their own way. Of course, we hope the afflicted individuals will emerge victorious—moral heroes—and manage to assume “cognitive control” over their disordered feelings. But the frontlines and trenches in this war theoretically lie in the realm of feeling and emotion, not cognition.

The main argument of this commentary is that Hyman’s (2007) discussion does not appear to provide an appropriate theoretical place for the previously noted affective considerations. Consequently, his theoretical model of “loss of control” in addiction appears to be empirically inadequate: it is not true to the phenomena or to the facts. At best, it only provides a partial account of the phenomenon under study. The matter is not merely semantic: other brain and neurochemical systems are involved, and the underlying theoretical posits cannot be reduced to or captured by a purely cognitive explanatory neurophilosophical vocabulary. For a more appropriate framework, we must look to affective neuroscience. This domain of neuroscience can link the diseased brain processes in addiction to the moral struggles addicts face in recovery and their relations to others.

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Addiction, Molecules and Morality: Disease Does Not Obviate Responsibility
Peter J. Cohen, Georgetown University Law Center

Even one day in prison would be a cruel and unusual punishment for the “crime” of having a common cold. . . I do not see how under our system being an addict can be punished as a crime. If addicts can be punished for their addiction, then the insane can also be punished for their insanity. Each has a disease and each must be treated as a sick person (Robinson v. California 1962).

[The] appellant was convicted, not for being a chronic alcoholic, but for being in public while drunk on a particular occasion. The State of Texas thus has not sought to punish a mere status [being an alcoholic] . . . [but] it has imposed upon appellant a criminal sanction for public behavior which may create substantial health and safety hazards, both for appellant and for members of the general public (Powell v. Texas 1968).

Steven Hyman (2007) has skillfully and lucidly analyzed a conundrum perplexing to the disciplines of medicine, law, philosophy, and ethics. He points out that the debate about “whether addiction is best understood as a brain disease or a moral condition . . . is often centered on the question of whether and to what degree we can justly hold addicted individuals responsible for their actions,” (2007, 8), and concludes “[It] may be wise for societies to err on the side of holding addicted individuals responsible for their behavior . . . [but] it should be with the view to rehabilitation of the addicted person and protection of society rather than moral opprobrium” (2007, 8). While I agree with the thrust of Hyman’s article, he has not truly addressed the question of when addicted persons are responsible for what they do. The goal of protecting society requires that the law formulate a bright line separating a purely mechanistic concept of disease from the concept of responsibility, a requirement not narrowly confined to addiction.

In the 1960s, the two Supreme Court holdings previously quoted addressed this issue and set forth a legal distinction between status (having the disease of addiction) and behavior (the acts performed by the addicted person). I suggest that these judicial decisions remain relevant.

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that the “disease model” of addiction does not excuse all harmful addiction-induced behavior, and that the addict’s acceptance of his or her disease and entering into therapy is just the bright line that the law seeks in order to establish responsibility.

To categorize addiction or drug-dependence as a disease is to recognize advances in the neurosciences and appreciate the association of drug dependence with significant alterations in the brain’s molecular biology, chemistry, and function (London et al. 1990; Volkow et al. 1992). This biologic construct not only facilitates the acquisition of new knowledge of mechanisms, etiologic factors, and treatment, but provides a medical, legal, and ethical rationale for destigmatizing addiction. Equally important, however, the disease concept of addiction should not be used as a general excuse for or elimination of responsibility for harmful behavior. As true for any other disease, the addicted individual must accept and continue appropriate therapy once the illness has been diagnosed. And, as with any disease, if failure to do so harms others, legal action is justified.

Let us consider grand mal epilepsy, which is indisputably a brain disease, a term that I and many others would also apply to addiction. Although grave harm may result from a previously asymptomatic individual’s unexpected initial seizure—for example, a motor vehicle accident resulting in another’s death—the epileptic will not and should not be held legally responsible for that harm. Mens rea (“a guilty mind; a criminal intent,” Black 1979) was absent; the seizure was not the epileptic’s fault.

Imagine now that the diagnosis has been made, and a treatment regimen proposed and accepted. After 3 years of freedom from seizures, the epileptic decides, against medical advice, to cease taking the prescribed antiepileptic medications. A short time later, again while driving a motor vehicle, the epileptic has a convulsion resulting in a collision that causes two deaths.

It is most unlikely that a court, jury, or society would excuse this tragedy based on a claim that the causative involuntary act (the convulsion) was the result of disease. To deem epilepsy a disease with a known electrophysiologic etiology surely does not suffice to obviate either legal or moral guilt. While the epileptic certainly had no voluntary control over the grand mal seizure, this person undeniably knew that convulsions would be an inevitable complication of voluntarily ceasing to use the previously successful pharmacologic regimen. Mens rea was present the instant that the recovering epileptic knowingly discontinued the medications that had previously been effective!

Another example of a bright line between the concepts of disease and responsibility for behavior is HIV infection and AIDS. To classify AIDS as an infectious disease (still stigmatized by a large segment of today’s population) should pose no problem. However, this disease status should not condone the individual’s refusal to accept treatment or unwillingness to refrain from actions likely to transmit the infection to others. Addiction is caused by dysfunction of brain function and chemistry; AIDS is caused by viral destruction of the immune system. In both syndromes, failure to undergo and continue treatment that can mitigate harm to others should subject such individuals to moral and, when appropriate, legal sanction.

There are no diseases (including addiction) for which therapy is universally effective; thus, the addict whose treatment fails should not be subject to the same legal and moral consequences as the addict who refuses therapy. Although our current state of knowledge does not permit an a priori prediction of a treatment’s success, the possibility that even the best therapy may not succeed should not argue against the proposal that acceptance of diagnosis and treatment is a useful bright line for assigning responsibility.

Some readers may argue that the distinction between disease and responsibility for behavior when applied to mental disease is more complex than when focused on physical entities such as epilepsy or HIV infection. Nonetheless, the disease of addiction is not incompatible with periods of clarity (sometimes the result of persuasive intervention) during which addicts can overcome denial, acknowledge that their “lives had become unmanageable” and accept that appropriate measures could “restore [them] to sanity” (Alcoholics Anonymous 1976).

A National Bioethics Advisory Commission Report concluded that the disease of addiction is not a per se excuse for behavior—drug-dependent individuals are not always devoid of rational decision-making capacity: “[I]t is important to emphasize that the diagnosis of substance abuse disorders does not imply that decisionmaking [sic] capacity is necessarily impaired” (National Bioethics Advisory Commission 1998, 8; emphasis added).

Finally, although Hyman’s (2007) tone may appear pessimistic he also acknowledges the potential benefits of therapy:

[Current research suggests] highly plausible mechanisms by which addicted individuals may “lose control” over drug seeking and drug taking. Mechanisms that evolved to motivate survival behaviors, the pursuit of natural rewards, are usurped by the potent and abnormal dopamine signal produced by addictive drugs. The result is a brain in which drug cues powerfully

1 “Because addiction is an imprecise and potentially pejorative term, the WHO [World Health Organization] recommended in 1969 that it should be replaced by the term drug dependence” (Nutt 1996). However, because the term addiction is the more familiar term for many individuals, I use the term addiction interchangeably with substance dependence as defined by DSM-IV criteria (American Psychiatric Association 1994).

2 Whether the changes reported in these two studies actually cause addiction or are simply the result of the disease is a question well beyond the scope of this note.
activate drug seeking, and in which attempts to suppress drug-seeking result in intense craving. This model does not, however, reduce addicted individuals to zombies who are permanently controlled by external cues. . . [With appropriate action], people can cease drug use and regain a good measure of control over their drug-taking. . . . The long experience of humanity with addiction does not counsel fatalism, but implacable efforts to overcome the behavioral effects of neural circuits hijacked by drugs (2007, 8).

I conclude by returning to the example of epilepsy, the illness to which Dan-Cohen (1983) referred when forcefully articulating the quandary of legal responsibility and disease:

[There is no escaping the recognition that the requirement of voluntariness is locked in a deadly, and possibly losing, battle with determinism . . . An epileptic seizure supports a claim of involuntariness because the acts in question are accounted for by a determinist medical theory. The more such accounts we possess, the greater the encroachment on the presupposition of voluntariness that underlies the criminal law. Any recognition of a case of involuntariness is bound to take us down a slippery slope, at the end of which we would have nullified the entire criminal law (Dan-Cohen 1983, 15, 18–19 ).

Missing from Dan-Cohen’s plea, however, is that epilepsy is amenable to treatment; this suggests that: 1) “involuntariness” need not “take us down a slippery slope”; and 2) whether an addict accepts or refuses treatment is a meaningful bright line separating “determinism” from legal and moral responsibility. Addiction is no different from epilepsy: addiction is a brain disease; addiction is treatable. Although therapy cannot cure, it can ameliorate the behavioral symptoms of this life-threatening syndrome (Shore 1987; Cohen 2004).3

The Court got it right many years ago—to paraphrase Powell v. Texas:

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3In following physicians placed on probation in Oregon, for example, Shore reported a remarkable 96% success rate during an 8-year follow-up period. The Oregon program was based on deliberately “unpredictable urine screenings” [and reintegration into] “their professional activities and stable professional and interpersonal relationships... [as] evaluated through quarterly reports to the Oregon State Board of Medical Examiners by assigned supervisors and by regular interviews of probationers by board members” (Shore 1987, 2932–2933).