, and Erotica,” in *Pornography: Recent Research, Interpretations, and Policy Considerations*, Eds. D. Zillmann and J. Bryant (Hillsdale, N.J.: Erlbaum, 1989).

14. In a study comparing male undergraduate students’ sexual beliefs, researchers found that “participants who viewed music videos of highly objectified female artists reported more adversarial sexual beliefs, more acceptance of interpersonal violence, and, at a level of marginal significance, more negative attitudes about sexual harassment than participants assigned to low-sexual objectifying music videos by the same female artists.”

● Jennifer Stevens Aubrey, K. Megan Hopper, and Wanjiru G. Mbure, “Check That Body! The Effects of Sexually Objectifying Music Videos on College Men’s Sexual Beliefs,” *Journal of Broadcasting and Electronic Media* 55, no. 3 (2011): 360–379.

15. Researchers have found that in 98 percent of pornographic movies studied a man ejaculates on the body, face, or in the mouth of a women.

● H.-B. Brosius, J. B. Weaver, and J. F. Staab, “Exploring the Social and Sexual Reality of Contemporary Pornography,” *Journal of Sex Research* 30 (1993): 161–170.

16. Adult exposure to pornography is connected with increased sexual callousness.

● Zillmann and Bryant, “Effects of Massive Exposure to Pornography” in *Pornography and Sexual Aggression*, Eds. Neil M. Malamuth and Edward Donnerstein (New York: Academic Press, 1984).

17. Frequent exposure to pornography is associated with thinking sexual inactivity or abstinence is unhealthy.

● Dolf Zillmann, “Influence of Unrestrained Access to Erotica on Adolescents’ and Young Adults’ Dispositions Toward Sexuality,” *Journal of Adolescent Health* 27, no 2 (2000): 41–44.

18. Researchers have found that men who consistently used porn were more likely to agree with statements such as “A man should find them, fool them, f*** them, and forget them,” “A woman does not mean ‘no’ unless she slaps you,” and “If they are old enough to bleed, they are old enough to butcher,” showing what the researchers called “sexual callousness” among male porn users.

● D. Zillmann, “Pornografie,” in *Lehrbuch der Medienpsychologie*, ed. R. Mangold, P. Vorderer, and G. Bente (Göttingen, Germany: Hogrefe Verlag, 2004), pp. 565–85.

19. Frequent exposure to pornography is associated with wrongfully believing that less common sexual practices, such as group sex, bestiality, and sadomasochistic activity are more common in the general population than they are.

● Dolf Zillmann, “Influence of Unrestrained Access to Erotica on Adolescents’ and Young Adults’ Dispositions Toward Sexuality,” *Journal of Adolescent Health* 27, no 2 (2000): 41–44.

20. “While ejaculation on a woman’s body in general may be seen as degrading, some have argued that male ejaculation on a woman’s face is particularly degrading and occurs with regularity in pornography.”

● Bridges, A. J., Wosnitzer, R., Scharrer, E., Chyng, S., & Liberman, R. (2010). Aggression and sexual behavior in best selling pornography videos: A content analysis update. *Violence against Women*, 16(10), 1065–1085.

21. “Scripts are memory structures that provide information and rules for behaving. They evolve over time and with repeated exposure to a set of stimuli or with repetition of particular behaviors.¹ For example, people develop scripts for how to behave in a public library, a football game, or when stopped by a police officer for speeding. Pornography’s scripts emphasize culturally accepted beauty standards, the idea of the constant sexual availability and insatiable sexual appetites of men and women, the excitement of sexual novelty, and sex outside of a primary romantic relationship.² It rarely includes affection, intimate relationships, or expressions of love, and it often involves men ejaculating outside of a woman’s body while she expresses orgasmic pleasure. Frequently, pornography lacks foreplay and afterplay: The focus on sexual penetration is so pervasive that caressing, kissing, or cuddling are minimized or eliminated.³ As scripts for sexual intimacy with a real life partner, these nearly always fall short.

● Ana J. Bridges, “Pornography’s Effects on Interpersonal Relationships,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 89–110. Princeton, New Jersey: Witherspoon Institute, 2010.

1—Ramesh Lakshmi-Ratan and Easwar Iyer, “Similarity Analysis of Cognitive Scripts,” *Journal of the Academy of Marketing Science* 16, no. 2 (1988): 36–42
2—Hans-Bernd Brosius et al., “Exploring the Social and Sexual ‘Reality’ of Contemporary Pornography,” *Journal of Sex Research* 30, no. 2 (1993): 161–70.

3—Donald L. Mosher and Paula Maclan, “College Men and Women Respond to X-Rated Videos Intended for Male or Female Audiences: Gender and Sexual Scripts,” *Journal of Sex Research* 31, no. 2 (1994): 99–112.

22. “Nearly every scene ends with the ‘cum shot’ or ‘money shot’—male ejaculation into a woman’s mouth or on her face or body. As one pornography director put it, ‘it’s like a dog marking its territory.’¹ Another veteran pornographic director and actor put it more bluntly: ‘I’d like to really show what I believe the men want to see: violence against women ... [but] the most violent we can get is the cum show in the face. Men get off behind that, because they get even with the women they can’t have.’”

● Robert Jensen, “Stories of a Rape Culture: Pornography as Propaganda,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 25–33. North Melbourne, Australia: Spinifex Press, 2011.

1— Chyng Sun and Miguel Picker, *The Price of Pleasure: Pornography, Sexuality, and Relationships*, Northampton, Mass.: Media Education Foundation, 2008.

2— Robert Stoller and I. S. Levine, *Coming Attractions: The Making of an X-rated Video*, New Haven, Conn.: Yale University Press, 1993.

23. “The ass-to-mouth sequence ... [occurred] in about 40 percent of scenes.”

● Chyng Sun, “Investigating Pornography: The Journey of a Filmmaker and Researcher,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 171–178. North Melbourne, Australia: Spinifex Press, 2011.

1. “Defenders of pornography have often argued that pornography provides individuals prone to sexual violence or other aberrant sexual behavior with an outlet for their sexual desires. In other words, they argue that it has a cathartic effect on individuals who would otherwise engage in sexual misconduct of one kind or another. If this rationale were true, one would expect men who are regular consumers of pornography to be the least likely to frequent prostitutes. Research done to date indicates that the opposite is true.”

● Robert W. Peters, Laura J. Lederer, and Shane Kelly, “The Slave and the Porn Star: Sexual Trafficking and Pornography,” *The Protection Project: Journal of Human Rights and Civil Society*, Issue 5 (Johns Hopkins University: Fall 2012).

2. “Among the effects of the use of pornography are an increased negative attitude toward women, decreased empathy for victims of sexual violence, a blunted affect, and an increase in dominating and sexually imposing behavior.”

● Ana J. Bridges, “Pornography’s Effects on Interpersonal Relationships,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 89–110. Princeton, New Jersey: Witherspoon Institute, 2010.

3. “Exposure to pornography also results in more dominating, degrading, and sexualizing behaviors in men.”

● Ana J. Bridges, “Pornography’s Effects on Interpersonal Relationships,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 89–110. Princeton, New Jersey: Witherspoon Institute, 2010.

4. According to a report summarizing 81 peer-reviewed research studies, 70 percent of studies found that exposure to nonaggressive pornography resulted in clear negative effects, and that most viewers ventured beyond nonaggressive pornography.

● John S. Lyons, Rachel L. Anderson, and David B. Larsen, “A Systematic Review of the Effects of Aggressive and Nonaggressive Pornography,” in *Media, Children, and the Family: Social Scientific Psychodynamic, and Clinical Perspectives*, eds. Dolf Zillmann, Jennings Bryant, and Aletha Huston (Hillsdale, N.J.: Lawrence Erlbaum Associates, 1994), 305.

5. “Pornography is an ideal teacher of these releaser beliefs. It can teach specific sexual behaviors and general attitudes toward women and children, teach what relationships are like, and teach the nature of sexuality, thus giving permission for a wide range of actions.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

6. “In other words, pornography has the ability not only to teach social attitudes and behaviors, but also to give permission to engage in them. Permission-giving beliefs become releasers of behavior.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

7. “Pornography influences everything from how teens speak of and frame sexuality, to why and how they pierce certain body parts, to what they expect to give and receive in intimate relationships. I am also witnessing more female adolescents tolerating emotional, physical, and sexual abuse in dating relationships, feeling pressure to make out with females as a way to arouse young men, looking at or producing pornography so that their boyfriends will think they are ‘open-minded’ and ‘hot,’ and normalizing sexual abuse done to them because they see the same acts eroticized in pornography—after all, how bad can it be if the larger culture around you finds abusive and demeaning acts a turn-on?”

● Jill C. Manning, “The Impact of Pornography on Women: Social Science Findings and Clinical Observations,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 69–88. Princeton, New Jersey: Witherspoon Institute, 2010.

8. A study that looked at middle-school youth found that exposure to pornography predicted perpetration of sexual harassment in boys, more permissive sexual norms, engaging in oral sex, and engaging in intercourse in high school.

● J. D. Brown and K. L. L’Engle, “X-Rated: Sexual Attitudes and Behaviors Associated with US Early Adolescents’ Exposure to Sexually Explicit Media,” *Communication Research* 36, no. 1 (2009): 129–151.

9. Longitudinal studies have linked heavy exposure to sexual mainstream media with engaging in sexual activity earlier¹ earlier coital behavior² increased risk for unplanned pregnancy³ and sexually transmitted disease.⁴

● 1—A. Bleakley, M. Hennessy, M. Fishbein, and A. Jordan, “It Works Both Ways: The Relationship Between Sexual Content in the Media and Adolescent Sexual Behavior,” *Media Psychology* 11, no. 4 (2008): 443–461.

2—R. L. Collins, M. N. Elliott, S. H. Berry, et al., “Watching Sex on Television Predicts Adolescent Initiation of Sexual Behavior,” *Pediatrics* 114, no. 3 (2004).

3—A. Chandra, S. C. Martino, R. L. Collins, et al., “Does Watching Sex on Television Predict Teen Pregnancy? Findings from a National Longitudinal Survey of Youth,” *Pediatrics* 122, no. 5 (2008): 1047–1054.

4—G. M. Wingood, R. J. DiClemente, K. Harrington, S. Davies, E. W. Hook III, and M. K. Oh, “Exposure to X-Rated Movies and Adolescents’ Sexual and Contraceptive-related attitudes and Behavior,” *Pediatrics* 107, no. 5 (2001): 1116–1119.

10. A 2014 study in Australia conducted by the Burnet Institute’s Centre for Population Health found that weekly porn use was significantly associated with early sexual behavior, inconsistent condom use, sexting, and anal sex.

● “Burnet Studies Shed Light on Sexual Behaviour of Teenagers” (2014, October 9). Retrieved October 9, 2014, from Burnet Institute: http://www.burnet.edu.au/news/435_burnet_studies_shed_light_on_sexual_behaviour_of_teenagers.

11. Adolescents report that pornography influences adolescent sexual behavior.

● Christina Rogala and Tanja Tydén, “Does Pornography Influence Young Women’s Sexual Behavior?” *Women’s Health Issues* 13, no. 1 (2003): 39–43; Elisabet Häggström-Nordin, Tanja Tydén, and Ulf Hanson, “Associations Between Pornography Consumption and Sexual Practices Among Adolescents in Sweden,” *International Journal of STD & AIDS* 16, no. 2 (2005): 102–107.

12. “There is some evidence that males’ consumption of pornography is informing increased interest in, demand for, and participation in particular sexual practices such as anal intercourse and extra-vaginal ejaculation, both of which are pornographic staples.”

● Michael Flood, “Young Men Using Pornography,” in *Everyday Pornography*, edited by Karen Boyle. New York: Routledge, 2010.

13. Higher frequency of viewing pornographic videos is associated with higher rates of having anal sex, group sex, and hook-ups.

● Elisabet Häggström-Nordin, Tanja Tydén, and Ulf Hanson, “Associations Between Pornography Consumption and Sexual Practices Among Adolescents in Sweden,” *International Journal of STD & AIDS* 16, no. 2 (2005): 102–7.

14. “In the US, just 16 percent of women aged 18 to 24 said they’d tried anal sex in 1992. Today, at least one in five women aged 18 to 19, and two in five women aged 20 to 24 have tried it. Many times, because pregnancy is far less likely to occur because of anal sex, young people think they don’t need to use protection.’ What they are unaware of is how much easier it is to acquire a sexually transmitted infection through anal sex. Not incidentally, half of young people in the 15 to 24-year-old age group will get a sexually transmitted infection by 25 years old.² Also, because young men often masturbate with a ‘deathgrip’ to online porn, having sex with a condom substantially reduces their ability to become aroused, so many young men prefer not to wear condoms during sex for fear of not getting or maintaining an erection.”

● Philip Zimbardo and Nikita D. Coulombe, *Man (Dis)connected* (London: Rider Books), 2015.
1—see James, S.D. (2008, December 10), ‘Study Reports Anal Sex on Rise Among Teens’. Retrieved October 8, 2014, from ABC News: <http://abcnews.go.com/Health/story?id=6428003>.
2—see Cates, J.R., Herndon, N.L., Schulz, S.L., and Darroch, J.E. (2004, February), *Our Lives, Our Futures: Youth and Sexually Transmitted Diseases* (p. 1). Retrieved July 22, 2014, from School of Journalism and Mass Communication, University of North Carolina at Chapel Hill: <http://joancates.web.unc.edu/files/2010/11/Our-Voices-Our-Lives-Our-Futures-Youth-and-Sexually-Transmitted-Diseases.pdf>.)”

15. Five studies conducted on Swedish youth found that young men who regularly consume pornography are more likely to have had anal intercourse with a girl and to have tried acts seen in pornography, and that girls who have seen pornography are more likely to have had anal sex. Most of the young women in the studies did not enjoy anal intercourse and did not want to do it again.

● Tyden et al, 2001, Rogala and Tyden 2003, Tyden and Togala 2004; Haggstrom-Nordin et al 2005, Johansson and Hammaren 2007.

16. A UK survey found that the average boy watches nearly two hours of porn per week. Even among those categorized as light users, a third had missed an important deadline or appointment because they couldn’t step away from porn.

● Daily Mail Reporter (2011, April 22), ‘Young Men Watch TWO HOURS of Porn Online Each Week ... and One in Three have Missed a Deadline Because of It’. Retrieved June 16, 2014, from Daily Mail: <http://www.dailymail.co.uk/news/article-1379464/Porn-Young-men-watch-2-HOURS-week-missed-deadline-it.html>.

17. “A 2014 Belgian study of 325 adolescent boys found that frequent use of online porn lowered academic performance. The researchers found that boys who went through puberty earlier and boys who scored high in sensation-seeking watched more porn than other boys their age. It was not just the time devoted to porn that displaced engagement with other activities, there was a cognitive absorption effect where the complete involvement in a highly pleasurable activity – porn – excited cognitive, sensory and imaginative curiosity to the point where a boy lost track of time and other attentional demands became inferior. Using the excitation transfer model and sexual behaviour sequence of psychologists Dolf Zillmann and Donn Byrne, respectively, the researchers also suggested that the high states of arousal achieved in porn stimulated impulsive and ‘restless’ behaviour that may impair behaviour that required long periods of constant focus and attention.”

● Philip Zimbardo and Nikita D. Coulombe, *Man (Dis)connected* (London: Rider Books), 2015; for more information on the study mentioned, see Beyens, I. Vandembosch, L., and Eggermont, S. (2015), ‘Early Adolescent Boys’ Exposure to Internet Pornography: Relationships to Pubertal Timing, Sensation Seeking, and Academic Performance’, *Journal of Early Adolescence* (in-press). Retrieved September 29, 2014, from <https://lirias.kuleuven.be/handle/123456789/458526>.

18. Media plays an important role in shaping adolescents beliefs about how males and females behave in romantic relationships.

● J. D. Brown and K. L. L’Engle, “X-Rated: Sexual Attitudes and Behaviors Associated with US Early Adolescents’ Exposure to Sexually Explicit Media,” *Communication Research* 36, no. 1 (2009): 129–151.

19. “The relationship between media violence and real-life aggression is nearly as strong as the impact of cigarette smoke on lung cancer: not everyone who smokes will get lung cancer, and not everyone who views media violence will become aggressive themselves. However, the connection is significant. The most problematic forms of media violence include attractive and unpunished perpetrators, no harm to victims, realism, and humor.”

● Victor C. Strasburger, Amy B. Jordan, and Ed Donnerstein, “Health Effects of Media on Children and Adolescents,” *Pediatrics* 125, no. 4 (2010): 756–767.

20. “Results suggest that both the frequency of sexually explicit material [SEM] viewing and having a diverse SEM media diet are uniquely and significantly associated with sexual behavior.”

● Elizabeth M. Morgan, “Associations between Young Adults’ Use of Sexually Explicit Materials and Their Sexual Preferences, Behaviors, and Satisfaction,” *Journal of Sex Research* 48, no. 6 (2011): 520–530.

21. In a study conducted using college students, males were randomly assigned to watch one of three films, one of erotica, one of nonsexual news coverage of war, or one of pornography. After the films they were invited to attend a seemingly separate experiment in which they were paired with a female and asked to work on a problem-solving task. They were filmed while solving the problem, and researchers coded the taped interactions for eye gaze, interruptions, touch, unwanted

sexual remarks, and disregard of a partner's suggestions. Those participants who have viewed the sexually explicit films (erotica and pornography) exhibited more dominant behaviors, touched their female partners for longer periods of time, and ignored their partner's ideas and suggestions more often than those who had watched the news coverage video. Men who had viewed the pornography video interrupted their partners more often and showed more anxious behaviors than those who had watched one of the other two videos. The researchers also looked at the female partner's behaviors and found that even though the women were unaware that their partners had watched the films, their behavior correlated highly with their male partner's behavior. Women who were partnered with men who had viewed either of the sexually explicit films exhibited similar levels of anxiety, physical proximity, partner touch, and gazing as their male partners, suggesting that women partners of porn users can be negatively affected by their partner's use of pornography even when they aren't aware of said use.

● Anthony Mulac, Laura Jansma, and Daniel Linz, "Men's Behavior Toward Women After Viewing Sexually Explicit Films: Degradation Makes a Difference," *Communication Monographs* 69, no. 4 (December 2002): 311–28.

22. Adult exposure to pornography is connected with users trying to get partners to act out scenes from pornographic films.

● E. Cramer and J. McFarlane, "Pornography and Abuse of Women," *Public Health Nursing* 11, no. 4 (1994): 268–272.

23. Adult exposure to pornography is associated with engaging in more behavioral aggression.

● E. Donnerstein, "Pornography: Its Effects on Violence Against Women," in *Pornography and Sexual Aggression*, Eds. Neil M. Malamuth and Edward Donnerstein (New York: Academic Press, 1984; M. Allen, D. D'Allesio, and K. Brezgel, "A Meta-Analysis Summarizing the Effects of Pornography II: Aggression After Exposure," *Human Communication Research* 22 (1995): 258–283.

24. Pornography use by adults is associated with using verbal coercion to have sex.

● S. B. Boeringer, "Pornography and Sexual Aggression: Associations of Violent and Nonviolent Depictions with Rape and Rape Proclivity," *Deviant Behavior* 15 (1994): 289–304.

25. "In our 20,000 person survey, when we asked participants if they thought there was any connection between excessive gaming or porn use and romantic relationships, 3 out of 4 women ages 18 to 24 said 'emotional immaturity or unavailability' and 3 out of 5 men ages 18 to 24 said 'lack of interest in pursuing or maintaining a romantic relationship/social isolation.'"

● Nikita Coulombe, co-author of *Man (Dis)Connected*, (London: Rider Books, 2015, in a private email sent July 7, 2015.

26. Dr. Victor B. Cline, a clinical psychologist, has found that in his experience working with individuals with pornography addiction that "The first change that happened was an addiction-effect. The porn-consumers got hooked. Once involved in pornographic materials, they kept coming back for more and still more. ... The second phase was an escalation-effect. With the passage of time, the addicted person required rougher, more explicit, more deviant, and 'kinky' kinds of sexual material to get their 'highs' and 'sexual turn-ons.' It was reminiscent of individuals afflicted with drug addictions. ... The third phase was desensitization. Material ... which was originally perceived as shocking, taboo-breaking, illegal, repulsive, or immoral, in time came to be seen as acceptable and commonplace. ... The fourth phase was an increasing tendency to act out sexually the behaviors viewed in the pornography, including ... frequenting massage parlors."

● Victor B. Cline, *Pornography's Effects on Adults and Children* (New York: Morality in Media, 2001), <http://www.scribd.com/doc/20282510/Dr-Victor-Cline-Pornography-s-Effects-on-Adults-and-Children#scribd>

27. Frequent porn users are more likely to experience depression and poor physical health compared with nonusers, according to a recent study from the Centers for Disease Control and Prevention. The findings suggest that due to porn taking time away from healthy in-person interactions, it may begin a cycle of social and sexual isolation.

● Philip Zimbardo and Nikita D. Coulombe, *Man (Dis)connected* (London: Rider Books), 2015.

28. "At the heart of many of the controversies about pornography is the topic of aggression and degradation. The social significance of these issues is undeniable, as much of the pornography effects research has shown pornography is more likely to have a negative influence on the thoughts, attitudes, or behavior of audience members if it features aggression."¹

● Bridges, A. J., Wosnitzer, R., Scharrer, E., Chyng, S., & Liberman, R. (2010). Aggression and sexual behavior in best selling pornography videos: A content analysis update. *Violence against Women*, 16(10), 1065–1085.
1—Donnerstein, E., Linz, D. G., & Penrod, S. (1987). *The question of pornography*. New York: Free Press; and Linz, D. G., Donnerstein, E., & Penrod, S. (1987). The findings and recommendations of the Attorney General's Commission on Pornography: Do the psychological facts fit the political fury? *American Psychologist*, 42, 946–953."

29. Using degrading pornography has been found to increase dominating and harassing behavior toward women.

● Hall, G. C. N., Hirschman, R., & Oliver, L. L. (1994). Ignoring a woman's dislike of sexual material: Sexually impositions behavior in the laboratory. *Journal of Sex Research*, 31, 3-10; and Mulac, A., Jansma, L. L., & Linz, D. G. (2002). Men's behavior toward women after viewing sexually-explicit films: Degradation makes a difference. *Communication Monographs*, 69, 311-329.

30. The likelihood of someone engaging in sexual harassment is significantly correlated with the amount of sexually explicit material they have been exposed to.

● Azy Barak et al., "Sex, Guys, and Cyberspace: Effects of Internet Pornography and Individual Differences on Men's Attitudes Toward Women," *Journal of Psychology and Human Sexuality* 11 no. 1 (1999): 63-91.

31. “Some [patients I was treating that had been increasingly looking at pornography online] gently tried to persuade their lovers to act like porn stars, and they were increasingly interested in ‘f***ing’ as opposed to ‘making love.’ Their sexual fantasy lives were increasingly dominated by the scenarios that they had, so to speak, downloaded into their brains, and these new scripts were often more primitive and more violent than their previous sexual fantasies.”

● Norman Doidge, *The Brain That Changes Itself* (New York: Penguin Books, 2007).

32. Research has repeatedly shown higher exposure to pornography and sexual images to be associated with earlier initiation of sexual activity, greater sexual risk-taking behavior, and increased acceptance of sexual promiscuity.

● Gina M. Wingood et al., “Exposure to X-Rated Movie and Adolescents’ Sexual and Contraceptive-Related Attitudes and Behaviors,” *Pediatrics* 107, no 5 (5 May 2001): 1116-19.

33. “Of particular concern is the way in which young people are now uploading sexualized personal content which is then immediately available for peers and others. According to one study completed by the National Campaign to Prevent Teen and Unplanned Pregnancy in America, as many as 1 in 5 teenagers have electronically sent a nude or semi-nude image or video of themselves. ... Blended with the concern that young people may be jeopardizing their reputations and employment prospects is the fear that such photos could fall into the hands of pedophiles, as once those photos are online it is virtually impossible to control how they circulate or where they end up. ... In the above study it was found that 51% of teen girls say ‘pressure from a guy’ is one reason they send sexy messages or images, and 52% of girls who had sent images said they did so as a ‘sexy present’ for their boyfriend.”

● Nina Funnell, “Sexting and Peer-to-Peer Porn,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 34–40. North Melbourne, Australia: Spinifex Press, 2011.

1. Nearly two-thirds of attorneys at the 2003 meeting of the American Academy of Matrimonial Lawyers had seen a sudden rise in divorces related to the Internet. Of those, 58 percent were the result of a spouse using excessive amounts of Internet porn. “Eight years ago, pornography played almost no role in divorces in this country. Today, there are a significant number of cases where it plays a definite part in marriages breaking up.”

● Richard Barry, former president of the American Academy of Matrimonial Lawyers, as quoted in Pamela Paul, “From Pornography to Porno to Porn: How Porn Became the Norm,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 3–20. Princeton, New Jersey: Witherspoon Institute, 2010.

2. “Some of the most significant impacts on women include increased risk of marital distress, separation, and divorce; increased isolation; and increased risk of abuse.”

● Jill C. Manning, “The Impact of Pornography on Women: Social Science Findings and Clinical Observations,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 69–88. Princeton, New Jersey: Witherspoon Institute, 2010.

3. A study looking at how couples were impacted by cybersex addiction found cybersex addiction to be a major contributing factor to separation and divorce among affected couples. While several online sexual activities were listed in the study, pornography use was involved in every case.

● Jennifer P. Schneider, “Effects of Cybersex Addiction on the Family: Results of a Survey,” *Sexual Addiction & Compulsivity* 7, nos. 1 and 2 (2000): 31–58.

4. Using degrading pornography has been shown to cause users to be more harsh in their evaluations of real-life partners.

● Jansma, L. L., Linz, D. G., Mulac, A., & Imrich, D. J. (1997). Men’s interactions with women after viewing sexually explicit films: Does degradation make a difference? *Communications Monographs*, 64, 1–24.

World

3.7

How Pornography Encourages Sexual Violence

1. In the most extensive content analysis of pornography to date, researchers drew the lists of 250 best-selling and 250 most-rented pornographic videos as published monthly by AVN. They pulled the 30 top videos on each list from December 2004 through June 2005 and deleted duplications, leaving a list of 275 titles from which to work. Fifty titles were randomly selected and the 304 scenes among them were analyzed. In that analysis, the researchers found:

- “88.2% contained physical aggression, principally spanking, gagging, and slapping, while 48.7% of scenes contained verbal aggression, primarily name-calling.”
- “On the whole, the pornographic scenes analyzed in this study were aggressive; only 10.2% (n 31) of scenes did not contain an aggressive act. Across all scenes, a total of 3,375 verbally and physically aggressive acts were observed. Of these, 632 were coded as instances of verbal aggression and 2,743 were coded as instances of physical aggression. On average, scenes had 11.52 acts of either verbal or physical aggression (SD 15.04) and ranged from none to 128. Physical aggression (M 9.31, SD 12.30) was much more common than verbal aggression (M 2.13, SD 4.01), occurring in 88.2% (n 268) of the scenes, whereas expressions of verbal aggression occurred in 48.7% (n 148) of the scenes.”
- “When aggressed against, 95.1% (n 3,206) of targets responded with either expressions of pleasure (e.g., encouragement, sexual moans) or neutrally (e.g., no change in facial expression or interruption to actions).”
- “Perpetrators of aggression were usually male, whereas targets of aggression were overwhelmingly female. Targets most often showed pleasure or responded neutrally to the aggression.”
- “Male character ejaculation almost always occurred outside the female character’s vagina, most frequently in her mouth (58.6%; n 178).”
- “Women were overwhelmingly the targets of aggressive acts. Across all acts of aggression, both physical and verbal, 94.4% (n 3,191) were directed toward women. Men were the perpetrators of aggression more than twice as often as women, committing 70.3% (n 2,373) of the aggressive acts recorded. In contrast, women were perpetrators of 29.4% (n 991) of all aggressive acts. Even when women were perpetrators, their targets were frequently other women (17.7%; n 598). Men were targets of only 4.2% (n 143) of aggressive acts perpetrated by women. Male-to-male aggression was present in only 0.3% (n 11) of the recorded instances and was most often verbal (only 4 instances of physical aggression with a male perpetrator and a male target were recorded).”
- “Women were verbally insulted or referred to in derogatory terms 534 times, whereas men experienced similar verbal assaults in only 65 instances”
- “The number of main characters that were portrayed in a given scene ranged from 1 to 19, with an average of 3.23. Males comprised 53.1% of the main characters.”
- “A total of 9.9% (n 30) of scenes analyzed contained positive behaviors.”
- “Sexuality, as portrayed in these popular videos, was primarily aggressive and positive behaviors were the exception rather than the rule.”

- The Bridges study ¹ found that 41 percent of popular pornographic scenes depicted rectal followed by oral penetration, which not only reduces the female actors to a demeaning role but also can expose them to potentially pathogenic coliform bacteria.

● Donald L. Hilton, “Pornography Addiction—A Supranormal Stimulus Considered in the Context of Neuroplasticity,” *Socioaffective Neuroscience & Psychology* 3 (2013): 20767.

1—A. J. Bridges, R. Wosnitzer, E. Scharrer, S. Chyng, and R. Liberman, “Aggression and Sexual Behavior in Best-Selling Pornography Videos: A Content Analysis Update,” *Violence against Women* 16, no. 10 (2010): 1065–1085.

2. Pornography makes violence appear sexy.

● Diana E. H. Russell, *Making Violence Sexy: Feminist Views on Pornography* (New York: Teachers College Press, 1993).

3. A study that both exposed participants to pornography and asked them about their pornography use found that high pornography users were higher than low-pornography users on scales measuring acceptance of rape myth, acceptance of violence against women, adversarial sex beliefs, reported likelihood of committing rape and forced sex acts, and sexual callousness. High users who were exposed to nonviolent, dehumanizing pornography had higher scores in reported likelihood of committing rape, sexual callousness, and sexually aggressive behaviors than high pornography users who weren’t shown pornography as part of the study.

● James Check and Ted Guloien, “The Effects of Repeated Exposure to Sexually Violent Pornography, Nonviolent Dehumanizing Pornography, and Erotica,” in *Pornography: Research Advances and Policy Considerations*, eds. Dolf Zillmann and Jennings Bryant (Hillsdale, N.J.: Lawrence Erlbaum Associates, 1989), 159–84.

4. “A man may learn that there isn’t any need to pay attention to a woman who is resisting, crying, screaming, struggling, or saying no, because ultimately she wants it and will enjoy it. He can conclude that her resistance is a sham and is part of a sex dance that leads to orgasm. He may assume that even her resistance is sexy and sexually arousing because it is part of the sexual template.”

● Mary Anne Layden, “Pornography and Violence: A New Look at the Research,” in *The Social Costs of Pornography*, edited by James R. Stoner Jr. and Donna M. Hughes, 57–68. Princeton, New Jersey: Witherspoon Institute, 2010.

5. “While every type of pornography (including soft-core, hard-core, violent, and rape) is correlated with using verbal coercion, drugs, and alcohol to coerce women into sexual activity,¹ the increase in attitudes supportive of sexual violence is greater following exposure to violent porn than it is following exposure to nonviolent porn.” ²

● Mike Allen et al., “Exposure to Pornography and Acceptance of the Rape Myth,” *Journal of Communication* 45, no. 1 (1995): 5–26.

1—Scot B. Boeringer, “Pornography and Sexual Aggression: Associations of Violent and Nonviolent Depictions with Rape and Rape Proclivity,” *Deviant Behavior* 15 no. 3 (1994): 289–304

6. A study that examined sexual violence found that all pornography types (soft-core, hard-core, violent, and rape) are correlated with using verbal coercion, drugs, and alcohol to sexually coerce women. All pornography types, including soft-core, are correlated with the future likelihood of raping a woman. All pornography other than soft-core are correlated with actual rape. Those who had higher past exposure to violent pornography were six times more likely to report having raped someone compared to those who reported low past exposure to pornography.

● Scot B. Boeringer, "Pornography and Sexual Aggression: Associations of Violent and Nonviolent Depictions with Rape and Rape Proclivity," *Deviant Behavior* 15, no. 3 (1994): 289-304.

7. The correlations between circulation rates for *Playboy*, *Penthouse*, *Chic*, *Club*, *Forum*, *Gallery*, *Genesis*, and *Oui* and rape rates shows that states with higher rates of circulation had higher rates of rape.

● Larry Baron and Murray Straus, "Sexual Stratification, Pornography, and Rape in the United States," in *Pornography and Sexual Aggression*, eds. Neil M. Malamuth and Edward Donnerstein (New York: Academic Press, 1984).

8. "A survey of 313 college students indicated that exposure to men's magazines was significantly associated with lower intentions to seek sexual consent and lower intentions to adhere to decisions about sexual consent."

● Stacey, J. T. Hust, Emily Garrigues Maret, Chunbo Ren, Paula M. Adams, Jessica F. Willoughby, Ming Lei, Weina Ran, and Cassie Norman, "Establishing and Adhering to Sexual Consent: The Association between Reading Magazines and College Students' Sexual Consent Negotiation," *Journal of Sex Research* 51, no. 3 (2014): 280-290.

9. Researchers have found that the more frequently men used pornography and the more violent it was, the more likely they were to coerce others into sex, including using physical force (rape).

● Mary Koss and Cheryl Oros, "Sexual Experiences Survey: A Research Instrument Investigating Sexual Aggression and Victimization," *Journal of Consulting and Clinical Psychology* 50, no. 3 (June 1982): 455-57.

10. "Researchers found that when males were shown images of a woman aroused by sexual violence and were then shown rape pornography, they were more likely than those who hadn't been exposed to the images to say that the rape victim suffered less, enjoyed being raped, and that women in general enjoy rape."

● James Check and Neil M. Malamuth, "An empirical assessment of Some Feminist Hypotheses About Rape," *International Journal of Women's Studies* 8, no. 4 (September-October 1985): 414-23.

11. "When Japanese males were exposed to a depiction of rape in which the woman appeared to enjoy the rape, they were more likely to believe that women generally enjoy rape and that that women make false accusations of rape, compared with males exposed to a rape depiction in which the women exhibited pain."

● Ken-Ichi Ohbuchi et al., "Effects of Violent Pornography Upon Viewers' Rape Myth Beliefs: A Study of Japanese Males," *Psychology, Crime, and Law* 7, no. 1 (1994): 71-81.

12. Men who viewed violent sexual scenes got higher scores on scales measuring acceptance of interpersonal violence and rape myth compared with men who viewed either a physically violent (but not sexual) or a neutral film.

● Monica G. Weisz and Christopher Earls, "The Effects of Exposure to Filmed Sexual Violence on Attitudes Toward Rape," *Journal of Interpersonal Violence* 10, No. 1 (1995): 71-84.

13. "Males shown even nonviolent but sexually objectifying and degrading scenes of women, then subsequently exposed to rape scenes were more likely to indicate that the victim felt pleasure and 'got what she wanted.'"

● Michael Milburn, Roxanne Mather, and Sheree Conrad, "The Effects of Viewing R-Rated Movie Scenes that Objectify Women on Perceptions of Date Rape," *Sex Roles* 43, nos. 9 and 10 (2000): 645-64.

14. Women exposed to pornography as children demonstrate a greater acceptance of rape myth compared with women not exposed to pornography as children.

● Shawn Corne et al., "Women's Attitudes and Fantasies About Rape as a Function of Early Exposure to Pornography," *Journal of Interpersonal Violence* 7, no. 4 (1992): 454-61.

15. High pornography users score higher on scales measuring acceptance of rape myth, acceptance of violence against women, adversarial sex beliefs, reported likelihood of committing rape and forced sex acts, and sexual callousness when compared with non-porn users.

● James Check and Ted Guloien, "The Effects of Repeated Exposure to Sexually Violent Pornography, Nonviolent Dehumanizing Pornography, and Erotica," in *Pornography: Research Advances and Policy Considerations*, eds. Dolf Zillmann and Jennings Bryant (Hillsdale, N.J.: Lawrence Erlbaum Associates, 1989), 159-84.

16. When researchers exposed high-pornography users to nonviolent but dehumanizing pornography score higher on scales measuring reported likelihood of committing rape, sexual callousness and sexually aggressive behavior when compared with high pornography users who were not shown pornography in the study.

● James Check and Ted Guloien, "The Effects of Repeated Exposure to Sexually Violent Pornography, Nonviolent Dehumanizing Pornography, and Erotica," in *Pornography: Research Advances and Policy Considerations*, eds. Dolf Zillmann and Jennings Bryant (Hillsdale, N.J.: Lawrence Erlbaum Associates, 1989), 159-84.

17. A group of males was split into two sub-groups—one that was exposed to arousing rape scenes and another that was exposed to arousing scenes that did not involve rape—then asked to reach the highest level of sexual arousal possible without direct stimulation to the penis. Researchers found that those who had seen the eroticized rape presentation were more likely to create fantasies that were sexually violent to arouse themselves than were the group not exposed to the rape scenes. For these men, rape fantasies had become arousing.

● Neil M. Malamuth, "Rape Fantasies as a Function of Exposure to Violent Sexual Stimuli," *Archives of Sexual Behavior* 10, no. 1 (1981): 33-47.

18. Men who are exposed to violent porn are six times more likely to report rape behavior compared with those who have not been exposed.

● S. B. Boeringer, "Pornography and Sexual Aggression: Associations of Violent and Nonviolent Depictions with Rape and Rape Proclivity," *Deviant Behavior* 15, no. 3 (1994): 289–304.

19. Use of pornography is the strongest correlate of sexual aggression.

● Leslie L. Crossman, *Date Rape and Sexual Aggression by College Males: Incidence and the Involvement of Impulsivity, Anger, Hostility, Psychopathology, Peer Influence, and Pornography Use*, unpublished doctoral dissertation (College Station: Texas A&M University, 1994).

20. "Attitudes supporting sexual violence lead to an increased likelihood of sexually violent behavior."

● Mary Anne Layden, "Pornography and Violence: A New look at the Research," in James R. Stoner, Jr. and Donna M. Hughes, eds. *The Social Costs of Pornography: A Collection of Papers*. Princeton, NJ: Witherspoon Institute (2010), 61

21. Pornography use by adults is associated with more self-reported likelihood of forcing a woman sexually.

● J. V. P. Check and T. H. Guloien, "The Effects of Repeated Exposure to Sexually Violent Pornography, Nonviolent Dehumanizing Pornography, and Erotica," in *Pornography: Recent Research, Interpretations, and Policy Considerations*, Eds. D. Zillmann and J. Bryant (Hillsdale, N.J.: Erlbaum, 1989).

22. Pornography use by adults is associated with using physical coercion to have sex.

● J. Carr and K. VanDeusen, "Risk Factors for Male Sexual Aggression on College Campuses," *Journal of Family Violence* 19 (2004): 279–289.

23. "Out of ... 193 cases of rape, 24% mentioned allusions to pornographic material on the part of the rapist. This is even more significant when it is understood that these comments were made by respondents without any solicitation or reference to the issue of pornography by the interviewer. The comments followed the same pattern: the assailant referred to pornographic materials he had seen or read and then insisted that the victims not only enjoyed rape but also extreme violence."

● Mimi H. Silbert and Ayala M. Pines, "Pornography and Sexual Abuse of Women," *Sex Roles* 10, nos. 11–12 (1984): 857–68.

24. Pornography use by adults is associated with engaging in date rape.

● R. Warshaw, *I Never Called It Rape*. (New York: Harper and Row, 1988).

25. Pornography use by adults is associated with engaging in marital rape.

● C. A. Simmons, P. Lehmann, and S. Collier-Tennison, "Linking Male Use of the Sex Industry to Controlling Behaviors in Violent Relationships: An Exploratory Analysis," *Violence Against Women* 14, (2008): 406–417.

26. "In a study examining marital rape, the research found that there was a correlation between pornography use and the most sadistic marital rapes."

● Rachel Kennedy Bergen, "The Reality of Wife Rape: Women's Experiences of Sexual Violence in Marriage," in *Issues in Intimate Violence*, ed. Rachel Kennedy Bergen (Thousand Oaks, Calif.: Sage, 1998), 237–50.

27. Pornography use by adults is associated with sexually abusing a battered spouse.

● J. Shope, "When Words Are Not Enough: The Search for the Effect of Pornography on Abused Women," *Violence Against Women* 10, no. 1 (2004): 56–72; C. A. Simmons, P. Lehmann, and S. Collier-Tennison, "Linking Male Use of the Sex Industry to Controlling Behaviors in Violent Relationships: An Exploratory Analysis," *Violence Against Women* 14 (2008): 406–417.

28. "In a study of domestic violence victims, 'the batterer's use of pornography and alcohol significantly increases a battered woman's odds of being sexually abused. Pornography alone increases the odds of sexual violence by a factor of almost two ... 40% of abused women indicated that their partner used violent pornography. Of those whose partners used pornography, 53% said that they had been asked or forced to enact scenes they had been shown, and 26% had been reminded of pornography by an abuser during the abuse. Of the 40% who had been raped, 73% said that their partners had used pornography. [These studies may not indicate that pornography causes battering, but they do suggest that battering may be expanded to include sexual violence when pornography is involved.]"

● Janet H. Shope, "When Words Are Not Enough: The Search for the Effect of Pornography on Abused Women," *Violence Against Women* 10, no. 1 (2004): 56–72.

29. In a study of women who had been battered by their partner, researchers found that when the partner was a pornography user the odds that a woman reported that partner sexually assaulting her nearly doubled. More than half reported that their partner's pornography use had played a part in their sexual assault. Alcohol use did not significantly increase the chance of sexual assault beyond porn use alone.

● Janet Hinson Shope, "9: The Search for the Effect of Pornography on Abused Women," *Violence Against Women* 10, no. 1 (2004) 56–72.

30. A meta-analysis of 33 studies found that exposure to either nonviolent or violent porn increased behavioral aggression, including both violent fantasies and actual violent assaults. Violent pornography showed the strongest negative effect. The pattern was found in adults and minors and in studies that focused on perpetrators and victims.

● Mike Allen et al., "Exposure to Pornography and Acceptance of the Rape Myth," *Journal of Communication* 45, no. 1 (1995): 5–26.

31. “A total of nine studies and 2,309 participants were included in the final meta-analysis ... The average correlation between pornography consumption and attitudes supporting violence against women using a fixed effect model was significant ... Across six studies and 1,617 participants, the average correlation between nonviolent pornography and attitudes supporting violence against women using a fixed effect model was found to be significant ... The result of the present meta-analysis shows a significant overall relationship between pornography consumption and attitudes supporting violence against women in nonexperimental studies. This relationship was found to be significantly stronger for violent pornography than for nonviolent pornography, although both types of pornography showed significant positive associations with attitudes supporting violence against women. ... the type of attitudes studied here have been found to consistently predict “real world” sexually aggressive proclivities and behaviors in both cross-sectional and longitudinal research.”

● Hald, G. M., Malamuth, N. M., & Yuen, C. (2010). Pornography and attitudes supporting violence against women: Revisiting the relationship in nonexperimental studies. *Aggression and Behavior*, 36(1), 14-20.

32. Pornography use increases the odds of sexual violence being perpetrated by the porn-using partner by a factor of almost two, and use of both pornography and alcohol increases the odds of sexual violence by a factor of three.

● Janet H. Shope, “When Words Are Not Enough: The Search for the Effect of Pornography on Abused Women,” *Violence Against Women* 10, no. 1 (2004): 56–72.

33. Using degrading pornography has been found to cause a loss of compassion for female rape victims.

● Zillmann, D. (1989). Effects of prolonged consumption of pornography. In D. Zillmann & J. Bryant (Eds.), *Pornography: Research advances and policy considerations* (pp. 127-158). Hillsdale, NJ: Lawrence Erlbaum; and Zillmann, D., & Bryant, J. (1982). Pornography, sexual callousness, and the trivialization of rape. *Journal of Communication*, 32, 10-21.

34. “This consensual depiction of aggression is concerning as we run the risk of rendering true aggression against women invisible.”

● Sun, C., & Picker, M. (Co-producers & Co-directors). (2008). *The price of pleasure: Pornography, sexuality and relationships*. Northampton, MA: Media Education Foundation) (as quoted in Bridges, A. J., Wosnitzer, R., Scharrer, E., Chyng, S., & Liberman, R. (2010). Aggression and sexual behavior in best selling pornography videos: A content analysis update. *Violence against Women*, 16(10), 1065-1085.

35. In an analysis of pornographic content and attitudes supporting violence against women, researchers found “an overall significant positive association between pornography use and attitudes supporting violence against women in nonexperimental studies. In addition, such attitudes were found to have a significantly higher correlation with the use of sexually violent pornography than with the use of nonviolent pornography, although the latter relationship was also found to be significant.”

● Hald, G. M., Malamuth, N. M., & Yuen, C. (2010). Pornography and attitudes supporting violence against women: Revisiting the relationship in nonexperimental studies. *Aggression and Behavior*, 36(1), 14-20.

36. “The proposed processes responsible for predicting an association between nonviolent pornography and aggressive responses, including attitudes supporting violence against women, rely on the fact that nonviolent pornography often portrays women as highly sexually promiscuous and frequently as being dominated and ‘used’ by males. These images may prime and reinforce various sexually aggressive schemata and ‘rape myth’ attitudes, e.g., that some women deserve to or enjoy being harassed, maltreated sexually, or raped.”

● Berkel LA, Vandiver BJ, Bahner AD. 2004. Gender role attitudes, religion, and spirituality as predictors of domestic violence attitudes in white college students. *J Coll Stud Dev* 45:119–131.” (Hald, G. M., Malamuth, N. M., & Yuen, C. (2010). “Pornography and attitudes supporting violence against women: Revisiting the relationship in nonexperimental studies.” *Aggression and Behavior*, 36(1), 14-20.

37. Persons who have been charged with a child pornography offense—regardless of whether they have ever engaged in a sexual offense against children—are more likely to be pedophiles than those who have previously committed offenses against children but do not use child pornography.

● Michael C. Seto, James Cantor, and Ray Blanchard, “Child Pornography Offenses Are a Valid Diagnostic Indicator of Pedophilia,” *Journal of Abnormal Psychology* 115, no. 3 (2006):610-15.

38. Researchers have demonstrated an 85% correlation between viewing child pornography and committing sexual offenses against children.

● Bourke M, Hernandez A. The ‘Butner Study’ redux: A report of the incidence of hands-on child victimization by child pornography offenders. *J Fam Violence* 2009;24:183-91.

39. “Portrayals of women expressing pleasure while being aggressed against have significant implications in terms of the effects of pornography on consumers. Social cognitive theory¹ suggests that whether an individual will model aggression learned from viewing a media text depends in large part on whether the act they observed was rewarded or punished. By extension, viewers of pornography are learning that aggression during a sexual encounter is pleasure-enhancing for both men and women.”

● Bridges, A. J., Wosnitzer, R., Scharrer, E., Chyng, S., & Liberman, R. (2010). Aggression and sexual behavior in best selling pornography videos: A content analysis update. *Violence against Women*, 16(10), 1065-1085.
1—Bandura, A. (2001). Social cognitive theory of mass communication. *Media Psychology*, 3, 265-299.

40. “Porn shuts down a boy’s natural feeling, as it places little value on intimacy, empathy or respect of partners in pornographic material. A growing body of research also shows that viewing porn is likely to make boys more sexually aggressive, to do whatever they feel they can get away with, and to want to act out what they have seen.”

● Maggie Hamilton, “Groomed to Consume Porn: How Sexualized Marketing Targeting Children,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 16–24. North Melbourne, Australia: Spinifex Press, 2011.

41. “Excellent social science research over the past 25 years has documented the effects of exposure to pornography, providing a basis to extrapolate the predictable consequences of mass social saturation. The catharsis hypothesis—the notion that the more pornography men use, the less abusive sex they will seek out elsewhere—has been scientifically disproved. Closer to the reverse has been found: it primes the pump. As women have long known, use of pornography conditions consumers to objectified and aggressive sex, desensitizing them to domination and abuse, requiring escalating levels of violence to achieve a sexual response. Use of pornography is also correlated with increased reports by perpetrators of aggressive sex and with increased inability to perceive that sex is coerced. Consumers thus become increasingly unable to distinguish rape from other sex. Some become addicted, virtually none is unaffected, the evidence as a whole suggests.”

● Catharine A. MacKinnon, “X-Underrated: Living in a World the Pornographers Have Made,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 9–15. North Melbourne, Australia: Spinifex Press, 2011.

42. A Canadian study looking at teenage boys found that those who regularly used pornography tended to believe it was acceptable to hold a girl down and force her into sex.

● Sally Wellard, “Cause and Effect,” *Community Care* (March 15–21, 2001): 26–27.

43. “A 2008 White Ribbon Foundation report found 1 in 7 boys thought it was OK to force a girl to have sex if she had been ‘flirting’ with him.”

● Maggie Hamilton, “Groomed to Consume Porn: How Sexualized Marketing Targeting Children,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 16–24. North Melbourne, Australia: Spinifex Press, 2011.

44. “With the ready access young children have to porn we’re seeing an increase in sexual predators who are the same age as their victims. It’s sobering to talk with professionals counselling sexual assault victims, who are now dealing with ever more incidents amongst primary school-age children.”

● Maggie Hamilton, “Groomed to Consume Porn: How Sexualized Marketing Targeting Children,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 16–24. North Melbourne, Australia: Spinifex Press, 2011.

45. “For decades, research literature has indicated that children act out behaviors they have viewed or experienced. Sexual assault units also report that girls are presenting who have been subject to the kinds of sexual assaults previously only seen with adult women.”

● Maggie Hamilton, “Groomed to Consume Porn: How Sexualized Marketing Targeting Children,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 16–24. North Melbourne, Australia: Spinifex Press, 2011.

46. “When critics speak of commercial advertising as propaganda for capitalism, we are not asserting that a specific advertisement viewed by a person is the direct cause of that person’s decision to purchase a good or service. Even advertisers recognize this, reflected in the common quip, ‘We know half our ads don’t work, but we don’t know which half.’ Critics cannot explain exactly how a specific advertisement or series of advertisements cause people to think of themselves as consumption machines rather than human beings. Instead, we recognize that in a larger culture which encourages that sense of self, the endless barrage of commercial advertising carrying the same message plays a role in that process. This is the sense in which we can see pornography as propaganda for a rape culture.”

● Robert Jensen, “Stories of a Rape Culture: Pornography as Propaganda,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 25–33. North Melbourne, Australia: Spinifex Press, 2011.

47. “Pornography plays a powerful role in creating images that glorify ‘pimp and ho’ culture as sexual, exciting, and desirable. It creates a critical backdrop to sexual culture on campus. ... The reason this violent sexual campus culture matters is twofold. First, these attitudes contribute to the astoundingly high level of rape and sexual assault on campus. Government studies in the United States estimate that 1-in-4 or 1-in-5 women will be sexually assaulted during her time in college. ¹ There is an ‘inextricable correlation between men’s consumption of pornography and corresponding misogynist attitudes about women, sexual harassment and rape.’ ² When such attitudes are allowed to exist—if not prevail—unaddressed on a college campus, women are clearly at risk of sex discrimination that will affect their educational experience.”

● Diane L. Rosenfeld, “Who Are You Calling a ‘Ho’?: Challenging the Porn Culture on Campus,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 41–52. North Melbourne, Australia: Spinifex Press, 2011.

1—Christopher Krebs, Christine H. Lindquist, Tara D. Warner, Bonnie S. Fisher, and Sandra I. Martin, *The Campus Sexual Assault Study: Final Report*, National Criminal Justice Reference Serv., 2007.

2—Laura Jarrett, “The Blueprint for Sexual Harassment: How Schools Can Combat Sexual Misconduct as Required Under Title IX by Addressing the Harm of Pornography” (on file with the author).

48. “I have seen a tremendous rise in the number of multi-perpetrator sexual assaults over the past few years, correlative with the rise in ‘gonzo’ porn, that involves several men taking turns penetrating, or penetrating all at once, one women. Rather than being spontaneous cases of drunken misbehavior, evidence indicates that the vast majority of these rapes (around 71%) are premeditated and even scripted. ¹ Acts of sexual violence appear not to be random, unrelated events, but rather central, even necessary, to the bonding that supports the sexual culture.”

● Diane L. Rosenfeld, “Who Are You Calling a ‘Ho’?: Challenging the Porn Culture on Campus,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 41–52. North Melbourne, Australia: Spinifex Press, 2011.

1—Michael Kimmel, *Guyland*, New York: HarperCollins, 2008.

49. “The socially corrosive power of unregulated commercialized pornography is clearly acknowledged throughout scientific literature. Not only does pornography activate and reinforce inappropriate cognitive representations (fostering sexual preoccupation), repeated exposure to pornography has been found to ‘help shape an individual’s fantasies, perceptions, rationalizations, and deeper core beliefs.’” Empirical studies (for a summary of studies and findings, see Bridges et al., 2010)² into the effects of pornography have consistently shown that the degradation encouraged by pornography encourages negative attitudes and dominant behaviors towards women, including the heightened proclivity toward coercive sex. This is especially true of pornography that advocates aggression and violence towards women, which ... can be considered the overwhelming majority.”

● Robi Sonderegger, “Neurotica: Modern Day Sexual Repression,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 69–77. North Melbourne, Australia: Spinifex Press, 2011.

1—Drew Kingston, Paul Fedoroff, Philip Firestone, Susan Curry, and John Bradford, “Pornography Use and Sexual Aggression: The Impact of Frequency and Type of Pornography Use on Recidivism Among Sexual Offenders,” *Aggressive Behavior* 34, no. 4 (2008): 341–251.

2—Ana Bridges, Robert Wosnitzer, Erica Scharrer, Chyng Sun, and Rachel Liberman, “Aggression and sexual Behavior in Best Selling Pornography Videos: A Content Analysis Update,” *Violence Against Women* 16, no. 10 (2010): 1065–1085.

50. “To the extent that consumers of mainstream pornography learn that verbal and physical sexual aggression is rewarding, they are more likely to incorporate coercive aggression in their own sexual encounters. An overwhelming number of empirical studies have now established a significant relationship between the consumption of sexually explicit media and sexual delinquency.”

● Robi Sonderegger, “Neurotica: Modern Day Sexual Repression,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 69–77. North Melbourne, Australia: Spinifex Press, 2011.

51. “Irrespective of additional mediating/moderating variables, pornography contributes directly to pro-sexual-offending attitudes, intimate relationship difficulties, sexual callousness, disinterest in the suffering of others, and desensitization to violence against women, acceptance of male dominance and female servitude, leniency toward rapists in legal proceedings, accepting various rape myths (that rape can be justified), self-assessed proclivity to force sex on women, and the direct instigation of sexual assault.¹ Pornography has been rendered ‘instrumentally causal in the aetiology of sex offending.’”²

● Robi Sonderegger, “Neurotica: Modern Day Sexual Repression,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 69–77. North Melbourne, Australia: Spinifex Press, 2011.

1—Davide Dettore and Alberto Giannelli, “Explorative Survey on the Level of Online Sexual Activities and Sexual Paraphilias,” *Abstracts of the 9th Conference of the European Federation of Sexology* 17, no. 1(2008): S15–S15; William Marshall, “Revisiting the Use of Pornography by Sexual Offenders: Implications for Theory and Practice,” *Journal of Sexual Aggression* 6, nos. 1&2 (2000): 67–77; Max Waltman, “Rethinking Democracy: Pornography and Sex Inequality,” (University of Michigan Law School) Paper presented at the Western Political Science Association San Diego (2008): 1–41.

2—Catherine Itzin “Pornography and the Construction of Misogyny,” *Journal of Sexual Aggression* 8, no. 3 (2002): 4–42.

52. “Meta-analyses of published research show consistent and reliable evidence that exposure to explicitly violent as well as so-called non-violent pornography has a direct influence on gender violence. This is true not only for adults, but also minors. ... It has also been demonstrated that juvenile sex offenders who consume pornography have a greater propensity to engage in rape, forced oral or digital penetration, verbal aggression, exhibitionism, and bestiality.¹ In fact, research into developmental harm from pornography exposure is so conclusive, that the empirical literature now considers it to be beyond question.”²

● Robi Sonderegger, “Neurotica: Modern Day Sexual Repression,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 69–77. North Melbourne, Australia: Spinifex Press, 2011.

1—Eileen Alexy, Ann Burgess, and Robert Prentky, “Pornography Use as a Risk Marker for an Aggressive Pattern of Behavior Among Sexually Reactive Children and Adolescents,” *Journal of the American Psychiatric Nurses Association* 14, no. 6 (2009): 442–453.

2—Elizabeth Oddone-Paolucci, Mark Genius, and Claudio Violato, “A Meta-Analysis of the Published Research on the Effects of Pornography,” *Medicine, Mind, and Adolescence* 7, nos. 1&2 (2000): 101–112.

53. “Based on the empirical research ... it could well be argued that to produce, distribute, consume, or even passively condone pornography, is to endorse sexual violence against women.”

● Robi Sonderegger, “Neurotica: Modern Day Sexual Repression,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 69–77. North Melbourne, Australia: Spinifex Press, 2011.

54. “Showing ways in which women can be violated (even in animations) is enough to escalate the desire to hurt real women.”

● Susan Hawthorne, “Capital and the Crimes of Pornographers: Free to Lynch, Exploit, Rape and Torture,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 107–117. North Melbourne, Australia: Spinifex Press, 2011.

55. “Malamuth and colleagues¹ have shown that in combination with other factors, pornography contributes to men’s increased sexual aggression against women.”

● Melissa Farley, “Pornography Is Infinite Prostitution,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 150–159. North Melbourne, Australia: Spinifex Press, 2011.

1—Neil M. Malamuth and Eileen V. Pitpitan, “The Effects of Pornography Are Moderated by Men’s Sexual Aggression Risk,” in *Pornography: Driving the Demand in International Sex Trafficking*, edited by David E. Guinn and Julie DiCaro, 125–143. Los Angeles: Captive Daughters Media, 2007.

56. “The Mizoram [India] police also found a link between the increased incidence of sexual assaults including rape and pedophilia, and the watching of pornographic tapes and videos.”

● Ruchira Gupta, “Pornography in India,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 239–248. North Melbourne, Australia: Spinifex Press, 2011.

57. “Even pornographer Joe Gallant said: ‘I hate to say, but I think the future of American porn is violence. I see the signs of it already ... the culture will become much more accepting of gang rape movies and abuse movies.’ What illustrates his sentiment most vividly is the popular S&M website kink.com, where women are tied up, chained, gagged, whipped, electrified, immersed in water, and penetrated by machines. Even though my film concerns mainstream pornography, and does not include BDSM materials, I included clips from kink.com because this type of image has become popular, even mainstream. Kink.com has been featured in The New York Times as innovative, technologically savvy, and profitable, and is touted as a company just like any other company, but in some ways better (it gives its employees good benefits and retirement plans.)”

● Chyng Sun, “Investigating Pornography: The Journey of a Filmmaker and Researcher,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 171–178. North Melbourne, Australia: Spinifex Press, 2011

58. The [Portman] clinic’s most recent survey of adolescent referrals showed that ‘sexually inappropriate behavior’ dominated the caseload, with more than 50 per cent of patients committing some form of sexual assault. Threats of violence to others and cruelty to animals were also frequent reasons for attendance. But increasingly Woods has found that internet pornography is almost as serious a problem for adolescents as for adults. ‘I do think it has a profoundly corrupting effect on youngsters, and leads them into all sorts of wrong thinking: sex is instantly available, all these glamorous people. An adult finds it easier to make a distinction between reality and the fantasy. A boy without sexual experience may get confused about whether he’s more excited by the male or female, and so sexual aggression targeted against a younger person may be a way of him proving his masculinity, showing that he’s not the submissive one. The boy will often talk to us about this - he fears he may be homosexual, so he assaults a girl.’”

● Simon Garfield, “Porn Addicts, Sex Offenders, Rapists, Paedophiles,” *The Observer*, November 22, 2008, <http://www.theguardian.com/lifeandstyle/2008/nov/23/health-wellbeing-therapy-society>

1. Pornography “normalize[s] prostitution and commercial sexual exploitation.”

● Laura Lederer, “Four Links between Sex Trafficking and Illegal Pornography,” presentation at a Capitol Hill briefing on pornography harms, Washington, DC, June 15, 2010, https://www.youtube.com/watch?v=jSRxpVDNp-GI&list=PLD61810A3993D3E50&index=4&feature=plpp_vieo

2. “Pornography is prostitution for mass consumption.”

● CitizenLink, “Pornography Is Prostitution for Mass Consumption,” transcript of an interview with Lisa Thompson, Colorado Springs, June 14, 2010, <http://www.citizenlink.com/2010/06/14/pornography-is-prostitution-for-mass-consumption/>.

3. “Pornography, by its very nature, is an equal opportunity toxin. ... The damage is both in the area of beliefs and behaviors. The belief damage may include Pornography Distortion [and] Permission-Giving Beliefs. ... The behavioral damage includes ... illegal behaviors. ... Pornography Distortion is a set of beliefs based in pornographic imagery, sent to the viewer while they are aroused and reinforced by the orgasm. An example of Pornography Distortion would include beliefs such as ‘Sex is not about intimacy, procreation, or marriage. Sex is about predatory self-gratification. ...’ Permission-Giving Beliefs are a set of beliefs that imply that my behavior is normal, acceptable, common and/or that my behavior doesn’t hurt anyone. ... Examples would include ‘All men go to prostitutes,’ ... Those who use pornography have also been shown to be more likely to engage in illegal behavior as well. Research indicates, and my clinical experience supports, that those who use pornography are more likely to go to prostitutes.”

● Dr. Mary Anne Layden, Testimony before the U.S. Senate, Committee on Commerce, Science, and Transportation, Subcommittee on Science and Space, U.S. Senate, hearing on “The Brain Science behind Pornography Addiction,” November 18, 2004.

4. “For many men, however, pornography is not enough. They want to enact the fantasies, the transgressions and ultimately the degradation and violence of pornography with live women. And the place to do this is in prostitution. The sex industry expands to accommodate all tastes and all demands.”

● Janice Raymond, “Public Hearing on ‘The Impact of the Sex Industry in the EU,’” Committee on Women’s Rights and Equal Opportunities, European Parliament, January 19, 2004” (Coalition Against Trafficking in Women, New York), <http://www.europarl.europa.eu/hearings/20040119/femm/ramond.pdf>.

5. One study found that those who had paid for sex were 37 times more likely to use Internet pornography compared with those who had never gone to a prostitute.

● Steven Stack, Ira Wasserman, and Roger Kern, “Adult Social Bonds and Use of Internet Pornography,” *Social Science Quarterly* 85, no. 1 (2004): 75–88.

6. “Frequency of pornography use has been found to correlate with frequency of purchasing sex.”

● Robert W. Peters, Laura J. Lederer, and Shane Kelly, “The Slave and the Porn Star: Sexual Trafficking and Pornography,” *The Protection Project: Journal of Human Rights and Civil Society*, Issue 5 (Johns Hopkins University: Fall 2012); for more information see Melissa Farley, Emily Schuckman, Jacqueline M. Golding, Kristen Houser, Laura Jarrett, Peter Qualliotine, and Michele Decker, “Comparing Sex Buyers with Men Who Don’t Buy Sex,” paper presented at Psychologists for Social Responsibility Annual Meeting, July 15, 2011, 30–31, www.prostitutionresearch.com.

7. “Volumes have been written for and against pornography. This is a book about johns. So what’s the connection? ... Porn is often what turns the men on, revs up their sex drive, and sends them out into the night. ... The Internet is rife with postings by johns admitting to the addiction to or love for porn. ... For Bull Rider, ‘porn and mongering go together like peas and carrots. Many times ... I start out watching porn, next thing I know I am in my car looking for the real thing.’ A john called The Man says he only watches porn when he’s planning a paid encounter. ‘I watch the positions, find a girl who looks like one of the performers, and make porn the buildup to the planned party’ ... The johns’ interest isn’t lost on those hoping to sell services. Ads placed by ‘call girls’ on Craigslist now tempt prospective johns with promises of the ‘PSE’—porn star experience. The message is clear: if prostitution is the main act, porn is the dress rehearsal.”

● Victor Malarek, *The Johns: Sex for Sale and the Men Who Buy It* (New York: Arcade, 2009), 193–96.

8. “Porn addicts may want to sit in the director’s chair themselves, but most will never have the opportunity. ... What’s their solution? Webcams. A new breed of johns—cyberjohns ... seeking out websites that let them create XXX from afar. They sit alone ... and order up a woman. ... They order the woman to perform sex acts, in real time. ... As for the women in front of the cameras ..., many are from impoverished regions of the world. ... So what is this phenomenon? ... Without a doubt, it is an extension of prostitution. These men are paying to use women for their own sexual pleasure and perversion. The women may or may not be willing participants, but the preponderance of Eastern European and Asian women—typical targets of traffickers—should set off alarms.”

● Victor Malarek, *The Johns: Sex for Sale and the Men Who Buy It* (New York: Arcade, 2009), 202–4.

9. “Interviews with 854 women in prostitution in 9 countries ... made it clear that pornography is integral to prostitution. ... Almost half (49 percent) told us that pornography was made of them while they were in prostitution. Forty-seven percent ... were upset by tricks’ attempts to make them do what the tricks had previously seen in pornography.”

● Melissa Farley, “Renting an Organ for Ten Minutes: What Tricks Tell Us about Prostitution, Pornography, and Trafficking,” in *Pornography: Driving the Demand in International Sex Trafficking*, ed. David E. Guinn and Julie DiCaro, (Bloomington, IN: Xlibris, 2007), 145.

10. “Customers [of women in prostitution] show women pornography to illustrate what they want. ... 32 percent of 130 people in one study had been upset by an attempt to coerce them into performing what customers had seen in pornography.”

● Melissa Farley and Vanessa Kelly, “Prostitution: A Critical Review of the Medical and Social Sciences Literature,” *Women and Criminal Justice*, 11, no. 4 (2000): 29–64.

11. “[Pornography] stimulates the viewer to act out on other live women and girls and boys the specific acts that are sexualized and consumed in the pornography. ... As observed by T.S. in the hearings on the anti-pornography civil rights ordinance that Andrea Dworkin and I organized for the Minneapolis City Council at its request, ‘Men witness the abuse of women in pornography constantly, and if they can’t engage in that behavior with their wives, girlfriends, or children, they force a whore to do it.’ On the basis of the experiences of a group of women survivors of prostitution and pornography, she told how ... men would bring photographs of women in pornography being abused, say, in effect, ‘I want you to do this,’ and demand that the acts being inflicted on the women in the materials be specifically duplicated.”

● Catherine A. MacKinnon, “Pornography as Trafficking,” *Michigan Journal of International Law* 26, no. 4 (2005): 999–1000.

12. “The industry creates harms not just for the women in the porn, in the clubs and in the brothels, but for the status of all women. The sex industry constructs the model of what sex is, i.e. the servicing of aggressive male dominant sexuality. It makes it harder for women to create egalitarian relationships with men. The pornography and strip club industries deliver the subordinate sex class to the male ruling class in the form of bodily orifices to be stuffed, swollen, and distended anuses to be started at, naked bodies to be ogled. This industry of women’s subordination and men’s revenge stands right in the middle of the road of women’s progress towards equality and it is growing and diversifying as we speak.”

● Sheila Jeffreys, “Live Pornography: Strip Clubs in the International Political Economy of Prostitution,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 136–143. North Melbourne, Australia: Spinifex Press, 2011.

13. “The same kinds of violence against women are perpetrated in both pornography and prostitution: verbal abuse, including racist verbal abuse, contempt, degradation, physical and sexual assault, and acts that are identical to torture as defined by international legal conventions.”

● Melissa Farley, “Pornography Is Infinite Prostitution,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 150–159. North Melbourne, Australia: Spinifex Press, 2011.

14. “A survivor of pornography and prostitution described their sameness, explaining that she had been physically hurt, raped on camera, and pressured to do more extreme sex acts on film, such as anal sex, just as women in prostitution are pressured by johns to perform more extreme sex acts.”

● Melissa Farley, “Pornography Is Infinite Prostitution,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 150–159. North Melbourne, Australia: Spinifex Press, 2011.

15. “As in prostitution, women are coerced into pornography by threat, deception, or the threat of violence. After an agreement to perform one specific act of prostitution for the camera, many women tell us they are physically coerced into performing another and often more dangerous sex act.”

● Melissa Farley, “Pornography Is Infinite Prostitution,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 150–159. North Melbourne, Australia: Spinifex Press, 2011.

15. “Some of the traumatic stress (PTSD) suffered by women in prostitution results from the ways that men use pornography of them and against them. Having pictures taken of one’s prostitution causes more distress than if the prostitution was not filmed. When their prostitution is filmed, the pornography haunts them for the rest of their lives, causing the women distress and anxiety about it being viewed by family, friends, or future employers. Women in prostitution whose buyers or pimps made pornography of them in prostitution had more severe symptoms of PTSD than did women who did not have pornography made of them.”

● Melissa Farley, “Pornography Is Infinite Prostitution,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 150–159. North Melbourne, Australia: Spinifex Press, 2011.

16. “Two-thirds of women, men, and transgendered people in prostitution in nine countries suffered PTSD at the same level as rape survivors, combat veterans, and state-sponsored torture survivors.”

● Melissa Farley, “Pornography Is Infinite Prostitution,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 150–159. North Melbourne, Australia: Spinifex Press, 2011.

17. “[A] research study of 110 sex buyers in Scotland compared high frequency prostitute-users to low frequency users. The most frequent prostitution users were also the most frequent pornography users. The most frequent prostitution users were also more likely to have committed sexually aggressive acts against non-prostituting women.”

● Melissa Farley, “Pornography Is Infinite Prostitution,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 150–159. North Melbourne, Australia: Spinifex Press, 2011.

18. “Endless elaboration on the differences rather than a focus on the essential similarities between pornography, prostitution and trafficking makes it challenging to end these sexual exploitation businesses.”

● Melissa Farley, “Pornography Is Infinite Prostitution,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 150–159. North Melbourne, Australia: Spinifex Press, 2011.

19. “It is clear that ‘pornography is prostitution.’¹ The bodies within pornography have been bought and sold for sex.”

● Abigail Bray, “Capitalism and Pornography: the Internet as a Global Prostitution Factory,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 160–166. North Melbourne, Australia: Spinifex Press, 2011.

1— Rebecca Whisnant, “Confronting Pornography: Some Conceptual Basics” in *Not For Sale: Feminists Resisting Prostitution and Pornography*, edited by Rebecca Whisnant and Christine Stark, 15–27. North Melbourne, Australia: Spinifex Press, 2004.

World

3.9

Child Pornography

1. "It is this need to find new niche products that provides insight into why, in 2002, the Free Speech Coalition (the lobbying organization for the porn industry) worked to change the 1996 Child Pornography Prevention Act that prohibited any image that 'is, or appears to be, of a minor engaging in sexually explicit conduct.' Arguing that the words 'appears to be' limited the free speech of the pornographers, the coalition successfully got this 'limitation' removed."

● Gail Dines, "The New Lolita: Pornography and the Sexualization of Childhood," in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 3–8. North Melbourne, Australia: Spinifex Press, 2011.

2. "Once they click on these sites, users are bombarded—through images and words—with an internally consistent ideology that legitimizes, condones, and celebrates a sexual desire for children. The norms and values that circulate in society and define adult-child sex as deviant and abusive are wholly absent in PCP, and in their place is a cornucopia of sites that deliver the message ... that sex with children is hot fun for all."

● Gail Dines, "The New Lolita: Pornography and the Sexualization of Childhood," in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 3–8. North Melbourne, Australia: Spinifex Press, 2011.

3. A study of child sexual abuse offenders found that 92 percent possessed images of minors that emphasized their sexuality or showed them involved in sex acts.

● Najat M'jid Maalla, "Report of the Special Rapporteur on the Sale of Children, Child Prostitution and Child Pornography," A/HRC/12/23 Human Rights Council, Geneva, 2009.

4. "In a March 2008 interview I conducted with seven men in a Connecticut prison who were incarcerated for downloading child pornography (and in three cases, for sexually abusing a child), not one of them fitted the definition of a pedophile. All seven told me that they preferred sex with an adult woman, but had become bored with regular pornography. Five of them had looked at [pseudo-child porn] sites first and then moved into actual child porn."

● Gail Dines, *Pornland*, Boston: Beacon Press, 2010.

5. "Most child pornography portrays the victims as enjoying the sexual abuse. Such depictions undermine any guilt the viewers may feel, as well as facilitate imitation by males who need or prefer to believe that the sex acts depicted are not abusive."

● Diana E. H. Russell, "Russell's Theory: Exposure to Child Pornography as a Cause of Child Sexual Victimization," in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 181–194. North Melbourne, Australia: Spinifex Press, 2011.

6. "There is now widespread use of live web cams on the Internet to provide made-to-order child sexual abuse, that also constitutes child pornography."

● Diana E. H. Russell, "Russell's Theory: Exposure to Child Pornography as a Cause of Child Sexual Victimization," in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 181–194. North Melbourne, Australia: Spinifex Press, 2011.

7. "Habituation is an intrinsic feature in the escalation described by child pornography viewers, resulting in the desire to see more callous and sadistic images showing children upset, traumatized, or tortured. ... As explained below, some users visit these sites only after they have become habituated to non-violent material that portrays children 'enjoying' their abuse."

● Diana E. H. Russell, "Russell's Theory: Exposure to Child Pornography as a Cause of Child Sexual Victimization," in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 181–194. North Melbourne, Australia: Spinifex Press, 2011.

8. "Viewing child pornography undermines some males' internal inhibitions against sexually victimizing children. ... Many types of child pornography ... can convince those exposed to it that some children want and enjoy sex with adult males."

● Diana E. H. Russell, "Russell's Theory: Exposure to Child Pornography as a Cause of Child Sexual Victimization," in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 181–194. North Melbourne, Australia: Spinifex Press, 2011.

9. "Child pornography undermines the prohibition against sex with children. Hiromasa Nakai, a spokesman for the Japan Committee for Unicef, said that to a degree, it has become socially accepted to lust over young girls in Japan. As Mr. Nakai commented, 'Condoning these works has meant more people have access to them and develop an interest in young girls.'"

● Diana E. H. Russell, "Russell's Theory: Exposure to Child Pornography as a Cause of Child Sexual Victimization," in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 181–194. North Melbourne, Australia: Spinifex Press, 2011. 1—Hiroko Tabuchi, "In Tokyo, a Crackdown of Sexual Images of Minors," *The New York Times*, (February 9, 2011), <http://www.nytimes.com/2011/02/10/business/global/10manga.html>

10. "One likely source of desensitization to the degrading and abusive aspects of child pornography may be repeated exposure to 'adult' pornography wherein the models, although over the age of 18, are described and depicted as underage [pseudo-child pornography]."

● US Congress, as quoted in Diana E. H. Russell, "Russell's Theory: Exposure to Child Pornography as a Cause of Child Sexual Victimization," in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 181–194. North Melbourne, Australia: Spinifex Press, 2011.

11. "All pedophiles need to reassure themselves that what they are doing or want to do is OK. It [child pornography] validates their feelings, lowers their inhibitions and makes them feel that their behavior is pretty normal ... they see other people doing it in the videos or the magazines and it reassures them."

● Tim Tate, *Child Pornography: An Investigation*, London: Methuen, 1990.

12. “In cases of sex trafficking involving minor victims there have been numerous accompanying charges for production of child pornography because the perpetrator has taken naked images of the victim. To be a federal crime, the perpetrator does not have to use the images for commercial purposes, nor is there a need to prove that force, fraud or coercion were used because the victims are minors.”

● Donna M. Hughes, “Sex Trafficking of Women for the Production of Pornography,” *Citizens Against Trafficking* (July 1, 2010), 1.

13. “In 1970, the nation’s first National Commission on Obscenity and Pornography noted that ‘the taboo against pedophilia’ had ‘almost remained inviolate’ and that the use of prepubescent children in pornography was ‘almost nonexistent.’¹ Once child pornography became explicitly illegal and the laws enforced, authorities believed the scourge had been largely wiped out. This, however, was prior to the Internet. Between 1996 and 2004, the total number of child porn cases handled by the FBI’s cyber-crime investigators increased twenty-three-fold.”²

● Pamela Paul, *Pornified: How Pornography Is Transforming Our Lives, Our Relationships, and Our Families* (New York: Henry Holt and Company, 2007); for more information see David B. Caruso, “Internet Fuels Child Porn Trafficking,” *Associated Press*, January 15, 2005. Cases went from 113 in fiscal 1996 to 2,645 in fiscal 2004.
1—Russell, “Children’s Access to Child and Adult Pornography.”

World

3.10

The Connection Between Pornography & Sex Trafficking

1. “Pornography fuels prostitution, and prostitution fuels the sex trade.”

● Victor Malarek, as quoted in Joe Matyas, “Prostitution, Porn Linked to Human Trafficking,” London Free Press (Ontario), May 20, 2009.

2. Pornography and prostitution are “symbiotically related” to sex trafficking; the latter “would not exist without the former.”

● Ellyn Arevalo and Mark Regnerus, “Commercialized Sex and Human Bondage,” Witherspoon Institute, Princeton, NJ, February 11, 2011, <http://www.thepublicdiscourse.com>.

3. “There are a number of links between pornography and sex trafficking.”

● Robert W. Peters, Laura J. Lederer, and Shane Kelly, “The Slave and the Porn Star: Sexual Trafficking and Pornography,” The Protection Project: Journal of Human Rights and Civil Society, Issue 5 (Johns Hopkins University: Fall 2012).

4. “While trafficking for the purpose of the production of pornography is not a widely known or recognized form of trafficking, incidents of coerced participation in pornography are far from trivial. Forced participation as a performer can constitute sex trafficking, and participation in the logistical side may be a form of labor trafficking.”

● Robert W. Peters, Laura J. Lederer, and Shane Kelly, “The Slave and the Porn Star: Sexual Trafficking and Pornography,” The Protection Project: Journal of Human Rights and Civil Society, Issue 5 (Johns Hopkins University: Fall 2012).

5. “Any type of pornography that contributes to (helps fuel) the demand for a particular type of prostitute is likely over time to attract the attention of traffickers, who can provide that type of prostitute.”

● Victor B. Cline, Pornography’s Effects on Adults and Children (New York: Morality in Media, 2001), <http://www.scribd.com/doc/20282510/Dr-Victor-Cline-Pornography-s-Effects-on-Adults-and-Children#scribd>.

6. “Curbing pornography can reduce sex trafficking.”

● Robert W. Peters, Laura J. Lederer, and Shane Kelly, “The Slave and the Porn Star: Sexual Trafficking and Pornography,” The Protection Project: Journal of Human Rights and Civil Society, Issue 5 (Johns Hopkins University: Fall 2012).

7. “There is sex trafficking of adult women (over the age of 17) in the production of commercial pornography in the U.S.”

● Donna M. Hughes, “Sex Trafficking of Women for the Production of Pornography,” Citizens Against Trafficking (July 1, 2010), 1.

8. The Trafficking Victims Protection Act (TVPA) was enacted by the U.S. Congress in 2000 “to combat trafficking in persons, a contemporary manifestation of slavery whose victims are predominantly women and children, to ensure just and effective punishment of traffickers, and to protect their victims.”

● Trafficking Victims Protection Act (TVPA) of 2000, Pub. L. No. 106–386, Section 102(a), 114 Stat. 1464.

9. Under TVPA, the first severe form of trafficking in persons is “sex trafficking in which a commercial sex act is induced by force, fraud, or coercion, or in which the person induced to perform such act has not attained 18 years of age.”

● TVPA Section 103(8)(A).

10. Under TVPA, sex trafficking is defined as “the recruitment, harboring, transportation, provision, or obtaining of a person for the purpose of a commercial sex act.”

● TVPA Section 103(9).

11. Under TVPA, a commercial sex act is defined as “any sex act on account of which anything of value is given to or received by any person.”

● TVPA Section 103(3).

12. The second severe form of trafficking in persons listed under TVPA is trafficking for labor, defined as “the recruitment, harboring, transportation, provision, or obtaining of a person for labor or services, through the use of force, fraud, or coercion for the purpose of subjection to involuntary servitude, peonage, debt bondage, or slavery.”

● TVPA Section 103(8)(B).

13. “The William Wiberforce Trafficking Victims Protection Reauthorization Act of 2008 added a new type of coercion that can be used in sex trafficking cases. Preying on a victim’s drug use or addiction (whether pre-existing or created by the trafficker) will, in and of itself, form the basis for convicting traffickers under the TVPA.”

● Donna M. Hughes, “Sex Trafficking of Women for the Production of Pornography,” Citizens Against Trafficking (July 1, 2010), 3.

14. “If a trafficking victim is forced to engage in a sex act that is filmed or photographed for sale as pornography, then the production of pornography itself becomes a severe form of trafficking in persons that is subject to criminal liability.”

● Robert W. Peters, Laura J. Lederer, and Shane Kelly, “The Slave and the Porn Star: Sexual Trafficking and Pornography,” The Protection Project: Journal of Human Rights and Civil Society, Issue 5 (Johns Hopkins University: Fall 2012).

15. “The production of pornography could also involve labor trafficking in one of two ways. First, a trafficking victim could be coerced into aiding in the technical side of production, rather than the performance side. Second, participation as a nude model for soft-core pornography that does not involve a proscribed sex act could be a form of labor trafficking.”

● Robert W. Peters, Laura J. Lederer, and Shane Kelly, “The Slave and the Porn Star: Sexual Trafficking and Pornography,” The Protection Project: Journal of Human Rights and Civil Society, Issue 5 (Johns Hopkins University: Fall 2012).

16. “Women used in the production of commercial pornography in the U.S. are often subjected to violence and coercion during filming. Often they protest and try to stop the filming or back-out before filming begins. Their protests are ignored or they are pressured by their agent or the director to continue. Their experiences of coercion and trickery often meet the criteria for sex trafficking.”

● Donna M. Hughes, “Sex Trafficking of Women for the Production of Pornography,” *Citizens Against Trafficking* (July 1, 2010), 1.

17. “If any force or coercion is used to compel a woman to engage in a sex act that is filmed for commercial purposes, that meets the legal criteria for violation of federal law.” It constitutes trafficking, as seen in the precedence set in *United States v. Marcus*.

● Donna M. Hughes, “Sex Trafficking of Women for the Production of Pornography,” *Citizens Against Trafficking* (July 1, 2010), 2.

18. “If a person is compelled to engage in a commercial sex act (which includes the filming of commercial pornography) through fraud she is a victim of sex trafficking. Using fraud means tricking someone into doing something she didn’t anticipate.”

● Donna M. Hughes, “Sex Trafficking of Women for the Production of Pornography,” *Citizens Against Trafficking* (July 1, 2010), 4.

19. “Federal obscenity laws already exist, and they can and should be vigorously enforced against the proliferation of hardcore ‘adult’ pornography. Such a long-overdue initiative against the proliferation of hardcore pornography could begin by targeting both the producers and distributors of adult pornography that possibly depicts performers who were trafficked into the production in cases where it would be difficult or nearly impossible to prove trafficking in court.”

● Robert W. Peters, Laura J. Lederer, and Shane Kelly, “The Slave and the Porn Star: Sexual Trafficking and Pornography,” *The Protection Project: Journal of Human Rights and Civil Society*, Issue 5 (Johns Hopkins University: Fall 2012).

20. In 1999, an American living in Cambodia and maintaining a pornographic website there launched as part of the site a section labeled “Rape Camp,” dedicated to “Asian sex slaves” that were to be used for “bondage, discipline, and humiliation.” On the site, the Asian women were “blindfolded, gagged, and/or bound with ropes while being used in sex acts.” Viewers were told to “humiliate these Asian sex slaves to your hearts [sic] content.” It also featured the option of live, interactive bondage sex shows in which site visitors could request torture to be enacted upon the women and see their requests fulfilled. The site also “promoted prostitution tourism to men visiting Cambodia.” The Cambodian Minister of Women’s Affairs called for the man “to be charged with violating a Cambodian law prohibiting sexual exploitation and trafficking of women.”

● Donna M. Hughes, “‘Welcome to the Rape Camp’: Sexual Exploitation and the Internet in Cambodia,” *Journal of Sexual Aggression* 6, nos. 1–2 (2000): 29–51.

21. “Special Agent Roger T. Young (now retired) worked in obscenity, child pornography, and prostitution cases for more than 23 years. Now serving as a consultant to both law enforcement agencies and nonprofit organizations, he recounted the following case: ‘While working as consultant and private investigator, I learned of a massive operation in the United States that involves Asian-appearing women who engage in sex acts for live streaming from a website over the Internet. Customers all over the world pay with a credit card to watch the sex acts in actual time. They can also communicate with and tell the participants what sex acts they want them to do. This operation also involves Asian-appearing females working as prostitutes in apartments in the United States.’”

● Robert W. Peters, Laura J. Lederer, and Shane Kelly, “The Slave and the Porn Star: Sexual Trafficking and Pornography,” *The Protection Project: Journal of Human Rights and Civil Society*, Issue 5 (Johns Hopkins University: Fall 2012).

22. “According to *United States v. Marcus*,¹ the defendant, Marcus, engaged in a consensual sexual relationship involving bondage, dominance-discipline, submission-sadism, and masochism (BDSM) with a woman, Jodi. She acted as Marcus’s ‘slave’ and was subject to various physical and sexual punishments. Jodi lived in an apartment with other women who also acted as Marcus’s slaves, and, at Marcus’s direction, she maintained a membership BDSM website called ‘Subspace’ that chronicled their exploits. When Jodi refused to recruit her younger sister as a slave, Marcus inflicted severe physical punishment on her. She testified that she cried throughout the incident and that the relationship was not consensual after that time. Marcus then directed Jodi to move to New York and required her to create and maintain a new commercial BDSM website called ‘Slavespace.’ Jodi worked on the site approximately eight to nine hours per day, updating site content, including diary entries and photographs, and clicking on banner advertisements to increase revenue. Marcus received all revenues from the website. Jodi said she did not want to continue working on the website, but was afraid of the consequences if she refused. Marcus sexually punished Jodi when he decided her work on the website was inadequate, and these punishments were documented and published on the website. Some punishments were quite severe. On one occasion, Marcus tied Jodi up, forced her onto a table, and then put a safety pin through her labia, while she screamed and cried. Marcus posted photographs from this incident on the Slavespace website and directed Jodi to write a diary entry about it for the website. When Jodi told Marcus she could not continue in this arrangement, he threatened to send pictures of Jodi to her family and the media. On the basis of these and similar occurrences, a jury found Marcus guilty of both sex trafficking and labor trafficking.”

● (Robert W. Peters, Laura J. Lederer, and Shane Kelly, “The Slave and the Porn Star: Sexual Trafficking and Pornography,” *The Protection Project: Journal of Human Rights and Civil Society*, Issue 5 (Johns Hopkins University: Fall 2012).
1—For more on this case, see *United States v. Marcus* 628 F.3d 36 (2nd Cir. 2010).

23. A federal jury in Miami convicted two men [Flanders and Callum] of sex trafficking in 2011. According to a statement issued by the U.S. Attorney's Office for the Southern District of Florida: "The charges spanned from 2006 through July of 2011. During that time, the defendants had perpetrated a cruel fraud to lure aspiring models to South Florida by promising them an opportunity to audition for modeling roles that, it would later turn out, never existed. Once the victims arrived in Miami, Flanders would instruct them to perform an audition for a purported alcoholic beverage commercial. During this purported audition, the victims were asked to promote and drink different brands of alcohol, while Flanders filmed. Unbeknownst to the victims, the alcoholic beverages Flanders provided them were laced with benzodiazepines, a common date rape drug. Once the drugs had taken effect, Flanders would drive the victims to Callum, who had sex with the victims while Flanders filmed. The defendants then edited, produced, and sold the footage of the sex acts over the Internet and to pornography stores and businesses all across the country."

● U.S. Department of Justice, "Two Men Sentenced to Multiple Life Sentences for Enticing Women to South Florida to Engage in Commercial Sex Acts and Distributing Date Rape Pills," press release, February 17, 2012.

24. In July 2007, a young woman with mental deficiencies who was being held against her will and severely sexually abused "appeared on the cover of the July 2007 issue of *Taboo*, a publication owned by Hustler Magazine Group, and was the subject of a story and multipage photo spread inside." Her captors would abuse her while taking photos and videos of the abuse, which they would then distribute as pornography.

● (U.S. Attorney's Office for the Western District of Missouri, "Victim Tortured as Slave, Forced into Sex Trafficking and Forced Labor," press release, March 30, 2011.

25. "Most women entering the pornography industry don't know what they will be subjected to. Like most victims of sex trafficking, they need money and are looking for opportunities. The agents, directors and producers take extreme advantage of these often naïve young women. Their first experience making commercial pornography is often brutal and traumatic."

● Donna M. Hughes, "Sex Trafficking of Women for the Production of Pornography," *Citizens Against Trafficking* (July 1, 2010), 2.

26. "Madelyne knew nothing about the business or what was required, but was eager to make money because she was broke and in debt. She told the agent that she had 'no limits' on what she would do. Later, she said she had no idea what that meant. She signed a one year contract. She was 'terrified' when she arrived at the studio to shoot her first scene. She said, 'I tried backing out and wanted to go home and not do porn at all.' She was reminded that she had signed a contract so she couldn't back out. 'I was threatened that if I did not do the scene I was going to get sued for lots of money.' 'I experienced rough sex scenes and have been hit by male talent [pornography actors] and told them to stop but they wouldn't stop until I started to cry and ruined the scene.' Madelyn's description of her experience qualifies as

coercion. Even if a victim initially consents to sexual activity, she always has the option of withdrawing her consent and the activity should stop. If her wishes are ignored, sex trafficking is occurring."

● Donna M. Hughes, "Sex Trafficking of Women for the Production of Pornography," *Citizens Against Trafficking* (July 1, 2010), 2.

27. "My first movie I was treated very rough by 3 guys. They pounded on me, gagged me with their penises, and tossed me around like I was a ball! I was sore, hurting and could barely walk. My insides burned and hurt so badly. I could barely pee and to try to have a bowel movement was out of the question."

—Alexa, former porn actor.

● Donna M. Hughes, "Sex Trafficking of Women for the Production of Pornography," *Citizens Against Trafficking* (July 1, 2010), 3.

28. "My first scene was one of the worst experiences of my life. It was very scary. It was a very rough scene. My agent didn't let me know ahead of time ... I did it and I was crying and they didn't stop. It was really violent. He was hitting me. It hurt. It scared me more than anything. They wouldn't stop. They just kept rolling."

—Sierra Sinn, former porn actor

● Donna M. Hughes, "Sex Trafficking of Women for the Production of Pornography," *Citizens Against Trafficking* (July 1, 2010), 3.

29. "When Madelyne wanted to back out of doing her first pornography scene, in addition to being threatened, 'I ended up taking shots of vodka to get through it. ... Porn producers provided alcohol and drugs for me.' ... 'As I did more and more scenes I abused prescription pills which were given to me—anything I wanted—by several Doctors in the San Fernando Valley. I was given Vicodin, Xanax, Norcos, Prozac and Zoloft. The doctors knew I did porn but still gave me any prescription pills I wanted. All I had to do was tell them I needed them to get through hardcore scenes.' ... In preparation for a scene in which multiple men ejaculated on Madelyne's face, which she didn't want to do, 'One of the crew members offered me vodka and beer.' ... 'My agent forced me to use a driver because he knew I was always wasted. About 75% of the women who make porn have to have drivers because they're addicted to drugs and alcohol.' Madelyne suggested that the doctors might be receiving kick-backs from the pornography producers. When Madelyne could no longer perform in porn scenes because 'no one wanted to hire me because of my drug and alcohol problem was out of control,' her agent suggested she go into prostitution and stripping."

● Donna M. Hughes, "Sex Trafficking of Women for the Production of Pornography," *Citizens Against Trafficking* (July 1, 2010), 3–4.

30. “Madelyne wrote: ‘The worst scene I ever did was during my first couple weeks in the business. The agent who handled all my bookings called me the day before the scene and said it would be similar to a solo masturbation scene. Then he added that there would also be about 10-15 guys masturbating to me and ejaculating on my body. In the pornography industry this type of scene is known as a “Bukakke.” He said it would be quick and easy money. When I arrived I saw a massively long line of men outside the studio. I recognized very few of them....most of them were strangers I had never seen before.’ Once inside the studio Madelyne learned that the men lined up outside had been recruited by an ad in the LA Weekly to come and ejaculate on a young porn actress’s face. She called her agent and protested, saying there were at least 75 men waiting for the scene. ‘My agent told me that I had to do it and if I can’t, he would charge me and I would lose any other bookings I had because I would make his agency look bad.’ These actions to compel this woman to make pornography constituted both fraud and psychological coercion.”

● Donna M. Hughes, “Sex Trafficking of Women for the Production of Pornography,” *Citizens Against Trafficking* (July 1, 2010), 4–5.

31. “Often, women involved in the production of so-called mainstream hardcore pornography are pressured by their agents, directors, and fellow performers to engage in sexual activity that they do not want to participate in, such as anal sex.”

● Robert W. Peters, Laura J. Lederer, and Shane Kelly, “The Slave and the Porn Star: Sexual Trafficking and Pornography,” *The Protection Project: Journal of Human Rights and Civil Society*, Issue 5 (Johns Hopkins University: Fall 2012).

32. “Many testimonies of women used in the production of commercial pornography describe their drug and alcohol addictions and how the pornographers manipulate them.”

● Donna M. Hughes, “Sex Trafficking of Women for the Production of Pornography,” *Citizens Against Trafficking* (July 1, 2010), 3.

33. “There was always alcohol and drugs readily available on the sets. ... Whatever you wanted, they would or could get it. In fact, the set I worked on for two videos, the stars had their own ‘doctor’ with them! I would see the doctor giving out pills or giving ... injections.”

—Alexa, former porn actor

● Donna M. Hughes, “Sex Trafficking of Women for the Production of Pornography,” *Citizens Against Trafficking* (July 1, 2010), 4.

34. “I got the &^%\$ kicked out of me ... most of the girls start crying because they’re hurting so bad ... I couldn’t breathe. I was being hit and choked. I was really upset and they didn’t stop. They kept filming. You can hear me say, ‘Turn the f---ing camera off,’ and they kept going.”

● Regan Starr as quoted in Meagan Tyler, *Selling Sex Short: The pornographic sexual construction of women’s sexuality in the West*. Newcastle: Cambridge Scholars Publishing, 2011.

35. “You’re viewed as an object and not as a human with a spirit. People don’t care. People do drugs because they can’t deal with the way they are being treated. ... Seventy-five percent [of porn actors] ... are using drugs. They have to numb themselves. There are specific doctors in this industry that if you go in for a common cold they’ll give you Vicodin, Viagra, anything you want because all they care about is the money. You are a number. ... You have to numb yourself to go on set. The more you work, the more you have to numb yourself.”

● Jersey Jaxin as quoted in “Former Porn Star Jersey Jaxin Story,” <https://www.shelleylubben.com/former-porn-star-jersey-jaxin-story>

36. “I literally became a prisoner. I was not allowed out of his sight, not even to use the bathroom, where he watched me through a hole in the door. He slept on top of me at night. He listened to my telephone calls with a .45 automatic eight shot pointed at me.”

● Linda Lovelace as quoted in Catharine A. MacKinnon, *Are Women Human?* (Cambridge, MA: Harvard University Press, 2007).

37. “I speak from experience to say there are victims and survivors who have been drugged and forced into this ugliness against their wills. I realize that this statement flies in the face of the mainstream stereotypical mono-thought mentality that porn is voluntary and that ‘she likes it,’ ‘she asked for it,’ ‘she chose it.’ Although that may be true for some, many are coerced into agreeing with whatever our pornographer says just to stay alive. We have been humiliated beyond description and carry that with us 24/7. Our minds are numbed and in many cases drugged into stupor or amnesia for the painful tearing at our bodies and souls just to be filmed, forever recorded for someone’s sick fantasy to come alive for momentary gratification. I was drugged before each filming. Sometimes it was with an amnesiac, sometimes with a paralyzing drug, sometimes with pain blockers, and sometimes a crazy combination of all of the above. We lie to cover up the truth much the same way the victim of domestic abuse lies, conceals, and hides. We do not have the words to speak out because our pain is too graphic and it is next to impossible to describe what happened to us because of the mainstream mentality. We are met with dismissals and denials, with excuses [such as], ‘that could not have happened, because the girls and women look like they enjoy what is happening to them.’ Some of us have succumbed to more drug addictions, some to insanity, some to crippling isolation, and some to death.”

● Email received by Fight the New Drug.

38. “Only sex industry ‘jobs’ accept dangerous STIs, as well as violence through rough handling and vaginal, anal and throat tears, as part of their ‘regular’ occupational health and safety (OHS) requirements.”

● Renate Klein, “Big Porn + Big Pharma: Where the Pornography Industry Meets the Ideology of Medicalisation,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 86–104. North Melbourne, Australia: Spinifex Press, 2011.

39. “Pornography, these days, ... is about violation, humiliation, and sexual gratification at the expense of women. ... Pornography demeans the person at the other end of the camera whose image is then published in a magazine or book or digitally. That person is expected to put up with humiliation, pain, degradation and dehumanization. That person is expected to accept being portrayed as dirty, as filth, as nothing more than a receptacle, and as a slave.”

● Susan Hawthorne, “Capital and the Crimes of Pornographers: Free to Lynch, Exploit, Rape and Torture,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 107–117. North Melbourne, Australia: Spinifex Press, 2011.

40. “Christine Stark, a writer and anti-porn activist who has worked with hundreds of women in porn and prostitution, problematized the focus on choice to me: ‘What difference does it make how someone gets into pornography? Why do you have to have this extreme amount of violence incurred in getting into pornography in order to make it matter, to make you matter? It’s like you have to prove that you’re a good victim. Do we sit and have endless conversations about domestic violence victims? “Did you choose to walk down the aisle with that man, because if you did, I’m not sure if this is really a form of sexual violence.”’”

● Chyng Sun, “Investigating Pornography: The Journey of a Filmmaker and Researcher,” in *Big Porn Inc.*, edited by Melinda Tankard Reist and Abigail Bray, 171–178. North Melbourne, Australia: Spinifex Press, 2011.

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