

The Ethical Consequences of Modafinil Use

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Abstract

Modafinil is a stimulant that is beginning to receive attention in the United States because it lacks the negative physical side-effects of traditional stimulants. While these side-effects were an impediment to widespread use of stimulants such as amphetamines, there is no such barrier to widespread use of modafinil, and a country as chronically sleep-deprived as the United States could be extremely receptive to this drug. The possibility of widespread use of a neurocognitive enhancer such as modafinil raises many ethical issues. For instance, sleep-deprivation is a serious problem in the United States but a drug that appears to be a near-perfect treatment for sleep-deprivation may compromise personal autonomy. Also, as is the case with all neurocognitive enhancers, modafinil raises issues surrounding the United States' cultural concept of pharmacological Calvinism, according to which drugs should only be used to treat or cure illness and disease. Modafinil highlights conflicts between cultural values concerning effort, success, and the role of pharmaceuticals in the United States that will have to be resolved for the drug to assume a role in society.

Imagine if there were a pill that could replace sleep. It is hard to say if such a drug would be seen as a panacea by millions of chronically sleep-deprived Americans, or viewed with caution by a public wary of neurocognitive enhancers such as Ritalin and Prozac. This question may soon be answered as a drug called modafinil is on the verge of becoming the next pharmaceutical sensation. Modafinil, marketed in America as Provigil by the firm Cephalon, causes a sensation of increased alertness and wakefulness. On modafinil, subjects in studies have demonstrated the ability to stay awake for periods of up to 64 hours with little or no decline in their level of cognitive performance (Baranski et. al., 1998). Perhaps the most counterintuitive aspect of modafinil is that it causes very little sleep rebound. Use of amphetamines and other traditional stimulants causes the user to need to "make up" for lost sleep. This occurs at a drastically lower level with modafinil (Legarde et. al., 1995). Modafinil also differentiates itself from amphetamines

because use does not result in a "buzz" followed by a crash in mood and energy. Additionally, it avoids inducing tolerance or dependence (Bastuji and Jouvet, 1988). Modafinil has been shown to be a cognitive enhancer. The drug improves the ability of non-sleep deprived subjects on tests of basic cognitive skills, possibly by suppressing impulsive reactions (Turner et. al. 2003).

Such a drug seems too good to be true, and it well may be. While modafinil has very few side effects (nausea, anxiety, and headache are the most common), there are some known problems with its use. For instance, the drug significantly lowers the effectiveness of the birth control pill, making it untenable for millions of women in America. Any long-term ramifications that modafinil might have, particularly in regard to its ability to suppress the need for sleep, are unknown at this point, as is the exact mechanism of modafinil's functioning.

In the 1980's the French firm Lafon derived modafinil from an antidepressant. Professor Michael Jouvet, director of the laboratory that developed modafinil, has called the drug "a great French discovery" and remarked that not only has he taken it to increase his own productivity, but has seen it help students studying for their baccalaureate exams (Dorozynski, 1989). In 1998 the FDA approved Modafinil in the U.S. to treat narcolepsy and in 2004 expanded its approval to include shift work sleep disorder and sleep apnea/hypopnea syndrome. This increased the number of Americans with access to Provigil from 250,000 to over 20 million (National Center on Sleep Disorders Research, 2003). Usage of the drug is expected to rise as the FDA has approved the manufacture of modafinil by generic brands which can sell modafinil at lower prices. Obviously, in a country as over-worked and under-rested as the U.S., there is the potential for a booming modafinil black market. Cephalon already reports that 90% of the prescriptions written for modafinil are for off-label use, and this number will, in all likelihood, rise as awareness of the drug and its potential benefits increases (O'Connor, 2004).

In informed conversations about modafinil, people are always astonished to learn that there are no apparent side-effects to this drug. They insist that there must be a catch, and more than half decide that there is little chance that there are no side-effects, instead opting to believe that disastrous consequences will be discovered down the road. There is a deep-rooted understanding in our culture that supernaturally enhanced ability does not come without a price. Modafinil seems to offer many benefits with minimal physical cost, but the hidden cost of modafinil's

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conferring superhuman powers could lie in unanticipated ethical side effects. Although discussion surrounding the public policy issues that neurocognitive enhancers like modafinil raise is interesting, the more difficult issues that sleep-preventing drugs such as modafinil raise concern what has been called “personhood and intangible values” (Farah et. al., 2004). These issues will mainly be faced by ordinary people in the course of daily life. For example, in a culture where sleep deprivation is a “serious public health problem” (National Center on Sleep Disorders Research, 2003) what effect will a drug that ameliorates the negative consequences of sleep deprivation have on personal autonomy? Modafinil also highlights conflicts between cultural values concerning success and effort that will have to be resolved for modafinil to assume a role in society.

What is fascinating scientifically about modafinil is its antagonistic effect on sleepiness. Almost because we don’t fully understand what makes it so necessary, sleep is regarded as an elemental bodily function. To have discovered a drug that allows sleeplessness with such minimal negative side effects is quite astonishing. What is fascinating ethically about modafinil is its power. The key to limitless productivity, energy, focus, and just plain feeling good every single day can now be found in 100-200 mg capsules of modafinil. The question is, how much of modafinil’s power will Americans be able to control and to what extent will modafinil have control over us?

As part of a backlash against the more paternalistic medicine of previous generation, the concept of personal autonomy has grown in stature in recent decades. The individual has been endowed with more right to choose her own course of medical action. In order to have autonomy one must have the liberty to choose and the agency to make that choice come about. Autonomous choosers make choices with understanding and without the influence of controlling outside forces (Beauchamp, 2001). The choice to use modafinil is made autonomously when the chooser sees modafinil as a road to self-improvement that is compatible with her personal value system. This autonomy can be compromised by coercion, or “free choice under pressure” (Kramer, 1993) in the workplace or classroom. Because of the increase in productivity and energy that modafinil allows, if usage grows in the workplace employees could feel compelled to take modafinil in order to remain competitive. In this scenario, the cost of modafinil could be prohibitive to some workers, and this could reinforce or even enlarge the gap between the affluent and the working classes as those who can afford modafinil are better able to succeed in their jobs. This situation could also occur in schools as students who use modafinil appear brighter than those who do not, an inequity ever more likely as modafinil could be an approved treatment for ADHD as soon as

2006. This would put pressure on employees, students, and parents to favorably consider the use of modafinil even if their personal value systems are opposed to its use.

An extension of the free choice under pressure scenario that could occur if off-label use of modafinil spreads is the concept of cultural addiction. Many Americans have lifestyles that demand the sacrifice of sleep. With modafinil, they may feel that their choice comes down to either struggling groggily through each day, or taking a pill that will enable them to feel awake. Faced with this choice, it may be difficult for many people to make a decision about using modafinil as a neurocognitive enhancer that is based on their personal values. If modafinil comes to be seen as the only avenue to success or a tolerable life, under the free-choice-under-pressure scenario, the autonomy of those using it would be compromised, and they could be seen as dependent on the drug. Modafinil obviously has the potential and power to compromise personal autonomy. It is up to each individual to examine modafinil critically in light of his personal value system, cognizant of outside forces that may make him want to take the drug in spite of personal ethical objections to it.


The decision whether or not to use modafinil rests heavily on the question of personal values, because this drug highlights two perpetually clashing yet both deeply ingrained American values. On one hand, Americans value success and making the most of oneself. On the other, Americans value hard work and the dignity it confers. Many professional athletes face this struggle of values when deciding whether or not to use performance enhancing drugs. Sports ethics has condemned steroid use because it undermines the value placed on personal effort. However, professional athletes are under great pressure to achieve from coaches and fans. For those who choose to use performance enhancing drugs, the end goal of success is more important than any personal reward derived from working hard to achieve that success. This is analogous to the situation created by modafinil, because Americans are under large amounts of pressure from bosses or teachers to produce, as well as from their families to be better at fulfilling familial roles. Modafinil could make it possible for people to be better employees, family members, friends, etc. in the end, but perhaps at the cost of the meaningfulness of the work one does to reach these ends. This is not to say that everyone will find work done while on a neurocognitive enhancer meaningless, and without the dignity of doing it the natural way. Everyone faced with the question of using modafinil will have to decide for herself, first whether she would feel that work done on the drug would lack in the meaning that she could find in doing the work in the harder way that she is used to. Secondly one must decide, if in fact

work is seen as more meaningless when accomplished on modafinil, whether the end result of achievement and better fulfilling one's roles in life is compensatory for the sacrifice of meaning.

Americans are wary of the amount of meaning that can come from work done on modafinil because of another cultural concept called pharmacological Calvinism. Peter Kramer defined this concept as "a general distrust of drugs used for non-therapeutic purposes and a conviction that if a drug makes you feel good it must be morally bad" (Kramer, 1993). According to pharmacological Calvinism, drugs should only be used for the purpose of curing or treating illness and disease. Neurocognitive enhancers are particularly subject to scrutiny by this cultural value because they raise questions about what constitutes an illness or disease. For instance, Cephalon's website sells modafinil as treatment for "excessive sleepiness", despite the fact that this is not commonly considered a specific medical condition and is not a condition that modafinil is FDA approved to treat. On one hand, excessive sleepiness is an unpleasant condition that many Americans may wish there were more help for. If excessive sleepiness were ever recognized as a condition in and of itself deserving of medical treatment, our culture might come to embrace use of modafinil for this purpose. On the other hand, pharmacological Calvinists fear that this could pathologize what is seen as normal sleeping time and daytime energy, and this raises difficult questions surrounding how much sleep and daytime energy is "normal".

Neurocognitive enhancers are also subject to scrutiny by pharmacological Calvinists because they are seen as dehumanizing. Gerald Klerman, who first used the term, wrote that pharmacological Calvinists see pain and suffering as vital aspects of one's humanity and that to absolve one of, for instance, the feeling of tiredness removes that vital aspect of humanity (Klerman, 1972). Modafinil in particular is seen as dehumanizing in the way it seems to package productivity in pill form. There are limits, though, to how much this viewpoint of pharmacological Calvinism is accepted in America. Americans have no qualms about taking an aspirin that will relieve the suffering from a headache, giving the user better thought clarity. This is analogous to modafinil as taking modafinil relieves the suffering of tiredness thereby

lending the user better thought clarity. The distinction Americans make between what constitutes petty unnecessary suffering versus suffering that is an integral part of being human will play a major role in determining American attitudes towards modafinil.

Our culture's pharmacological Calvinism could be the determining value that defines our society's relationship with modafinil. However, sleep-deprivation is such an epidemic in this country and modafinil is such a near-perfect panacea physically, that pharmacological Calvinism may not be as strong an impediment to drug use as it has been in the past. If off-label use of modafinil does start to spread, Americans may face a culture of coercion or even the specter of cultural addiction. Regardless of the autonomistic integrity of their decisions, Americans may soon have to decide one way or the other about modafinil. Just as Ritalin and Prozac and other neuroenhancers reshaped cultural values, the decisions Americans make about modafinil will change our culture, redefining how we view effort and success. 

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