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ENHANCING THE VIRTUES OF STUDENTS

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ENHANCING THE VIRTUES OF STUDENTS

A Dissertation Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Gavin Gearhart Enck
May 2013

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“None of you seem to understand.
I’m not locked in here with you.
You’re locked in here with me.”
— Rorschach, *Watchmen*

“There, then, he sat, the sign and symbol of a man without faith,
hopelessly holding up hope in the midst of despair.”
—Herman Melville, *Moby-Dick; or the Whale*

ABSTRACT

Discussions about the permissibility of students using enhancements in education are often framed by the question, “Is a student who uses cognitive-enhancing drugs cheating?” Some argue that students who use them are cheating because these drugs provide an unfair advantage that violates rules of fair competition in education. Others argue that students who use them are not cheating because these drugs are merely another progressive educational tool such as a calculator or computer. Although the question of cheating is interesting, it is only one question concerning the permissibility of enhancement in education. Another interesting question is, “What kinds of students do we want in our academic institutions?” I suggest that one plausible answer to this question concerns the ideals of human excellence or virtues. The students we want in our academic institutions are virtuous or at least possess certain virtues. I argue that a virtuous student may choose to use cognitive-enhancing drugs for reasons of self-improvement. That a virtuous student may choose to use cognitive-enhancing drugs for reasons of self-improvement illustrates that under certain conditions, motivation can determine the permissibility of using enhancements. Building upon this, I suggest a virtues-based institutional rule for governing and guiding students’ use of cognitive enhancers in an academic institution, for the right reasons. This “ideals of human excellence” or “virtues” approach offers interesting and unique insights for issues of enhancement in education (and for issues of pharmaceutical enhancement in general); it may turn out that the uneasiness many people have about students using cognitive-enhancing drugs has less to do with issues of enhancement and more to do with the motivation and character of students.

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Chapter 1 Cognitive-Enhancing Drugs in Education

1. Introduction

“Is a student who uses cognitive-enhancing drugs cheating?” This question often frames the contemporary discussion of enhancement in education about the permissibility of students using cognitive-enhancing. For reasons of fairness, some argue that a student who uses a cognitive-enhancing drug is cheating. For reasons of increasing productivity, others argue that a student who uses a cognitive-enhancing drug is not cheating. However, whether a student who uses a cognitive-enhancing drug is cheating or not, the assumption is that most academic institutions already have in place institutional rules for governing student use of cognitive-enhancing drugs.

In this research project, I argue that there are two problems with the contemporary discussion of enhancement in education. First, framing the permissibility of student use of cognitive-enhancing drugs as a question of cheating is not particularly useful. The answers to this question do not provide conclusive reasons for whether the use of cognitive-enhancing drugs is cheating. Second, despite the assumption of many in this discussion, academic institutions’ current institutional rules, such as those prohibiting a student from using illegal drugs in academic activities, do not decisively determine the permissibility of student use of cognitive-enhancing drugs for enhancement in education. These two problems result in no advancement of contemporary discussion of enhancement in education as well as only a cursory examination regarding permissibility and institutional rules related to student use of enhancements in education.

Yet it is of practical and philosophical importance that permissibility and institutional rules concerning student use of enhancements in education are addressed. First, it is likely that the use of cognitive-enhancing drugs among students is only going to increase. Currently in the United States, nearly 21 million young people (ages 10 to 19 years old) are prescribed cognitive-enhancing drugs each year, an increase of 26 percent since 2007 (Schwarz 2012). In the ten years from 1993 to 2003, the global use of cognitive-enhancing drugs increased three times, and spending on cognitive-enhancing drugs increased nine times to \$2.4 billion in 2003. The United States is 83 percent of the global market for cognitive-enhancing drugs. From 2003 to 2007, annual use and spending on these enhancements in developing nations exceeded 20 percent (Scheffler, et al. 2007).

Second, as our neurological understanding of human cognition advances, it cannot be assumed that the technological means accessible for improving a person's cognitive capacities will only be pharmaceutical. Transcranial magnetic stimulation (which uses electromagnetic induction to alter the magnetic field in a person's brain) has been shown to augment a person's working memory (Fregni, et al. 2005). Genetic modification of mice has been shown to enhance their memory performance with respect to retention and has illustrated that genetic modification on mammals is possible (Tang, et al. 1999) (Tan, et al. 2006). Moreover, recent discoveries have identified three human genes—DAT1, DRD2, and DRD4—linked to the behaviors surrounding attention, motivation, cognitive skill, intelligence, and violence (Beaver, et al. 2011). So it is reasonable to think that genetic modification capable of enhancing human cognition will be available sooner rather than later.

The increased use of cognitive-enhancing drugs and the advancement in enhancement technology prudently both suggest the need to address questions about the permissibility and institutional rules regarding student use of enhancements in education. The role of enhancements in education also is philosophically significant because education and enhancement of intellectual capacities are valued instrumentally and as being good for their own sakes. Whether student use of cognitive-enhancing drugs is permitted or prohibited, current academic institutional rules need to be redesigned. This would result in shaping the attitudes and sentiments of students about enhancements and education. The shaping of students' attitudes and sentiments about enhancement and education is likely to have reverberations across social, economic, and cultural domains.

To advance the contemporary discussion of enhancement in education, this research project addresses questions of permissibility and institutional rules regarding student use of enhancements in education in a manner that is framed by three questions and structured by two goals.

1.2 Questions and Goals of Research Project

This research project examines the following three questions:

1. Is student use of cognitive-enhancing drugs in education permissible?
2. Is a student who uses cognitive-enhancing drugs cheating?
3. What should be the institutional rules regarding student use of cognitive-enhancing drugs?

These three questions concerning enhancement in education serve as an operational outline. By examining and addressing these three questions, this research project stretches across differing fields of philosophy such as normative ethics, neuroethics, and moral psychology. It also relies on clinical ethics, medical practices, social psychology, and neuroscience to provide further context and substance to this project's philosophical

claims.¹ Since questions concern both students and institutions, this research project works in both ideal and non-ideal theory.

1.3 Goals of Research Project

By examining and addressing these three questions, this research project has two goals. The first is to examine and address the two problems with the contemporary discussion of enhancement in education. These problems can best be understood and identified by first examining how current institutional rules of academic institutions do not decisively determine the permissibility of student use of cognitive-enhancing drugs. Since current institutional rules in academic institutions do not decisively determine the permissibility of cognitive-enhancing drugs, I next examine the question of cheating and how arguments that attempt to answer this question are inconclusive. Moving forward from this first goal, my research project offers an approach for considering student use of enhancements in education as well as the kind of institutional rules that could be used to govern the use of enhancement in education.

The second goal of my research project concerns the type of approach I provide. I offer a *systematic* approach toward enhancement in education. The typical approach for addressing enhancement in education and the questions of cheating, permissibility, and institutional rules is to focus on these questions one at a time and in isolation. For instance, when questions concerning the permissibility of student use of cognitive-enhancing drug were addressed, implications for institutional rules were not addressed. When questions concerning institutional rules to govern student use of these

¹ Consider Maria Von Herbert's response to Immanuel Kant that although his moral theory had given her a reason not to commit suicide, it was not of much help otherwise: "I've read the metaphysics of morals and the categorical imperative, and it doesn't help a bit" (Langton 2007).

enhancements were addressed, implications for the attitudes and sentiments these rules would develop in students were not addressed. This is not to say that the answers to these particular questions were wrong but rather that focusing on single questions in isolation fails to yield a cohesive viewpoint about enhancement in education. This research project attempts to advance a systematic, cohesive viewpoint toward enhancement in education.

A systematic approach offers a conceptual framework for elucidating the role of cognitive-enhancing drugs in education. A systematic approach examines not only the role of but also the implications that enhancements could have on education, institutional rules in an academic institution, and the ethos of students. By offering a systematic approach—even if it turns out to be wrong—this research project yields at least one way to understand enhancement in education and to advance the contemporary discussion of enhancement in education. With these questions and goals as frames, I now offer a brief summary of this research project’s systematic approach.

1.4 The Ideals of the Human Excellence or Virtues-Based Approach

Instead of beginning by asking questions about permissibility, cheating, or institutional rules regarding enhancement in education, I offer a systematic approach that begins by asking, “What kind of students do we want in our academic institutions?” I suggest that one plausible answer concerns the ideals of human excellence or virtues.^{2 3} The virtues are the properties of a person that make their possessor an ideal of human excellence. The students we want in our academic institutions are virtuous or at least possess certain virtues. I argue that a virtuous student may choose to use cognitive-

² I use “ideals of human excellence” and “virtues” interchangeably.

³ The genesis of this proposal’s argument of asking a different question about enhancement in education from the perspective of the ideals of human excellence or virtues arose from discussions of the work of Thomas E. Hill, Jr. (Hill 1983).

enhancing drugs for reasons of self-improvement. This indicates a motivation that determines the permissibility of using the enhancement. In respect to the question of whether a student's use of cognitive-enhancing drugs in education is permissible, this virtues-based approach holds that students in academic institutions are permitted to use cognitive-enhancing drugs if their reasons for using these enhancements are reflective of the ideals of human excellence.

Because it is a student's motivation that determines the permissibility of using cognitive-enhancing drugs, this virtues-based approach would generate the following institutional rule: *Students are permitted to use cognitive enhancers if their reasons for using them are reflective of the ideals of human excellence.* This rule not only governs student use of cognitive-enhancing drugs but also provides guidance for a student to determine which uses of cognitive-enhancing drugs are permitted or prohibited in education.

Because this virtues-based institutional rule relies on a student's motivation to determine permissibility, it structures and develops the motivations of students and shapes their ethos about the use of enhancements in education.

The aim of this virtues-based approach is to offer a way for motivation and character to be included as relevant considerations in the discussion of enhancement in education. In the contemporary discussion, the use of enhancements often is considered solely with respect to their consequences for students and education as a whole; rules focus on whether cognitive-enhancing drugs violate the institutional rules of education. However, within this discussion, motivation and character often are overlooked as relevant considerations for assessing not only a student's use of cognitive-enhancing drugs but

also in evaluating the role enhancements are to have in education. Generally speaking, it is reasonable to think that some students have motivations for using cognitive-enhancing drugs that are good reasons reflective of good character. Offering a way for motivation and character to be relevant considerations in assessing student use of cognitive enhancers brings more depth and complexity to the contemporary discussion of enhancement in education. It also raises the interesting implication that it might not the use of cognitive-enhancing drugs that is troubling but rather the character of the students using them that is troubling.

1.5 Why the Ideals of Human Excellence or Virtues

As the foundation for an approach toward assessing enhancement in education, the ideals of human excellence or virtues is likely to raise some concerns. However, the use of the ideals of human excellence or virtues is not an indication of a failing in other normative ethical theories; instead, the ideals of human excellence or virtues help to explain our intuitions about certain cases of students using cognitive-enhancing drugs and are at least one element of a normative account of enhancement in education. Moreover, there are three reasons for thinking that the ideals of human excellence provide interesting and unique insight into the questions and issues regarding a student's use of enhancement in education.

1.5.1 Different Perspective

First, the ideals of human excellence or virtues offer a different perspective for viewing enhancement in education. Although focusing on the permissibility of certain behaviors and actions is still important, in some situations it might be worthwhile to ask

what sort of person would behave and act in that way. Thomas Hill (1983) provides some illustrative examples of such situations:

Sometimes we may not regard an act wrong at all though we see it as reflecting something objectionable about the person who does it. Imagine, for example, one who laughs spontaneously to himself when he reads a newspaper account of a plane crash that kills hundred. Or, again, consider an obsequious grandson who, having waited for his grandmother's inheritance with mock devotion, then secretly spits on her grave when at last she dies. The moral uneasiness which it arouses is explained more by our view of the agent than by any conviction that what he did was immoral. Had he hesitated and asked, "Why shouldn't I spit on her grave" it seems more fitting to ask him to reflect on the sort of person he is than to try to offer reasons why he should refrain from spitting. (Hill 1983, 215)

Although it is permissible for an individual to laugh at news of an airplane crash or spit on their grandmother's grave, asking about permissibility does not directly illustrate why these actions are objectionable. However, asking what sort of people would laugh at tragedy or spit on their grandmother's grave does, to a large degree, illuminate why these are regarded as objectionable acts. That people laugh at others' tragedies or spit on their grandmother's grave reflects poorly on that person's character. This is not the sort of person to admire, emulate, or even associate with.

In the context of education and a student who is using a cognitive-enhancing drug, imagine that the use of this enhancement is permitted in education. Now consider a student who uses cognitive-enhancing drugs because it assists them in completing the minimum number of assignments required to pass the course, allowing this student to skip lectures and discussion sections. Although the student's actions are permitted, it is reasonable to think that this is not the sort of student an academic institution would want. Alternatively, imagine that the use of cognitive-enhancing drugs is prohibited but that a student is using these enhancements simply because this student greatly values learning.

The student's actions are prohibited, but it is reasonable to think that an academic institution would want this sort of student.

Using the ideals of human excellence or virtues to consider enhancement in education indicates—even if vaguely—something about the sort of student to want in education. Moreover, the ideals of human excellence or virtues help demonstrate that the reasons a student has for using a cognitive-enhancing drug are important in assessing enhancements in education.

1.5.2 Aspirational and Practical Value of Virtues

Another reason is that the ideals of human excellence or virtues function as something to aspire to and also can serve as a practical guide. As something to aspire to, the ideals of human excellence or virtues focus not only on the kind of person an individual should be but also provide certain ideal properties that people should aim to possess.⁴ For the sake of the argument, consider honesty, courage, or compassion to be properties for a person. It is reasonable to think that even if an individual regularly failed to meet these ideals, this person should still aspire to them. Constantly working on developing virtues, whether by an individual or the community, is valued not only as being instrumentally beneficial but also good for its own sake. As John Stuart Mill succinctly notes,

The contented man, or the contented family, who have no ambition to make any one else happier, to promote the good of their country or their neighborhood, or to improve themselves in moral excellences, excite in us neither admiration nor approval. (Mill 1971, 409)

⁴ That virtues are something to aspire to is a point emphasized through most of Julia Annas' work, a major influence on how I think about virtues (Annas 2006; 2011).

In the context of enhancement in education, this virtues-based institutional rule not only stipulates permitted reasons for students to use cognitive-enhancing drugs, but it also stipulates the ideals of human excellence students should aspire to attain in respect to using enhancements. Although many students are likely not to use cognitive-enhancing drugs for reasons reflective of the ideals of human excellence, that some students fail to use cognitive-enhancing drugs for these reasons does not make the ideals of human excellence offered by this virtues-based institutional rule any less worthy of aspiration.

While virtues are the properties of a person that make their possessor an ideal of human excellence, these virtues also function to serve as a practical guide for those who lack virtues, serving as a point of reference for an individual to orient or guide their behavior.

At first it is difficult to understand how the ideals of human excellence or virtues serve as a practical guide; however, consider the uncontroversial and common practice of using an idealization as a guide. For example, ideal gas law is a hypothesis about the behavior of gas if it were to exist in a perfect, idealized state. Finding or even putting gas in such a state is unrealistic and unachievable. However, ideal gas law serves as a practical guide for other experiments. By understanding gas as it would exist under ideal conditions, scientists orient or guide their research project and build their basis of knowledge.

Similarly, the ideals of human excellence or virtues can serve as a practical guide for people.⁵ For most virtue ethics theories, people are assumed to have had some life

⁵ Linda Zagzebski (2011) recently put forward an outline for an *Exemplarist* virtue theory in which a moral exemplar, even if an ideal, provides an outline for a moral theory.

experience as well as a grasp of ethical discourse and certain values.⁶ The virtues are then used to orient or guide this person toward the appropriate excellence. For example, a person with the virtue of compassion provides to charity when possible. Individuals who lack but want to develop compassion rely on this virtue to guide them and work toward developing the virtue of compassion by first giving to charity whenever possible.

For enhancement in education, consider the freshman undergraduate student. This student likely was already exposed to cognitive-enhancing drugs being used for a wide variety of reasons. This virtues-based institutional rule offers the freshman certain ideals of human excellence or virtues as a guide toward using cognitive-enhancing drugs for the proper reasons. Since the ideals of human excellence or virtues function as something to aspire to and as a practical guide, a virtues-based approach provides an interesting perspective on enhancement in education.

1.5.3 Rich and Diverse Historical Tradition

The ideals of human excellence or virtues provide a rich and diverse historical tradition to draw upon. From Confucian philosophers to Aristotle and through to current *virtue ethicists* such as Rosalind Hursthouse, Julia Annas, and Christine Swanton, conceptions of the ideals of human excellences or virtues have played a role in many areas of philosophy, particularly in normative ethics. It is often assumed that the ideals of human excellence or virtues are thought of as independent, separate, or in opposition to other approaches in normative ethics. This is an incorrect assumption; conceptions of virtues have roles in normative theories that typically are taken as being on opposite spectrums of normative ethics, such as David Hume and Immanuel Kant. Consider that

⁶ As a matter of historical note Aristotle's lectures were given to young nobility who had already gone through a sufficient level of education (Crisp 1997; Hughes 2001).

Hume and Kant are on opposite spectrums of the normative ethics spectrum with regard to the role of reason in morality, but both still provide a place for virtues within their respective moral theories.

On one end of the spectrum is David Hume, a sentimentalist who famously stated, “Reason is, and ought only to be the slave of the passions, and can never pretend to any office than to serve and obey them” (Hume 2001, 266). A broad account of Hume would hold that moral judgment is based on sentiments or motivations; to judge a person is to judge their character traits. Moreover, certain character traits are taken as being virtues, either natural or artificial, that are, roughly, socially useful.⁷

On the other end of the spectrum, Immanuel Kant in the *Groundwork of the Metaphysics of Morals* holds that it is reason and a human being’s rational capacities that bind us to moral obligations:

Everyone must grant that a law, if it is to hold morally, that is, as a ground of an obligation, it must carry with it absolute necessity; that, for example, the command, “thou shalt not lie,” does not hold only for human beings, as if other rational beings did not have to heed it, and so with all the other moral laws properly so called; that, therefore, the ground of obligation here must not be sought in the nature of the human being or in the circumstances of the world in which he is placed, but a priori simply in concepts of pure reason (4:389).

Yet even Kant has a conception of virtue as being the courage to act with respect to the moral law, whether it is a perfect or imperfect duty (4:421n) (6:405).

The important point is not to highlight differences between Hume and Kant’s accounts of reason or their conceptions of virtues; instead it is to emphasize that differing normative approaches, specifically approaches that are often regarded as being

⁷ Providing an exposition of Hume’s often complicated but interesting conception of virtue is to go too far afield. Yet at least in the *Treatise*, Hume’s notion of virtues is based on human sentiments and convention (cf. Hume 2001, Part 3: 367-378).

diametrically opposed, still include conceptions of virtues. The ideals of human excellence or virtues need not necessarily be regarded as always being a conception that is independent, separate, or in opposition to other approaches in normative ethics, but as a conception that can work within most if not all normative approaches.

Moreover, ideals of human excellence or virtues have a rich and diverse historical tradition for this research project to draw from. While the conception of virtues put forward in this research paper shares many common features with an Aristotelian conception, it also shares many features with Buddhist and Confucian conceptions of virtues. Thus the rich and diverse historical tradition of ideals of human excellence or virtues allows for this research project to put forward a conception of virtues that cannot easily be categorized as being Aristotelian, Buddhist, or Confucian.

In the context of enhancement in education, the ideals of human excellence or virtues provide an approach that is, *prima facie*, not opposed to other normative ethical theories. By drawing upon a rich and diverse historical tradition, this research project's conception of the ideals of human excellence or virtues can focus on a student's action in a manner that, for example, a strictly Buddhist, Confucian, or Aristotelian approach on the importance of character could not.

Therefore, because the ideals of human excellence or virtues provide a different perspective, are aspirational and practical, and come from a rich and diverse historical tradition, it is plausible to think that the ideals of human excellence or virtues offer an interesting and unique perspective for issues of enhancement in education.

1.6 Overview of Dissertation

This introductory chapter concludes with an outline of the manner in which this research project examines and addresses questions of permissibility, cheating, and institutional rules and works to advance the discussion of enhancement in education.

The following chapter begins with defining and clarifying the conceptions of enhancement, cognitive-enhancing drugs, and education. The project then examines the permissibility of student use of cognitive-enhancing drugs with regard to current institutional rules governing use of enhancements in most academic institutions. The argument put forward in this chapter is that because of the complexities of neurology, pharmacology, and medical-prescribing practices for pharmaceuticals, current institutional rules do not decisively determine the permissibility of student use of enhancements.

Since current institutional rules do not decisively determine the permissibility of student use of cognitive enhancers, the focus moves to the question of cheating. This question of cheating has generated two well entrenched arguments that face difficult challenges that illustrate that these arguments do not provide conclusive reasons for thinking that a student who uses cognitive-enhancing drugs is cheating.

Chapter Three presents a virtues-based approach that offers a conception of virtues and an account of virtuous students. According to this virtues-based approach, a virtuous student may choose to use cognitive-enhancing drugs and is justified in using these enhancements because of their motivations. This virtues-based approach then formulates a virtues-based institutional rule for governing student use of cognitive-enhancing drugs in education. While working within the confines of ideal theory to formulate a virtues-

based institutional rule, the conditions or disorders of prosopagnosia and psychopathy are used to argue that the goal of academia is to attain understanding (taken as an ability to draw upon information and apply it to one's life) rather than to obtain knowledge (taken as knowledge and facts). This chapter concludes with a response to potential criticisms, arguing that the virtues offered are of significant value to persons, that academia at least has a responsibility to foster an environment in which virtues can develop, and that even if students are not required to develop these virtues, there are reasons for thinking that they should.

In Chapter Four, this research project transitions from working within the realm of ideal theory to that of non-ideal theory. With certain idealized conditions regarding academic institutions and students no longer in place, I examine whether this virtues-based institutional rule could work. The aim of this chapter is to highlight that even under non-ideal conditions, this virtues-based institutional rule offers ideals of human excellence, motivation, and character that are relevant considerations. Motivation and character can be implemented in academic institutions operating under non-ideal conditions to govern student use of cognitive-enhancing drugs.

A reason for implementing this virtues-based institutional rule is because students in academic institutions have less-than-ideal psychological dispositions and are not always compliant with institutional rules. I then provide three advantages of using this virtues-based approach and institutional rule: it addresses concerns about the medicalization of cognitive enhancers, it shapes students' practical reasoning about enhancement, and it resists oversimplifying issues of enhancement in academia.

In the fifth chapter, I return to reexamine the question of cheating. I contend that this virtues-based institutional rule is not only consistent with existing institutional rules and policies but also provides a better justification for permissibility of these enhancements than what currently exists. It offers a way to acknowledge and support concerns about fairness and improving well-being.

In the end, this virtues-based approach and institutional rule might be incorrect. Nevertheless, enhancement in academia involves matters concerning the value of education, the permissibility of pharmaceutical enhancements, and the sort of character one wants students to have. This research project, either part or all of it, might be wrong; however, any investigation into enhancement in academia will have to consider the motivation and character of students.

I conclude by noting that the ideals of human excellence or virtues approach can be extended beyond the discussion of enhancement in academia. As neuroscience and pharmacology advance, there are questions about the application and limitation of using pharmaceuticals to augment a person's memory and moral capacities. I contend that any approach to pharmaceutically enhancing a person's memory and moral capacities encounters the problems of complexity, philosophical overextension, and potential explanation biases. The ideals of human excellence or virtues approach can adequately handle these problems and demonstrates that whether it is enhancement in education or the pharmaceutical enhancement of a person's memory and moral capacities, motivation and character are still relevant considerations.

Chapter 2 Cognitive Enhancers, Academia, and Rules

2.1. Defining Enhancement, Cognitive Enhancing Drugs, and Education

To understand issues of enhancement in education, I must first define the use of the terms enhancement, cognitive-enhancing drugs, and education. Enhancement usually is defined broadly and in respect to the *treatment-enhancement* distinction. According to this distinction, treatment is the use of biomedical technologies or medical procedures to restore persons or their capacities to proficient functioning levels. Enhancement, then, is the use of biomedical technologies or medical procedures to augment persons or their capacities to higher functioning levels.⁸ On this distinction, many hold that treatments are necessary and morally justified since they restore a person to normal functioning levels, whereas enhancements are not justified.

In general, there are theoretical difficulties in maintaining a sharp distinction between treatment and enhancement; many biomedical technologies or medical procedures considered necessary “treatments” seem more like enhancements (e.g., vaccinations and fluoride supplementation), and many “enhancements” are not biomedical technologies or medical procedures (e.g., exercise and relaxation techniques).⁹ Some philosophers such as Allen Buchanan make a further argument that literacy and numeracy are enhancements because in respect to human history, they are rather recent developments and, in fact, augment persons by altering their neurology (Buchanan 2008). In light of these theoretical difficulties, it is better to recognize the distinction between treatment and

⁸ While Christopher Boorse and Norman Daniels hold differing conceptions of health, disease, treatment, and enhancement, they maintain that there is a distinction between treatment and enhancement, even if it is often difficult to conceptualize or pin down (Boorse 1981; Daniels 2000; Daniels 2008).

⁹ John Harris and Allen Buchanan, among others, argue convincingly that the distinction between treatment and enhancement is at best tenuous and at worst tragically misleading (Buchanan 2000; Buchanan 2008; Buchanan 2011; Harris 2007).

enhancement as continuous rather than as providing distinct categories, and also perhaps to recognize that treatment does not always have (at least *prima facie*) greater moral justification than enhancement.

For present purposes, however, I accept the distinction between treatment and enhancement as referring to the clinical use of these biomedical technologies or medical procedures. Treatment refers to the clinical use of biomedical technologies or medical procedures for conditions or disorders to restore persons or capacities to appropriate functioning levels. Enhancement, then, refers to the use of biomedical technologies or medical procedures to augment persons or capacities that function at appropriate levels to higher functioning levels.

2.2 Cognitive-Enhancing Drugs

The biomedical technologies or medical procedures used for enhancement range widely from genetic engineering to cosmetic surgery. The type of enhancement I focus on is psychotropic pharmaceutical enhancement. Psychotropic pharmaceuticals are chemical compounds used specifically to alter a person's neurological capacities or processes (Katzung 2009).

The psychotropic pharmaceuticals most often used for enhancement are usually those that augment specific capacities involved in cognition: memory, affective, and executive functions, such as working-memory and cognitive control (Singh and Kelleher 2010; Schermer, et al. 2009; Stein 2008; Smith and Farah 2011). Among psychotropic pharmaceutical enhancements, I focus on those that augment executive function of cognitive control, specifically the cognitive-control capacities of focus and concentration. I refer to these psychotropic pharmaceutical enhancements as *cognitive enhancers* when

they are used to augment a person's capacities of focus and concentration to higher functioning levels and for a longer period.

The development and standard clinical use of cognitive enhancers is as a treatment for conditions or disorders such as Attention Deficit Hyperactivity Disorder (ADHD), Learning Disabilities (LD), and narcolepsy. The chemical compounds in cognitive enhancers do not directly target cognition because cognition is a complex interaction between a multiplicity of mental functions and neurological processes.¹⁰ Instead, the chemical compounds in cognitive enhancers target neurotransmitters in certain regions or systems of the brain (Housden, Morein-Zamir and Sahakian 2011; (Katzung 2009).

By amplifying, influencing, or blocking certain neurotransmitters in the cortical and sub-cortical systems—in a way not fully understood by neuroscience or pharmacology — cognitive enhancers have improved the functioning of the capacities of focus and concentration in many cases (Smith and Farah 2011; O'Reilly 2010). For persons with ADHD and LD, the use of cognitive enhancers restores their impaired capacities of focus and concentration to appropriate functioning levels. Since cognitive enhancers affect the capacities of focus and concentration, they are used for persons with narcolepsy to maintain appropriate levels of alertness and wakefulness.

While the development and use of cognitive enhancers is as treatment, there is evidence indicating that, to some degree, cognitive enhancers do improve the capacities of focus and concentration in unimpaired persons to higher functioning levels. The degree to which they do so varies between individuals: for a few individuals, cognitive enhancers actually impede cognition; for others, their capacities are augmented only

¹⁰ This conception of cognition as mental functions and neurological process is neutral in respect to theories of mind and cognitive science debates concerning computation theory of mind, cognitive heuristics, and the debate concerning extended and embedded mind hypotheses (Horst 2011; Herbert 2010; Levy 2007).

slightly; and for most, the augmentation is only moderate (Mehta, et al. 2000; Housden, Morein-Zamir and Sahakian 2011). Yet in many cases, even moderate augmentation of focus can assist a person with declarative learning and be tremendously beneficial to their cognition overall (Smith and Farah 2011; Sandberg, 2011; Sandberg and Savulescu 2011).

While cognitive enhancers may be used for enhancement, there are risks involved. As pharmaceuticals, cognitive enhancers can be a stimulant, like methylphenidate (Trade-names: Ritalin™ or Concerta™) or dextroamphetamine and amphetamine (Trade-name: Adderall™), or non-stimulant, such as modafinil (Trade-name: Provigil™).

Pharmaceutical stimulants in particular have potentially dangerous side effects.¹¹ By amplifying certain neurotransmitters in the cortical and sub-cortical systems, the use of cognitive enhancers may result in emotional and aggressive behavior, anxiety, insomnia, and—because they interact with the brain’s rewards center—dependence, severe withdrawal, and depression (Smith and Farah 2011; Stein 2008; National Center on Addiction and Substance Abuse 2005). The side effects are dangerous enough to warrant concern whether use is for treatment or enhancement.

2.2.1 Education

Although they often have dangerous side effects and provide at best only moderate augmentation, cognitive enhancers’ ability to augment the functioning of the capacities of focus and concentration suggests profound implications for our lives and, in particular,

¹¹ It does not follow from my focus on the side effects of pharmaceutical stimulants that pharmaceutical non-stimulants are safer. Many of the side effects of non-stimulants mirror those of pharmaceutical stimulants. Traditionally, many held that since pharmaceutical non-stimulants were not amphetamine based, they were less dangerous in respect to addiction. However, there is a dispute on whether this is actually true. Since empirical studies and questions on the addictiveness of pharmaceutical non-stimulants have only recently begun, I remain neutral to the question of whether pharmaceutical non-stimulants are less addictive than pharmaceutical stimulants.

for our academic institutions. The central goal of my project is to elucidate the proper role of cognitive enhancers within education and our academic institutions. Elucidating the role of cognitive enhancers across the entire domain of education and within all the diverse institutions in our educational system is, however, simply too difficult and broad for one research project. For simplicity, I limit the scope of my project to the academic institutions of colleges and universities, which I refer to as *academia*, and focus on undergraduate education.

While I return to the issue of academia in subsequent chapters, I will stipulate it rather broadly here. The goal of academia is to expose students to the sciences, arts, and humanities, which facilitates the development of intellectual capacities. Developing our intellectual capacities is not only prudent but also good for human well-being. Therefore, exposing students to the sciences, arts, and humanities is both instrumentally beneficial and good for a student's own sake.

The achievement of, or at least the strive to achieve, this goal is done by structuring the academic activities within academia around two aims:

1st Aim: Progressively provide students with information of greater depth.

2nd Aim: Progressively work to improve students' skill sets of reading comprehension, arithmetic, writing, and critical thinking.

As a student progresses through academia, the first aim structures the courses and course levels to be progressively more challenging and complex. For example, a beginning-level chemistry course in academia is typically more challenging and comprehensive than a chemistry course taken in high school; moreover, as chemistry courses advance to upper tier or graduate level, the information is of greater depth. When a student is presented with information that is evermore demanding and intricate, then the second aim structures

the academic activities such that the student's skill sets must also advance. To work through advanced chemistry, a student must consistently expand and refine their skill sets of reading comprehension, arithmetic, and critical thinking. So activities in academia are structured around these two aims.

Although academic institutions certainly have different measures of assessment, and some may (rarely) not have any measures at all, I stipulate that assessment of students in academic activities is a fundamental component of academia. It is either to a set standard, such as assessing a student's work against the accepted standard of chemistry, or against the conceptual standard for students at that level, such as assessing a student's academic activities against what an average student at that level could achieve. This assessment of students is in a competitive environment.

While these are the general goals and aims of academia, my research project concentrates on the role of cognitive enhancers among students in academia. Among undergraduate and graduate students surveyed, 20 percent reported using cognitive enhancers, out of which 90 percent indicated that the use was for enhancement, not for treatment (White, Becker-Blease and Grace-Bishop 2006).¹² To illustrate some of the context and considerations of undergraduate students' use of cognitive enhancers, I provide the following three cases.

Undergraduate students Teresa, Edith, and Oliver are studying Ludwig Wittgenstein's *Philosophical Investigations* in a philosophy class. When studying Wittgenstein, which involves the academic tasks of researching, reading, and writing, Teresa takes 10

¹² That 20 percent of undergraduate and graduate students reported using cognitive enhancers is alarming because the use of prescription stimulants for non-medical purposes among all Americans between 21 and 25 years is only 12.3 percent (Substance Abuse and Mental Health Services Administration 2009).

milligrams of dextroamphetamine every four to six hours. Teresa has ADHD, and this cognitive enhancer allows her capacities of focus and concentration to function at proficient levels.

While studying Wittgenstein, Edith also takes 10 milligrams of dextroamphetamine every four to six hours, but unlike Teresa, Edith does not have a condition or disorder; instead she uses a cognitive enhancer because of her passion for philosophy. Using cognitive enhancers enables her capacities of focus and concentration to function at higher levels, allowing her not only to work efficiently and effectively on these academic tasks but also to devote more of her time to learning philosophy.

The last student, Oliver, also takes 10 milligrams of dextroamphetamine every four to six hours, but he does not take this cognitive enhancer as treatment for a neurological disorder or because of a passion for learning philosophy. He takes it because he spent the majority of the lectures and discussion sections posting pithy comments on Facebook and not paying attention. He doesn't understand the material and is using the cognitive enhancer to improve his capacities of focus and concentration while he pulls an "all-nighter" to write his final paper.

In the broadest terms, the cases of Teresa, Edith, and Oliver describe some, but certainly not all, of the considerations and contexts involved in the use of cognitive enhancers. Although these three cases do not account for all considerations and contexts pertaining to the use of cognitive enhancers, they can be used to illustrate the sort of cases that fall outside the range of my project's interest. At the moment, my interest is not on cases involving cognitive enhancers as a treatment. I take Teresa's use of cognitive enhancer as being treatment and will not consider her case or similar cases when

explicating the role of cognitive enhancers in academia. My interest is in cases like those of Oliver and Edith: the 90% of students using cognitive enhancers in academia where the use is strictly for enhancement.

My project begins by evaluating whether this use of cognitive enhancers in academia is permissible. My assessment of a student's "act" of using an enhancement relies on a stipulated distinction between an "act" and an "action".¹³ An act is often taken in the narrow sense of a person's particular behavior or a singular instance, whereas an action broadly includes the person's act but also an account of the relevant circumstances and considerations. In some cases, one need only rely on an act in the narrow sense when evaluating a person, such as in murder or rape. Yet in the case of student use of cognitive enhancers, it seems that a description of the situation and considerations, such as the particulars of an academic environment or the reasons a student takes the cognitive enhancer, is needed in our assessment. Thus in evaluating whether the use of cognitive enhancers in academia is permissible, I consider the situation and a student's reasons for using an enhancement.

An initial way to evaluate the permissibility of student use of cognitive enhancers is in respect to the current rules in academia. For simplicity, I take *rules in academia* as referring to the institutional rules: the regulations or protocols governing students' actions in academia. Starting with institutional rules is important since these rules stipulate, or at least indirectly indicate, which actions are permitted and prohibited for students.

Although I cannot provide an exhaustive account in the following section of all institutional rules that in some way pertain to cognitive enhancers, I examine the

¹³ Although this stipulated distinction is attributed to Christine Korsgaard, Jon Garthoff brought this distinction to my attention (Korsgaard 2009).

institutional rules most commonly used in evaluating the use of cognitive enhancers: those prohibiting a student from using illegal drugs in academic activities and those concerning cheating.

2.3 Enhancement in Academia: Institutional Rules and Permissibility

Evaluating the permissibility of Oliver and Edith's use of cognitive enhancers starts by asking about institutional rules: "What *are* the regulations or codes governing student use of cognitive enhancers in academia?" Typically the institutional rules considered as governing student use of cognitive enhancers are (i) those prohibiting a student from using illegal drugs in academic activities and (ii) those concerning cheating. In respect to these institutional rules, the standard evaluation of Oliver and Edith's cases is that in principle, their use of cognitive enhancers is impermissible. According to the first rule, their use of cognitive enhancer is impermissible because it involves the illegal use of a prescription pharmaceutical. For the second rule, their use of cognitive enhancers is impermissible because it is cheating.

I think that this standard evaluation of Oliver and Edith's use of cognitive enhancers is disputable. The institutional rule prohibiting students from using illegal drugs in academic activities clearly stipulates that the distinction between a permitted and a prohibited use of cognitive enhancers depends on whether a student has a legal prescription. Yet the complexities of neurology, pharmacology, and medicine are such that who gets a legal prescription is often rather arbitrary and an unreliable factor for determining permissibility. Thus although one does not want students in academia to use illegally obtained cognitive enhancers, it is not clear that having a legal prescription

decisively determines that the use of cognitive enhancers for enhancement is impermissible in academia.

In respect to institutional rules concerning cheating, the first problem is that there are often no rules stipulating that the use of cognitive enhancers for enhancement is cheating, which has led the discussion of enhancement in academia often to center on the question, “Is a student who uses cognitive enhancers for enhancement cheating?” This question of cheating has generated two well entrenched positions that are inconclusive and thus fail to advance the discussion of enhancement in academia.

In the following sections, beginning with the rule prohibiting a student from using illegal drugs in academic activities, I examine current institutional rules and their evaluations of cognitive-enhancer use, and I argue that the permissibility of student use of cognitive enhancers is not determined decisively by these rules.

2.3.1 Institutional Rules Prohibiting a Student from Using Illegal Drugs

Most if not all academic institutions have rules that prohibit a student from using an illegal drug during academic activities. It is illegal to use certain pharmaceuticals without a prescription issued by a medical professional or to misuse a prescription pharmaceutical. Misuse often is stipulated as the use of a prescription pharmaceutical without having a prescription and—importantly—the use of a prescription pharmaceutical to experience certain feelings (Substance Abuse and Mental Health Services Administration 2010).

Typically the second stipulation of misuse is interpreted as the use of prescription pharmaceuticals for “off-label” effects or purposes (“off label” means to use psychotropic pharmaceuticals for reasons other than the “indication or usage” approved by a regulatory

body such as the Food and Drug Administration or the European Medicines Agency). By this conception of misuse, although persons may have a legal prescription for a pharmaceutical, because they use it for the off-label effect of experiencing certain feelings (e.g., to get high), it is illegal. In academia, the institutional rule prohibiting a student from using illegal drugs during academic activities includes the off-label misuse of a drug.

In respect to this institutional rule, the evaluation of Oliver and Edith's cases goes as follows. If Oliver and Edith do not have a prescription for these cognitive enhancers, then their use is illegal. Moreover, even if Oliver and Edith have a legal prescription, their use of these cognitive enhancers for enhancement is off label and an illegal misuse of the pharmaceutical. Since the use of illegal drugs or the misuse of a legal prescription is prohibited in academia, Oliver and Edith's use of cognitive enhancers is considered impermissible. The conclusion is that student use of cognitive enhancers for enhancement is impermissible because of an institutional rule prohibiting illegal drug use by students.

Provisionally, it seems reasonable that according to this institutional rule, Oliver and Edith's use of cognitive enhancers is impermissible. If Oliver and Edith obtained these cognitive enhancers illegally, then they are prohibited from using them. In fact, this institutional rule holds that even if these cognitive enhancers were legally obtained, Oliver and Edith's use of them is to be considered a misuse because they are using this prescription pharmaceutical for off-label effects and purposes. For the moment, I am going to bracket this rule's conception of misuse and the rule's reliance on having a legal prescription: I argue that this reliance on having a legal prescription is problematic.

Consider that in this institutional rule, what makes a student's use of cognitive enhancers permissible is that they have a legal prescription. Accordingly, this rule holds that a student with a legal prescription is permitted to use the drug, whereas a student without a prescription is prohibited from using cognitive enhancers. However, upon further reflection, having a legal prescription is an unreliable factor for determining permitted and prohibited use of cognitive enhancers because obtaining a legal prescription rests on a medical professional making a difficult diagnosis or, in many cases, is simply a matter of a particular medical professional's discretion regarding enhancement.

First, consider that there is great difficulty in making an accurate diagnosis of the conditions or disorders requiring cognitive enhancers. These conditions or disorders often do not have an easily identifiable list of necessary or sufficient symptoms to make a diagnosis. For example, ADHD consists of a set of heterogeneous symptoms that span from environmental, physical, and social dimensions (Parens and Johnston 2009; Singh 2008). These symptoms do not fit within clear and distinct categories but are on a continuum (L. Singh 2008). As a result, when a physician or psychiatrist makes a diagnosis, they are often relying on their discretionary judgment for assessing the degree of these symptoms.

However, this discretionary judgment in assessing symptoms and diagnosing ADHD has been called into question in respect to consistency, precision, and validity (Singh 2008; Schermer et al. 2009). In many cases, individuals diagnosed as having ADHD may not actually have it and, worse, some with ADHD are not diagnosed as having it. In fact, there is also a small but growing empirical literature that suggests that some students who

claim they use cognitive enhancers for explicit enhancement purposes may be self-medicating an undiagnosed condition or disorder (L. Singh 2008). A medical professional might simply misdiagnose a student and, in doing so, prescribe cognitive enhancers to students who do not need it and also not prescribe to those that do.

Moreover, there is a dearth of guidelines for clinicians about prescribing pharmaceuticals for enhancement. Consider that the American Academy of Neurology (AAN) recently published a guide for neurologists recommending different approaches to handling requests for “neuroenhancement” from healthy patients (Larriviere, et al. 2009). Although the AAN’s guide neither promotes nor discourages prescribing cognitive-enhancers to healthy patients, it does suggest that the decision to prescribe cognitive enhancers as an enhancement rests upon a neurologist’s discretion. In addition to the difficulty of discretionary judgments for the diagnosis of a condition or disorder, a neurologist could simply decide that in certain situations, it is appropriate to prescribe patients cognitive enhancers for enhancement.

The problem in relying on having a legal prescription to determine permissibility of students using cognitive enhancers is that obtaining a legal prescription might be the result of something as arbitrary as which particular medical professional they consult. Consider the following: let’s say that Oliver, Edith, and Teresa all go to see the same medical professional. Oliver and Edith tell the medical professional that if prescribed cognitive enhancers, their academic work will improve because their capacities of focus and concentration will be augmented. This medical professional, who also has pro-enhancement sympathies, agrees and prescribes cognitive enhancers. Teresa consults the same medical professional and her symptoms of ADHD are mistaken for those of a

behavioral disorder. She is not prescribed cognitive enhancers and later illegally obtains cognitive enhancers from a friend. According to the institutional rule prohibiting students from using illegal drugs in academic activities, Oliver and Edith's use of cognitive enhancers is permissible because of a legal prescription but Teresa's use of cognitive enhancers is not.

Now let's imagine a possible world, exactly like our world, except that the medical professional whom Oliver, Edith, and Teresa visit does not have pro-enhancement sentiments. In this possible world, the medical professional does not prescribe Oliver and Edith cognitive enhancers but does accurately diagnose Teresa and prescribes her cognitive enhancers. According to the institutional rule prohibiting students from using illegal drugs in academic activities, Oliver and Edith's use of cognitive enhancers is now prohibited and, because of a legal prescription, Teresa's is permitted.

By comparing these two possible scenarios and their applications of the institutional rule to the cases of Oliver, Edith, and Teresa, it seems reasonable to want a justification for why Oliver and Edith's use of cognitive enhancers is permissible in the first scenario but impermissible in the second scenario. The justification is that in one possible world, they consulted a medical professional who had positive sentiments about enhancement, and in the other possible world, the medical professional lacked positive sentiments about enhancement. Although this explanation of the difference between the two worlds is accurate, it is too arbitrary to serve as a justification. The justification for why one student is permitted to use cognitive enhancers but another is not should not stem from the random assignment of a medical professional.

Moreover, that Teresa, who has a condition or disorder requiring the use of cognitive enhancers, might be improperly denied access to cognitive enhancers in some situations should also give us pause. It does not take a possible world experiment for us to realize that, as it stands, it is likely that many students who think they are using cognitive enhancers as an enhancement are in fact using them as a treatment and, alternatively, many students who think they are using cognitive enhancers for treatment are really using them as an enhancement. Therefore, obtaining a legal prescription is not a reliable factor, and its unreliability is a reason for thinking that the institutional rule prohibiting the use of illegal drugs does not decisively determine that student use of cognitive enhancers for enhancement is impermissible.

2.3.2 Misuse of a Pharmaceutical

One might object to the preceding section because in bracketing this institutional rule's stipulation of misuse, the rule's ability to explain adequately why certain uses of cognitive enhancers are impermissible has been removed. The rule's stipulation is a conception of misuse that always deems off-label uses of prescription pharmaceuticals to be misuse because the medical indication of cognitive enhancers is for treatment of certain conditions or disorders, not enhancement. Even if a medical professional is not violating prescription guidelines, they are prescribing a pharmaceutical for off-label effects, and this is a misuse. In cases like those of Oliver and Edith, because they are using cognitive enhancers for enhancement, which is an off-label effect even if they have a legal prescription, their use should be prohibited because it is for off-label purposes and therefore a misuse.

The problem with the objection to this institutional rule's conception of misuse is that it is based upon the presupposition that off-label use of prescription pharmaceuticals is always misuse (Dresser and Frader 2009). However, such a conception of misuse is inaccurate because off-label use of pharmaceuticals is, in fact, a common and necessary practice in medicine. A medical professional may prescribe a pharmaceutical specifically for the off-label effect. In the palliative care of patients in end-of-life stages, a medical professional's reason for prescribing certain pharmaceuticals often is explicitly for the off-label effect (the term for a medical professional's reasoning for prescribing pharmaceuticals or treatments is called an "indication"). The most common reason for using morphine is as an analgesic, but morphine's off-label effect is the suppression of breathing rate. In palliative treatment, morphine is a common, if not standard, form of treatment to reduce the strain and anxiety of heavy and labored breathing and to dry out fluids that accumulate in respiratory passages (Enck 2002). Although this use of morphine is for the off-label effect, it certainly is not a misuse. Similarly, the off-label effects of cognitive enhancers combined with standard treatments are increasingly implemented in new developmental therapies for the conditions or disorders of schizophrenia or Alzheimer's disease (Hogarty MSW et al., 2004; Stein 2008; Housden, Morein-Zamir and Sahakian 2011). In these cases, it is not clear that off-label use is misuse.

One might think that the difference between using cognitive enhancers for schizophrenia or Alzheimer's disease and Oliver and Edith's use is that the former is for treatment and the latter is for enhancement. However, we should note that the demarcation line between the clinical use of cognitive enhancers for treatment and for

enhancement is not all that clear. Since modafinil provides alertness and energy, a physician may prescribe it to a healthy patient without narcolepsy to help them adjust to working different shifts (e.g., moving from a day to a night shift) or prescribe it to a patient to prevent jetlag. In these cases, the physician is prescribing pharmaceuticals to augment their patient's capacities, but it seems equally plausible that they are treating a condition or disorder whose duration is extremely short.

Further, it is plausible that a physician could prescribe modafinil as a prophylactic treatment to prevent fatigue and inattentiveness. This use of modafinil, in fact, has gone on for the past 30 years with combat pilots in the United States military (Caldwell, et al. 2004). One might consider the treatment of fatigue and inattentiveness as inappropriate, but in the case of patients with multiple sclerosis, this is exactly the medical indication for prescribing them methylphenidate, dextroamphetamine, and modafinil. The difficulty in delineating the clinical use of cognitive enhancers for treatment and enhancement and this rule's inaccurate conception of misuse is another reason for thinking that the rule does not help definitively determine that student use of cognitive enhancers for enhancement is impermissible.

In summary, for reasons concerning the unreliability of obtaining a legal prescription as well as holding an inaccurate conception of misuse, the institutional rule prohibiting a student from using illegal drugs in academic activities does not decisively determine that students' use of cognitive enhancers for enhancement is impermissible.

The preceding examination of this institutional rule is not exhaustive and one can certainly find flaws in the argument presented. Yet even in conceding these defects, it still seems reasonable that the argument is significant because it illustrates that many

presuppositions about neurology, pharmacology, and medicine that this institutional rule takes for granted are inaccurate.

The focus in the following section concerns the other institutional rule commonly applied to evaluating students' use of cognitive enhancers: cheating.

2.4 Institutional Rules Concerning Cheating

Often applied separately or in conjunction with other institutional rules, the rules relevant to students' use of cognitive enhancers include those surrounding cheating. The basis for these institutional rules is that in academia, there are regulations or codes governing fair competition. These are not meant to ensure that everyone will finish academic competition equally but rather to ensure that the rules pertaining to competition are fair (e.g., when playing golf, only counting half of my shots is not a fair competition). Although academic competition inevitably involves inequalities because not all students have equal academic skills, it does not follow that any action of a competing student is permissible to compensate for unequal skill sets. Even if you are terrible at logic, you cannot bring a logic textbook to a "closed-book" logic exam.

An institutional rule concerning cheating is a rule that stipulates which actions constitute cheating. A factor used to determine which actions constitute cheating considers whether the action provides the student with an unfair advantage. In the case of cognitive enhancers, it seems plausible to think that Oliver and Edith's use of cognitive enhancers provides them with an unfair advantage since it boosts their capacities of focus and concentration to higher functioning levels. By using cognitive enhancers, Oliver and Edith's capacities of focus and concentration are operating at levels beyond those of their

peers, violating fairness in competition in academia.¹⁴ If one applies this institutional rule to Oliver and Edith's cases, then their uses of cognitive enhancers are impermissible because they are cheating (Greely, et al. 2008; Goodman 2010; Schermer 2008).¹⁵

Despite the prominence and reasonableness of thinking that Oliver and Edith are violating an institutional rule concerning cheating, upon reflection, the problem is that using cognitive enhancers does not easily fit within the normal paradigm of cheating. According to Stuart P. Green (2004), cheating is "the intentional violation of a rule in order to gain an unfair advantage over others." Yet few academic institutions have rules stipulating that a student is prohibited from using a cognitive enhancer for enhancement unless it is illegally obtained. As a result, it is not clear that institutional rules concerning cheating can apply to Oliver and Edith's use of cognitive enhancers. If Oliver and Edith are prohibited from using cognitive enhancers, it cannot be because it violates institutional rules concerning cheating. Thus it is also reasonable to think that institutional rules concerning cheating do not decisively determine the permissibility of cognitive enhancers for enhancement in academia.

At this point, the use of Oliver and Edith's cases is in respect to academia's institutional rules prohibiting a student from using illegal drugs in academic activities and to those concerning cheating. The argument is that these rules do not decisively determine that a student's use of cognitive enhancers for enhancement is impermissible.

¹⁴ Some will consider academia as cooperation, not competition. However, as both Stuart P. Green and Bernard Gert have argued, cooperation does not exclude competition. For example, in a game, both parties are competing against the other. Yet the game is still cooperative in that they are playing the same game. One cannot play basketball against another person who is trying to play baseball. Both parties agree to play one specific game and adhere to one set of rules and regulations. In a similar sense, academia, even if considered in respect to cooperation, can involve competition (Green 2004; Gert 2005).

¹⁵ Although Rob Goodman and Maartje Schermer do not consider the use of cognitive enhancers as cheating per se, both provide excellent examinations of the activities within academia in respect to cheating, unfair advantage, and enhancement (Goodman, 2010; Schermer 2008a; Schermer 2008b).

It does not follow from this argument that the use of cognitive enhancers is permitted in academia; it only follows that the evaluation of Oliver and Edith's use of these enhancements as being impermissible can be reasonable disputed.

That academia's institutional rules fail to determine decisively the permissibility of student use of cognitive enhancers has led the discussion of enhancement in academia to focus on whether, in principle, the use of cognitive enhancers is cheating. This shifts the focus away from current or possible advances in biomedical technologies or medical procedures, prescribing practices in medicine, and societies' perceptions of cognitive enhancement to center on whether the use of cognitive enhancers for enhancement in academia is fundamentally a question of cheating. The implication of this shift in focus is that before one is able to formulate institutional rules governing student use of cognitive enhancers in academia, one must determine whether there the use of these enhancements is cheating or not.

In the following sections, I examine the question of cheating, the positions that think the use of cognitive enhancers is cheating (or not), and the ramifications this focus on the question of cheating has had on issues of enhancement in academia.

2.5 Questions of Cheating

“Anything worth having is worth cheating for.”
—W.C. Fields

In the contemporary discussion of enhancement in academia, answering the question, “What *should be* the institutional rules governing student use of cognitive enhancers in academia?” requires an antecedent answer to the question of cheating: “Is a student who uses cognitive enhancers for enhancement cheating?” The permissibility of students using cognitive enhancers depends upon whether a student's use of cognitive enhancers is

cheating. By answering the question of cheating, one is then able to formulate institutional rules for governing student use of cognitive enhancers in academia. If using cognitive enhancers is cheating, then academia should have institutional rules prohibiting students from using them; if using cognitive enhancer is not cheating, academia should have institutional rules that permit students to use them.

It is understandable why the question of cheating frames the current discussion of enhancement in academia. First, at least under normal conditions, cheating is wrong. Second, if using cognitive enhancers is cheating, then it is easy to assess a student's discrete act (did they use a cognitive enhancer or not?). Third, the notion of cheating encapsulates difficult and different conceptions of enhancements by regarding them as being "positional goods" (items that provide or give a person a competitive advantage). Finally, the question of cheating allows one easily to categorize answers to this question in one of two positions: those who think a student's use of cognitive enhancers is cheating and those who do not.

The question of cheating has generated two well-entrenched positions that are inconclusive and fail to advance the discussion of enhancement in academia. In the following, I reconstruct in broad strokes these two positions in broad strokes. Although this reconstruction of the two positions does not perfectly align with any particular author's work, it does present the central arguments about cheating. After reconstructing a position's argument, the challenges to the argument are presented, not as refutations but to show that the arguments are inconclusive. That these arguments afford no conclusive answers has prevented the discussion of enhancement in academia from advancing. In particular, there are few approaches that provide a framework for the role of enhancement

in academia and what academia's institutional rules should be for governing students' use of cognitive enhancers.

2.5.1 Students Who Use Cognitive Enhancers Are Cheating

For those who think a student who uses cognitive enhancers is cheating, their argument is that although academia currently lacks explicit or intentional institutional rules against the use of cognitive enhancers, there should be such a rule. Their reasoning is that a student who uses cognitive enhancers has an *unfair competitive advantage* against other students because her capacities of focus and concentration are functioning well beyond those of non-enhanced students. This student has more energy for studying (since cognitive enhancers are amphetamine based) and higher functioning levels of focus and concentration, while human physiology constrains students who are not using cognitive enhancers. Therefore, Oliver and Edith's use of cognitive enhancers is in principle impermissible since these enhancements result in them having an unfair competitive advantage. The implication is that there should be institutional rules prohibiting students from using a cognitive enhancer in academia.

Neil Levy's *Ethical Parity Principle* (EPP) poses a challenge for those who think a student who uses cognitive enhancers is cheating (Levy 2007). Levy develops EPP in his discussion of extended and embedded hypotheses of human cognition. To understand EPP, I must briefly explicate both the extended and embedded human cognition hypotheses in cognitive science and neuroethics.

The extended cognition hypothesis holds that human cognition should be understood as a set of internal and external mechanisms and processes; this leads many such as Levy and Andy Clark to argue that human cognition should be understood as *extending beyond*

a person's cranium into the world (Levy 2007; Clark 2001; Horst 2011). Levy summarizes the view:

[Human cognition] should be understood as the set of mechanisms and resources with which we think, and that set is not limited to the internal resources made up of neuron and neurotransmitters. Instead [human cognition] includes the set of tools we have developed for ourselves—our calculators, our books, even our fingers when we use them to count—and the very environment itself as it supports cognition. (Levy 2007, 29)

In the extended cognition hypothesis, cognition is best understood as being *transcranial*.

In other words, even though our neurons are separated from the environment by our skulls does not mean cognition ends there. For this hypothesis, the environment is a constitutive element of human cognition. However, many such as Frederick Adams, Kenneth Aizawa, and Robert Rupert oppose the extended hypothesis of human cognition because, broadly, to account for and assess human cognition, one needs to know in what form human cognition consists. Put otherwise, transcranial human cognition is simply too expansive (Adams and Aizawa 2008; Rupert 2004). For those who oppose the extended cognition hypothesis, their argument is not that the environment does not support and assist with human cognition but that if we are to understand the nature of human cognition, understanding it as extending into the environment is unhelpful and incorrect.

The extended cognition hypothesis is a topic of great controversy and debate in cognitive science and neuroethics. For the purposes of my research paper, what is important is that the embedded cognition hypothesis and EPP are conceptions that result from the debate. In Levy's defense of an extended cognition hypothesis, he argues that even those who oppose this hypothesis would reasonably agree that human cognition should be understood, at minimum, as being *embedded* in an environment. Unlike extended hypothesis, the embedded cognition hypothesis holds that while human

cognition is located within the cranium, environment scaffolding such as external tools and props are integral to human cognition (Horst 2011; Clark 2001). Levy states:

What matters is that we acknowledge that it is the combination of our brains and the tools and props upon which we lean that makes us so smart ... high-level cognition, the kinds of thinking that makes us [humans] the kind of species we are, is heavily dependent on the environment. (Levy 2007, 59)

In the embedded cognition hypothesis, human cognition is understood as being situated in an environment that supports and assists our cognition. Human cognition should not be thought of as extending from and consisting in our environment but rather that the environment is *integral* to supporting and assisting human cognition.

The embedded cognition hypothesis is not only a reasonable way to understand human cognition—even opponents such as Frederick Adams, Kenneth Aizawa, and Robert Rupert agree—but is also particularly relevant in the case of academia. One does think, if only roughly, that our environment via external props such as books, calculators, smart phones, laptops, or the Internet plays a role in supporting and assisting student development of intellectual capacities. If the embedded cognition hypothesis is reasonable, and I think it is, then there are not only external props (books, notebooks, and laptops) but also internal props such as psychotropic pharmaceuticals. This means that cognitive enhancers are internal props because they assist and support cognition by augmenting a student’s capacities of focus and concentration.

Given that embedded cognition hypothesis is reasonable and that both internal and external props support and assist human cognition, the important issue is to devise a way to assess these props for permissibility. Levy offers EPP as fair way to do so:

EPP: Alterations of external props are (*ceteris paribus*) ethically on par with alterations of the brain, to the precise extent to which our reasons for

finding alterations of the brain problematic are transferrable to alterations of the environment in which it is embedded. (Levy 2007, 61)¹⁶

According to EPP, whether a prop is internal or external is by itself irrelevant. Instead, of importance are the *reasons* for why one might hold a certain prop as being permissible or impermissible (or problematic). For example, if it is impermissible to use memory-enhancing psychotropic pharmaceuticals because they provide an unfair advantage to some students, then it follows that the use of a smart phone would also be impermissible for the same reason. Alternatively, if it is permissible to use memory-enhancing psychotropic pharmaceuticals because they do not provide a student with an unfair advantage, then it follows that the use of a smart phone is also permissible.

Returning to the issue of cognitive enhancers in academia, EPP presents a challenge for those who think a student who uses cognitive enhancers is cheating. According to EPP, if cognitive enhancers are impermissible because they provide an unfair competitive advantage, then many commonly accepted external props would also be impermissible for the same reasons. Compare the internal prop of cognitive enhancers with external props like laptops or quiet apartments. Under EPP, if it is impermissible for a student to use cognitive enhancers because they provide an unfair advantage, then one could equally hold that it is impermissible for a student to use a laptop or to live in a quiet apartment. The strength of this argument is that cognitive enhancers, laptops, and quiet apartments function in a similar manner with respect to supporting and assisting human cognition. A laptop does not directly improve a student's cognition, but it does support and assist with calculations and access to resources. Quiet apartments support and assist cognition by

¹⁶ Levy actually provides two versions of EPP (weak and strong), but because I remain neutral on issues of the extended mind hypothesis, and with respect to the scope of this research project, we need only be concerned with what he terms the weak EPP (Levy 2007).

providing privacy and solitude for study. Similarly, cognitive enhancers support and assist cognition by augmenting a student's capacities of focus and concentration.

According to EPP, the reasons for deeming cognitive enhancers impermissible are transferable to quiet apartments or laptops. By extension, the argument that students who use cognitive enhancers are cheating also implies that students who use laptops or quiet apartments are cheating as well.

One who thinks the use cognitive enhancers is cheating might concede that laptops and quiet apartments do provide some students with an advantage, but this advantage is not strong enough to be considered cheating. Although this is a plausible response, for those who think a student who uses cognitive enhancers is cheating, the challenge is providing conclusive reasons or formulating an argument that differentiates the advantages of quiet apartments and laptops from those of cognitive enhancers.

A second and more difficult challenge is in distinguishing cognitive enhancers from other commonly accepted internal props like coffee and caffeine-based energy drinks. To illustrate, considered a modified EPP, which I refer to as EPP (internal).

EPP (internal): Alterations of internal props are (*ceteris paribus*) ethically on par with other internal props, to the precise extent to which our reasons for finding one internal prop problematic is transferrable to other internal prop.

According to EPP (internal), the focus is on the reasons why an internal prop is considered impermissible or problematic (or permissible) with respect to other internal props. The current argument contends that the reason cognitive enhancers are impermissible is because in elevating a student's level of alertness and focus, these enhancements provide an unfair competitive advantage. Yet coffee and caffeine-based energy drinks are both permissible internal props that also provide students with elevated

levels of alertness and focus. In fact, empirical studies indicate that in some cases the use of coffee by a person whose capacities of focus and concentration functioned at average levels was more effective in providing alertness and higher scores on cognitive tests than was the use of cognitive enhancers (Randall, Fleck and Shneerson 2004; Wesensten, et al. 2004). According to the EPP (internal), if cognitive enhancers are impermissible for reasons of unfair competitive advantage, then this reason is transferable to coffee and caffeine-based energy drinks, making them impermissible as well.

Even if one concedes that coffee and caffeine-based energy drinks provide a competitive advantage, is this a reason for holding them to be impermissible? It is unpersuasive to think so, and the following example illustrates why. Let's say that in Edith's philosophy class there are two other students of note: Corey and Ian. Corey and Ian do not have conditions or disorders necessitating the need for cognitive enhancers and do not use them for enhancement. On the day of the final exam, Edith takes a cognitive enhancer in the morning, Corey drinks coffee with double espresso shots half an hour before class, and Ian takes and drinks nothing. In comparison to Ian, Corey's capacities of focus and concentration augmented by coffee seem to be a competitive advantage but are not unfair. If it is a competitive advantage but not unfair, how does it differ from Edith's use of a cognitive enhancer? Therefore, EPP (internal) shows that for those who think the use of cognitive enhancers is cheating, a challenge is distinguishing how the competitive advantage provided by coffee and caffeine-based energy drinks differ from that of a cognitive enhancer.

A potential response could be that unlike coffee or energy drinks, cognitive enhancers have a greater potential for abuse and are more dangerous to a person's health. The

difference lies in health risks for students. An argument could be that the conjunction of competitive unfairness and risk to student health is a reason to prohibit a student from using cognitive enhancers while permitting a student to use coffee and caffeine-based energy drinks.

However, this potential response overlooks the acceptance of some risks to our health in the pursuit of enhancement. Caffeine can boost our capacities of focus and concentration, but it is highly addictive and causes headaches, anxiety, and withdrawal symptoms. Nicotine also improves our capacities of focus and concentration, but the most efficient delivery systems for it (cigarettes and chewing tobacco) have an established link to cancer and are highly addictive.¹⁷ Yet there is no limit on student consumption of coffee or caffeine-based energy drinks or their use of cigarettes and chewing tobacco because of health risk. So prohibiting the use of cognitive enhancers on the grounds of potential abuse, health risks, *and* competitive fairness seems to overlook the fact that many commonly accepted internal props also pose problems of abuse, health risks, and competitive fairness.

Along with potential abuse, health risks, and competitive fairness, a salient consideration one might use to differentiate cognitive enhancers from coffee and caffeine-based energy drinks is that cognitive enhancers are biomedical technologies (pharmaceuticals) that are not yet commonly accepted or widely used. Although coffee and caffeine-based energy drinks may pose problems of abuse, health risks, and competitive fairness, a reason (one not transferable to cognitive enhancers) that they are permitted is that they are not relatively new biomedical technologies and are commonly

¹⁷ Sadly, this link between smoking and cancer was empirically established as early as 1954 (Doll and Hill 1954).

accepted or widely used. However, this response does not provide a reason, at least not an in-principle reason, that differentiates cognitive enhancers from commonly accepted or widely used products. To illustrate, return to the examples of Edith, Corey, and Ian. Instead of coffee, Corey decides to use a Guarana-based drink. Guarana is a South American plant whose seeds contain a higher concentration of caffeine than those of coffee (www.drugs.com 2012). Currently, the FDA has not evaluated the safety or effectiveness of Guarana in products, but let's stipulate that it is stronger and provides an augmentation of our capacities of focus and concentration that is on par with those of cognitive enhancers. Moreover, let's grant that Guarana poses health risks similar to cognitive enhancers. On the day of the final exam, Edith takes a cognitive enhancer in the morning, Corey drinks a Guarana-based drink half an hour before class, and Ian takes and drinks nothing. In comparison to Ian, if this Guarana-based drink augments Corey's capacities of focus and concentration, is that not an unfair advantage? If it is an unfair advantage, how does it differ from Edith's use of a cognitive enhancer?

Both cognitive enhancers and Guarana-based products provide augmentation to Corey and Edith's capacities of focus and concentration that are greater than Ian's capacities. Both enhancers are not commonly accepted or widely used, pose health risks or at least unknown health risks, and have the potential for abuse. It seems that if one wants to prohibit cognitive enhancers because they are not commonly accepted or widely used, then one also would have to prohibit a student from using a Guarana-based product. Yet the fact that this argument would hold that a Guarana-based product is also prohibited demonstrates that permissibility of a biomedical technology depends on common acceptance or wide use. At least in principle, that some things are commonly

accepted or widely used is not a reason that differentiates cognitive enhancers from coffee, caffeine-based energy drinks, or Guarana-based products.

Therefore the EPP (internal) shows that for those who think the use of cognitive enhancers is cheating, a challenge lies in providing reasons for why the advantage provided by cognitive enhancers differs from the advantage that coffee and caffeine-based energy drinks provide. Until they can provide such reasons, their claim that these enhancements are impermissible faces difficult challenges.

For those who think students who use cognitive enhancers are cheating, the challenges regarding competitive advantage do not indicate that the position is indefensible or that the countering position is correct. Instead they illustrate that this position does not provide conclusive reasons for thinking that the use of cognitive enhancers is necessarily cheating. Without conclusive reasons, the use of these enhancements in academia is not in principle impermissible. Thus, for reasons relating to cheating, it is difficult to argue that there should be institutional rules prohibiting students from using cognitive enhancers in academia.

In the following section, I present the argument of and challenges to those who think that students who use cognitive enhancers are not cheating.

2.5.2 Students Who Use Cognitive Enhancers Are Not Cheating

According to those who think that students who use cognitive enhancers are not cheating, these enhancements are progressive educational tools that will result in benefits for everyone in the long term. Thus, at least in respect to questions of cheating, one should not create institutional rules prohibiting a student from using cognitive enhancers.

In this argument, while cognitive enhancers are positional goods, they are also educational tools that maximize students' intellectual capacities. As educational tools have progressed, once-forbidden things such as calculators and laptops sometimes gain acceptance and become almost mandatory. Like cognitive enhancers, calculators and laptops maximize a student's intellectual abilities. Cognitive enhancers differ only in that this enhancement is a more direct (and perhaps more effective) tool for maximizing a student's capacities (e.g., providing higher functioning for concentration, focus, and in some cases better spatial reasoning).

Because cognitive enhancers maximize students' intellectual capacities more directly and effectively, it is perhaps reasonable to assume that students who use these enhancers might be more likely to participate in academia, which could potentially increase the greater achievements of academia (e.g., obtaining a degree, making a scientific breakthrough, creating new philosophical approaches, writing eloquent poetry, etc.) (Mehlman 2004). If this is the case, then students who use cognitive enhancers likely will have a *network effect* for cognitive enhancers (Buchanan 2008; Buchanan 2011). A network effect for cognitive enhancers means that the value and importance of these enhancements rise as increasing numbers of students use cognitive enhancers to maximize their intellectual capacities.¹⁸ Thus, just as there was a network effect for cell phones, there will also be a network effect for cognitive enhancers.

The overall increase in students' use of cognitive enhancers would most likely amplify students' productivity, likely resulting in the creation of more new goods, services, and scientific discoveries. Increasing students' productivity and thereby creating

¹⁸ Allen Buchanan considers the network effect of enhancements, both genetic and chemical, as being not only a fundamental reason for enhancing but also developing an ethics of enhancement (Buchanan 2008).

more goods, services, and scientific discoveries will result in benefits for the students, the university, and the general population in the long term.¹⁹ By using cognitive enhancers, students' productivity will increase so that they can handle their academic workload efficiently and take more classes, which is beneficial because education is good for human well-being. The university stands to benefit from the prestige and grants brought in from scientific discoveries made by students. Everyone outside of academia stands to benefit from the new goods and services that result from students' productivity.

The analogy for cognitive enhancers and benefits is that of vaccination and herd immunity. Just as a herd's immunity increases when most of its members are vaccinated, it seems just as likely that the benefits for everyone will increase with students' use of cognitive enhancers.²⁰ Thus, for those who think that a student who uses cognitive enhancers is not cheating, cognitive enhancers are merely a progressive educational tool that will likely end in benefits for everyone in the long term.

The strength of this argument is in the sensibleness of two of its claims. First, it seems plausible that cognitive enhancers really are progressive educational tools that allow students to maximize their intellectual capacities. Although initially prohibited, calculators and computers provide sheer computational power allowing students to maximize their intellectual capacities. Similarly, if we allow a student's specific capacities of focus and concentration to operate at higher functioning levels, then it seems more likely that a student will be able to maximize their intellectual capacities.

¹⁹ Allen Buchanan, Dan W. Brock, Norman Daniels, Daniel Wikler, and Maxwell J. Mehlman have argued that the potentiality for benefiting everyone's utility is a relevant consideration when discussing enhancement (Buchanan, et. al 2000; Buchanan 2008; Buchanan 2011; Mehlman, 2004).

²⁰ Allen Buchanan also uses this analogy but in respect to the dangers of foregoing enhancement (Buchanan, 2008).

Second, the claim that through more students maximizing their intellectual capacities, there are greater chances of students creating new goods, services, and scientific discoveries also seems sensible. Allowing the use of cognitive enhancers also seems likely to increase the goods, services, and scientific discoveries well into a student's post-academia career (Sandberg and Savulescu 2011). Thus the use of cognitive enhancers is not cheating and one should not create rules prohibiting their use in academia.

Yet there are challenges to this argument. First, it follows an implicit form of argumentation that Erik Parens refers to as an *argument from precedence*:

We've always used means A to achieve end A; means B also aims to achieve end A; therefore means B is morally unproblematic. For example, we've always increased the teacher/child ratio and reduced classroom size (means A) to enhance student performance (end A); Ritalin (means B) also aims to achieve enhanced student performance (end A); therefore using Ritalin is morally unproblematic. (Parens 1998)

The trouble with having the form of the argument from precedence is that the emphasis is on achieving a certain end, overlooking the fact that means to an end do matter. As Dan Brock points out,

In many valued human activities, the means of acquiring the capacities required for the activity are part of the very definition of the activity and transforming them transforms and can devalue the activity itself. (Brock 1998, 58)

It is true that arguing that a reduced classroom size enhances student performance provides precedence for Ritalin, which also enhances student performance. However, there are many means for achieving an end that one would find unacceptable—even if these means did actually achieve a certain end. Threatening to physically harm your child is one method to motivate a child into studying, which likely would augment your child's

academic performance.²¹ But threatening to harm your child to enhance academic performance devalues the activity of education. Thus, while the argument from precedence is not a direct criticism of the use of cognitive enhancers in academia, it does suggest a need for further examination of the ends this position seeks to achieve. The question is whether the argument given by those who think that students who use cognitive enhancers are not cheating devalues the goal of academia.

The challenge is that the argument devalues the goal of academia as much as it holds a myopic conception of academia. Although it is true that there are many academic activities and disciplines in academia that directly facilitate the creation of better goods, services, and scientific discoveries, we should note that not all academic activities and disciplines do so. As a whole, academia is intended to expose students to a multiplicity of areas (e.g., the sciences, arts, and humanities), while this argument seems to view academia in instrumental terms. There is nothing wrong with viewing academia in instrumental terms, but doing so does not accurately represent all the reasons we value it. We value academia not only because a student versed in the arts and humanities as well as the sciences is socially valuable but also because being versed in these activities and disciplines is often a good thing for human well-being. Put otherwise, the value of education is often for its own sake. Academia is thought to make a person better even if it does not result in new goods, services, or scientific discoveries. While this argument explains an important aspect of academia, that students who use cognitive enhancers may improve, it still does not capture many of the reasons for valuing academia. To argue that

²¹ I say unnecessary because *fear can be a good motivator*. Yet there is a difference between an appropriate use of fear as a motivator, such as a parent telling a child, “if you don’t do well in this semester’s grades, I’ll reduce your allowance,” from an inappropriate use of fear as a motivator, such as a parent telling a child, “if you don’t do well, I’m going to hit you.”

students who use cognitive enhancers are not cheating because they potentially produce more goods, services, or scientific discoveries does not account for why we value academia.

Another related challenge that is likely to arise from holding a myopic conception of academia concerns the implications of future technological advancements. If the value of academia is taken solely to be for the creation of better goods, services, and scientific discoveries, then it is reasonable that technological advances such as “uploading” academic information directly into a student’s brain can also be taken as a progressive educational tool. Simply uploading directly into a student’s brain may result in students producing better goods, services, and scientific discoveries, but this goes against the idea that academia is as much a process of development as it is an achievement. This myopic conception of academia in the argument that a student who uses cognitive enhancers is not cheating likely will lead to challenges from certain potential technological advancements.

So far, the two positions’ arguments answering the question of cheating have been reconstructed and their challenges presented. Challenges have been raised for each position, but neither argument has been refuted. Nonetheless, these challenges indicate that neither position provides conclusive reasons as to whether the use of cognitive enhancers is cheating; as a result, they do not advance the discussion of enhancement in academia.

While these two positions do not advance the discussion, they do demonstrate the importance of relying either on the considerations of rules (e.g., rules prohibiting cheating actions) or consequences (e.g., the use of cognitive enhancers results in benefits

for everyone), or a combination of the two, to evaluate a student's use of cognitive enhancers. Any approach for determining the permissibility of cognitive enhancers needs to consider rules. In addition to rules, an approach must be sensitive to the consequences of students using cognitive enhancers. That the use of cognitive enhancers provides benefits for everyone or alternatively harms students by exposing them to dangerous side effects are substantial reasons in assessing their permissibility.

Although rules and consequences are two important considerations, there is another consideration that can assist in the evaluation of a student's action: motivation, or the reason(s) a student has for using a cognitive enhancer.²² The reasons why a person acted in a particular way often provide clarity and assist in the evaluation of their action.

Consider rules that prohibit stealing and the bad consequences of theft. If a person is caught stealing food from the cafeteria, the initial assessment is that the student's action was wrong. But if it turns out that the person's motivation for stealing food was because she could not afford any food, then it seems her motivation is an important consideration in the evaluation of her action.

Even if minimally, motivation also provides clarity and assists in evaluating a person. Imagine that Bogart sends flowers to his girlfriend Izzy once a month. One can evaluate Bogart's action in respect to rules (one has a duty to make one's partner happy), consequences (the relationship usually is better after a partner sends or receives flowers), or both. Yet Bogart's motivation for sending flowers can provide clarity and assist in our assessment of him. If his motivation in sending flowers is love, one would hold a high evaluation of him; however, if Bogart's motivation in sending flowers is out of the guilt

²² My account of motivation, as reason or reasons for acting, remains neutral on motivations, reasons, and the internalism and externalism debate.

he feels from his monthly infidelity, our evaluation of him would not be so nice. A person's motivation is significant person because an individual's reason for acting does change the assessment of them. As illustrated by Kant's remarks on good will, motivations matter: "It is impossible to conceive of anything at all in the world, or even out of it which can be taken as good without qualification, except a good will" (4:393).

Motivation provides clarity and assists not only in the evaluation of a person but in an evaluation of that *person's character*.²³ Compositionally, a person possesses many differing properties and qualities, but a person's character refers to the combination of all of these properties and qualities in that individual (Homiak 2011). An assessment of a person's character is not in regard to moral worth but rather an assessment of the kind of person he or she is. As it is a combination and embodiment of all of these properties and qualities, an individual's character is something that is built up and expressed over time through choices and actions.

It is difficult to distinguish motivation from character clearly; however, an individual's reason for acting is often as reflective of their character. Moreover, that an individual acts for certain motivations rather than for other reasons also is indicative of their character. Consider that if Bogart's monthly motivation for sending flowers to Izzy is for reasons of love, then these motivations are reflective of Bogart having good character and being the kind of person one admires. Alternatively, if his motivations for sending flowers are reasons of guilt over his monthly infidelity, then these motivations are reflective of Bogart having bad character and being the kind of person one despises.

²³ This sense of character I interchangeably refer to as a person's character, character of a person, or simply character.

Whether in the evaluation of actions, people, or character, motivation is a significant consideration.

In respect to students and cognitive enhancers, motivation is a consideration that impacts the evaluation of students using these enhancements. To illustrate, let's re-examine Oliver and Edith's cases. Oliver's motivation for using cognitive enhancers is to make up an assignment because of improper study habits. Typically, this is not a good reason and does not reflect well on Oliver's character. Even if the use of cognitive enhancers in academia is wrong based on an all-things-considered judgment, one can still hold that Oliver's motivations reflect poorly on his character.

Now contrast Oliver's motivation with Edith's motivation: Edith uses the cognitive enhancer so she can devote all of her spare time to learning philosophy. Generally speaking, one would consider this a good reason, an indicator that Edith has good character. Again, even if the use of cognitive enhancers in academia is wrong based on an all-things-considered judgment, one can still hold that Edith's motivation reflects a good attitude and character. Motivations are a significant consideration because they differentiate Edith's use of cognitive enhancers from Oliver's, and even if Edith's motivation may not justify her use of cognitive enhancers, they do indicate that she has good character, even if minimally. Any approach attempting to advance the discussion of enhancement in academia must account not only for considerations of rules and consequences but also for motivations.

That academia's current institutional rules do not decisively determine the permissibility of student use of cognitive enhancers and that arguments about whether the use of cognitive enhancers is cheating are inconclusive prevent the discussion of

enhancement in academia from advancing. That the discussion has not advanced beyond the question of cheating is a reason why there are few systematic approaches that provide a framework to elucidate permissibility and stipulate what academia's institutional rules should be for governing student use of cognitive enhancers. In addition, any approach attempting to advance issues of enhancement in academia faces the task of appropriately balancing the value of academia and enhancement with the considerations of rules, consequences, and motivations.

In the following chapter, I offer an approach for advancing the discussion of enhancement in academia that provides a framework for elucidating student use of cognitive enhancers and stipulates institutional rules for governing these enhancements in academia. This approach towards enhancement in academia is from the perspective of the ideals of human excellence or virtues. This virtues-based approach contends that one kind of student to want in academia is the virtuous student or, at minimum, one possessing certain virtues. A virtuous student may choose to use cognitive enhancers for reasons of self-improvement, and that cognitive enhancers is permissible under certain conditions.

Chapter 3 Ideals of Human Excellence

To begin, put aside—for the moment—issues pertaining to enhancement in academia, permissibility, and institutional rules.²⁴ Instead, begin by asking, “What kinds of students do we want in our academic institutions?” One plausible answer concerns the ideals of human excellence or virtues. One kind of student we want in our academic institutions is a student who is virtuous or, at least minimally, possesses certain virtues. In the following paragraphs, I offer an account of virtue that serves as an outline for which my account of virtuous students fills in the details.²⁵

Conceptually, virtues are the properties of a person that make their possessor an ideal of human excellence (Aristotle 1984; R. M. Adams 2006; J. D. Wallace 1978; Tzun 1963; Zagzebski 1999). Broadly speaking, these virtues are character traits, emotional tendencies, or dispositions to think, feel, and act in certain ways. The motivational structures (character traits or emotional tendencies) are stable and enduring, and the dispositions (thoughts, feeling, and actions) are regular and reliable.²⁶ A virtue requires a strong connection between a person’s motivational structures and dispositions. A person with the virtue of compassion has a character trait to comfort those in need and is successful in providing such comfort. This person *consistently* thinks, feels, and acts in ways to comfort other people; a single compassionate action does not mean a person has

²⁴ Elements of this chapter were published as “Ideals of Student Excellence and Enhancement” in *Neuroethics* (Enck 2012).

²⁵ My account shares and draws upon many common features in an Aristotelian conception of virtue. Yet strictly speaking my account is not an Aristotelian conception of virtue, as evident in the reliance on Confucian and Buddhist conceptions of virtues later in the chapter.

²⁶ I use the terms *motivational structures*, *character traits*, and *emotional tendencies* interchangeably. The reason for the varying use is that while all refer to a conception of stable and enduring properties of persons, in some cases one term better fits the context in which I am describing a virtue. For example, in a broad overview, motivational structure often works best, whereas in a situational context character trait or emotional tendency is more apt.

the virtue of compassion. Although one may have several reasons for consistently acting compassionately, to have the virtue of compassion requires that at least one of the reasons for acting compassionately is to provide sympathy or alleviate suffering. One cannot attribute the virtue of compassion to someone who does not reliably think, feel, and act to provide comfort or to someone who lacks the sufficient motivation of sympathy (or of alleviation of suffering) for their actions.

The connection between motivational structures and dispositions in virtues necessitates that the exercise of virtue is through practical reasoning: the process of reasoning involved with deliberating upon and then undertaking certain acts (Annas 2006; J. R. Wallace 2009). A virtuous person, or one possessing certain virtues, has attained *practical wisdom*. As I use it, practical wisdom is the ability to consider the relevant information presented in a given situation and then to exercise discretionary judgment to act accordingly in that situation. The Confucian philosopher Xunzi characterizes a virtuous person's [or *gentleman* or *sage* in his terms] practical wisdom in a similar way.

[H]e cannot be subverted by power or the love of profit; he cannot be swayed by the masses; he cannot be moved by the world. He follows this one thing in life; he follows it in death. This is what is called constancy of virtue. He who is such constancy of virtue can order himself, and having ordered himself, he can then respond to others. He can order himself and respond to others—this is what is called the complete man. It is the characteristic of heaven to manifest brightness, of earth to manifest breadth, and of the gentlemen to value completeness. (Tzun, Encouraging Learning 1963, 23)

A virtuous person has practical wisdom for acting accordingly in a given situation and, possessing a strong connection between motivational structures and dispositions, does so for the right reason. That a virtuous person acts accordingly for the right reasons is a

reflection on their character. It is a virtuous person's actions that are reflective of excellence. As Aristotle notes, "we must next discuss choice; for it is thought to be most closely bound up with excellence and to discriminate characters than actions do," but it is this excellence of character that is of most importance (NE 3.2 1111^{b5-6}).

One reason to want virtuous students in academia is that it is of great importance in our lives that a person's actions and motivations are strongly and appropriately connected. We place great value on having good character. When raising children, parents not only want them to think, act, and feel in certain ways but, importantly, to do so for the right reasons as a matter of character. This isn't surprising since we value (and want) physicians and soldiers to think, act, and feel in ways strongly connected to compassion or honor. One would want students in academia whose character is such that they think, act, and feel in certain ways for the right reasons.

Consider the cases of Vincent and Mark, two students in a course on Buddhism. Vincent wants to understand Buddhism's tenets of *Four Noble Truths* and *anattā* (the concept of no-self) because these tenets challenge Vincent's belief system. For Vincent, learning about a multiplicity of viewpoints provides a wider and deeper range of options for assessing his own life. Mark also wants to understand Buddhism's tenets of *Four Noble Truths* and *anattā* but not because these views challenge his belief system or because they permit a wider and deeper range of options for self-assessment. Instead, Mark simply to pass the course with a good grade. In this case, although we would typically regard both Vincent and Mark's dispositions as being permissible, one prefers a student with Vincent's motivation because the desire to understand a challenging belief system is indicative of character. Therefore, when considering the kind of student we

want in academia, the motivations students have for their academic projects connote their character. Our belief in the importance of character is a reason for wanting students in academia to be virtuous or to possess certain virtues.

One might object and argue that although he lacks a good motivation for his dispositions, indicating a poor attitude and character, Mark is not doing anything impermissible. This certainly is true, but a student who lacks the proper motivation is not the kind of student we want in academia. One wants students to think, act, and feel in certain ways and to have good reasons for doing so. Given a choice about the kind of students preferred in academia, it seems plausible that we want students who are virtuous or, at least minimally, possess certain virtues.

3.1 Virtues of Students

With respect to virtuous students, at a minimum one would want these students to possess the virtues of *seeking understanding* and *seeking accurate beliefs*. Seeking understanding is a structuring virtue: a character trait that organizes and configures one's activities (Adams 2006). In seeking understanding, a student has the motivational structure to organize and configure his dispositions to seek greater comprehension of the human experience. This virtue motivates a student to structure activities so that he can draw upon and make connections about accurate beliefs between diverse academic domains and disciplines. One of the goals of academia is to expose students to the various disciplines in the sciences, arts, and humanities to develop their intellectual capacities, so students with this virtue can draw upon and make connections between many diverse disciplines.

It is reasonable to want students to possess this character trait. Considering the goals of academia and, more broadly, the kind of creatures humans are—social animals possessing advanced cognitive capacities—seeking understanding is an ideal of human excellence. Assume that Edith has this virtue and is also taking the course in Buddhism. She is motivated to comprehend Buddhism and has the dispositions to connect Buddhism’s conception of loving-kindness to her own and other’s experiences in life. As a matter of character, Edith’s character trait is not only that of an ideal student but is also an ideal of human excellence.

A second virtue is that of seeking accurate beliefs, beliefs that correctly represent/depict the world/reality. A student with this virtue has the character trait to pursue accurate beliefs actively. Seeking accurate beliefs usually is considered a good thing: scientists, police detectives, physicists, and historians are nearly universally commended for seeking accurate beliefs. So it seems quite natural to think that one would also want students, as a matter of character, to seek accurate beliefs because they are not only a mark of excellence in thought but also conducive to the goals of academia.

Still, one may object that seeking accurate beliefs is not of such significance to be considered an ideal of human excellence: a person who reads an entire phonebook or counts every blade of grass in their yard is seeking beliefs that correctly represent/depict the world/reality. Yet one is hesitant to claim that this person’s practice of seeking accurate beliefs is a display of human excellence.

However, this objection overlooks two important considerations. First, although reading phonebooks or counting blades of grass are instances of seeking accurate beliefs, they do not seem to be related to an ideal of human excellence. By examining each

instance's aims or ends, we easily distinguish instances of seeking accurate beliefs to achieve human excellence from ones that do not. The aim or end of an instance of seeking accurate beliefs is directed or guided by the particular domain it resides in. In the cases of students possessing this virtue, the aims or ends of seeking accurate beliefs are directed by academia. That we value education for its own sake—because it makes a student better even if it doesn't result in new goods, services, or scientific discoveries—suggests that there are some instances of seeking accurate beliefs that academia would exclude. An individual may value reading phonebooks or counting blades of grass, but it is not clear that the information and facts gleaned from these instances of seeking accurate beliefs are something academia would value. In respect to the goal of academia, reading phonebooks and counting blades of grass are not the kinds of activities promoted in academia because it is not clear that they provide instrumental benefits, are good to a student's well-being, or are something to be valued for their own sake.

The second consideration that this objection overlooks is that in academia there is a value in *getting things right*, that a person having accurate beliefs is both instrumentally beneficial for helping people navigate the world and valuable as accurate beliefs for their own sake.

To explicate, I need to make a quick illustrative detour. In the United States, there is an ongoing argument concerning the teaching of evolution as part of the high school science curriculum. Some citizens want creationism to be included and taught alongside evolution in high school science.²⁷ There are many reasons for being against the inclusion of creationism in a high school science class, but one reason it is problematic is because it

²⁷ One might argue that “intelligent design” is not creationism. The burden for this argument is in showing how claiming a divine force intelligently designed or guided our evolution differs from arguing that a deity created the universe. Intelligent design is simply creationism by another name.

is an inaccurate belief. In a rough and broad sense, creationism does not provide students with accurate beliefs about the world they inhabit. One need not object to creationism's religious overtones, only to the inaccuracy of creationism's belief system. Consider that our intuitions about inaccuracy would be the same if instead of creationism, there was a moment to teach a theory of phlogiston or a "paleo-contact" theory of human development in our high school science curriculum.^{28 29} Our intuitions indicate that we value persons having accurate beliefs as being instrumentally beneficial for their own sakes. Therefore, returning to the question of whether seeking accurate beliefs is a virtue, if one thinks that it is good for persons to have accurate beliefs, then it is reasonable also to think that it is good, as a matter of character, for a student actively to seek out accurate beliefs in their lives.

I should note that this is not to claim that all of a person's beliefs need to be accurate or that holding an inaccurate belief is always bad—self-deception often has its benefits ("this is a good dissertation")—but in respect to getting things right, we value seeking accurate beliefs for its own sake.

That we value seeking accurate beliefs as a virtue for students relates to the goal of academia. Students are to be exposed to different and varying disciplines in the sciences, arts, and humanities to facilitate their development of intellectual capacities. The information provided to them from the sciences, arts, and humanities progressively gets more challenging and in-depth. A student with the virtue of seeking accurate beliefs is likely to participate actively in her education. The student with this virtue is also going to

²⁸ Thomas Kuhn uses the theory of phlogiston and its eventual replacement by oxygen as a central example in *The Structure of Scientific Revolutions* (Kuhn 1970).

²⁹ The "paleo-contact" theory of human development, also known as "Ancient Aliens," was popularized by Erich von Däniken in the book *Chariots of the Gods?* but has long since been discredited by science (Schick and Vaughn, 2011).

be diligent in assessing the accuracy of her beliefs while seeking to find more accurate beliefs. So one wants students in academia to possess this virtue.

Therefore, if one kind of student we want in academia is a student who is virtuous, then it is reasonable that these virtuous students, at a minimum, possess the virtues of seeking understanding and accurate beliefs.

3.2 Virtuous Students and Enhancement

Returning to the issue of student use of cognitive enhancers, one can ask whether a virtuous student would use cognitive enhancers or not.³⁰ I argue that for reasons of self-improvement, a virtuous student may choose to use cognitive enhancers. In considering whether to do so, a virtuous student, having practical wisdom, would properly account for the relevant information and considerations in a given situation. In a given situation, there might be relevant considerations pertaining to rules in academia (were these cognitive enhancers obtained legally or not?), consequences of using these psychotropic pharmaceuticals (health benefits versus risks), and motivations. It seems likely that in many situations, a virtuous student may choose to use cognitive enhancers for self-improvement.

In general, the augmentation of one's capacities of focus and concentration to higher functioning levels is an improvement. Typically, enhancements result in 10 to 20 percent improvement in a given task (Sandberg 2011, 79). For virtuous students, this 10 to 20 percent improvement is significant because with their capacities of focus and concentration operating at higher functioning levels, these students could more efficiently and effectively work on academic activities. By focusing and concentrating for greater

³⁰ For brevity, I will use the term virtuous student to refer to "virtuous students or, at least minimally, students possessing certain virtues of seeking understanding and accurate beliefs" when possible.

periods of time and by efficiently and effectively working on their academic activities (arts, sciences, and humanities), a virtuous student would be able to seek understanding and further pursue beliefs that accurately represent reality. That an enhanced virtuous student is seeking understanding and accurate beliefs could (possibly) lead to new scientific discoveries and the creation of better goods and services. More importantly, even if they do not result in new scientific discoveries and the creation of better goods and services, an enhanced virtuous student seeking understanding and accurate beliefs is better for his own well-being. Thus for these reasons of self-improvement, a virtuous student may choose to use cognitive enhancers.

Consider Edith, a virtuous student. Edith wants to take as many classes as possible on a wide variety of topics. Her course workload is large, and she also has a part-time job. Edith wants to make the most of her academic career, and for these reasons of self-improvement she uses cognitive enhancers. These cognitive enhancers improve her capacities of focus and concentration to higher functioning levels, resulting in her being able to work efficiently and effectively through her course workload. This is important because her part-time job limits the amount of time she is able to study. The use of cognitive enhancers also allows Edith to pursue, improve, and develop her overall intellectual capacities, further allowing her to appreciate and connect with her own and other's life experiences. So Edith may choose to use cognitive enhancers in academia for reasons of self-improvement.

I contend that one kind of student we want in academia is a virtuous students or, at least minimally, one possessing the virtues of seeking understanding and accurate beliefs, and that this type of student may choose to use cognitive enhancers for reasons of self-

improvement. This account of the virtuous student and cognitive enhancers has three advantages. First, the issue of enhancement is conceived in respect to the kind of students we want in academia. Second, the virtuous student's use of cognitive enhancers is for reasons of self-improvement, which is consistent with both common-sense intuitions concerning education and differing normative theories on the importance of intellectual development. Third, this account of the virtuous student and cognitive enhancers is consistent with considering advancements in cognitive enhancement as having the potential to impact the world profoundly.

The first advantage of my account of the virtuous student and cognitive enhancers is that it conceives of the issue of enhancement in regard to the kind of students we want in academia by connecting the proper use of enhancements to the student's motivation. The kind of student we want in academia is one who, as a matter of character, acts for the right reasons, and this extends to the use of enhancements. The virtuous student is not using these cognitive enhancers solely to amplify productivity in academic activities. While a student using cognitive enhancers for reasons of amplifying productivity would likely result in the creation of more new goods, services, and scientific discoveries, we don't value students going through academia solely for the commercial benefits that may be produced from academic activities. Exposing students to the arts, sciences, and humanities is good for its own sake regardless of whether doing so leads to the creation or bettering of goods, services, or scientific discoveries. That a virtuous student's use of cognitive enhancement is for reasons of self-improvement—to seek understanding and accurate beliefs—is consistent with our argument that academia is valuable for its own sake. By connecting the use of enhancements with motivations, this account of the

virtuous student and cognitive enhancers approaches issues of enhancement in academia from the perspective of the kind of student we want in academia.

The second advantage of this account of virtuous students and cognitive enhancers is that it is consistent with our common-sense intuitions concerning education as well as with differing normative theories that hold that the improvement or development of intellectual capacities is of significant value. Consider that in the United States, citizens are all legally required to undergo a minimal level of some form of education because of the value we place on developing intellectual capacities. Beyond this minimal level of education, it is common to praise and facilitate those who continue to improve or develop their intellectual capacities. Persons are praised for going back to school to finish a degree, for participating in intellectual events or conferences, or for attending a book club meeting. Moreover, public libraries and educational opportunities are provided and subsidized by communities to facilitate the improvement or development of citizens' intellectual capacities, showing that this is a prominent and shared value of community members.

The importance of intellectual self-improvement or the development of intellect is a shared point among normative theories. Many differing normative theories contend that a person does have an imperfect duty to improve or develop intellectual capacities. In the *Metaphysics of Morals*, Kant argues that a person has an imperfect duty for the improvement or development of one's "natural powers" of reason, logic, memory, or imagination; certain consequentialist theories such as welfarist accounts of consequentialism could be construed as arguing such an imperfect duty (Kahane and Savulescu 2009; Crisp 2006; 6:445; 6:390). Although Kant and consequentialist theories

differ in their conceptions of imperfect duties (for consequentialists there is wide latitude of situations and actions for a person to fulfill this duty, whereas for Kant—at least in the *Metaphysics of Morals*—a wide and imperfect duty for intellectual development is not morally required but is meritorious), there is agreement that improving or developing one’s intellectual capacities is a good thing to do.³¹ Therefore, an advantage of my argument that a virtuous person may choose to use cognitive enhancers for reasons of self-improvement of intellectual capacities is that it is consistent with common-sense intuitions and differing normative theories.

Finally, this account of the virtuous student and cognitive enhancers is consistent with the view that advancements in cognitive enhancement have the potential to impact the world profoundly. An indication of the magnitude of this impact is the amount of funding the United States military provides for studying and researching advancements in the neuroscience of cognitive enhancement. At first it might seem odd to consider U.S. military funding as an indication of the potential that advances in cognitive enhancement could have. However, considering that military funding has played a central, often substantial, role in many if not all of our technological advances in the last 100 years (space exploration, aviation, medicine, computer science, and the Internet), this connection is clearly founded (Jacobsen 2011). In 2011, the military’s Defense Advanced Research Projects Agency (commonly referred to as DARPA) spent \$240 million on neuroscience research for cognitive enhancement (much of it likely going to their “Continuous Assisted Performance” program), while the U.S. Army spent \$55 million, the Navy \$34 million, and the Air Force \$24 million on similar studies and

³¹ The preceding account of imperfect and perfect duties draws upon both Michael Stocker and Thomas Hill, Jr.’s work on of Mill and Kant’s conceptions of perfect and imperfect duties in the *Metaphysics of Morals* (Stocker 1967; Hill Forthcoming).

research programs for cognitive enhancement (Moreno 2004) (Tennison and Moreno 2012).

In *Human Enhancement*, Nick Bostrom and Julian Savulescu provide a quote from a 2008 U.S. military proposal that summarizes the potential the military sees in cognitive enhancement:

The world contains approximately 4.2 billion people over the age of twenty. Even a small enhancement of cognitive capacities in these individuals would probably have an impact on the world economy rivaling that of the Internet. (Savulescu and Bostrom 2011, 20)

Whether advances in cognitive enhancement come to the level of fruition that the US military predicts is an open question. Yet from the amount of funding the military spends annually, it is reasonable to think that advances in cognitive enhancement have the potential to impact the world profoundly. This account of the virtuous student and cognitive enhancers is consistent with such a view and, importantly, provides a framework linking this potential to the kind of character we want students in academia to possess.

3.3 Cognitive Enhancers Cheapen the Experience of Academia

An objection against this account of virtuous students and their use of cognitive enhancers for self-improvement is that the use of cognitive enhancers cheapens the experience of academia. Because cognitive enhancers allow a student's intellectual capacities to function at higher levels, these students—even if virtuous—are bypassing or “shortcutting” the academic workload, thus cheapening a student's experience of academia (President's Council On Bioethics 2003; Sandel 2007). An analogy to this is a mountain climber who reaches a difficult summit but instead of climbing, he or she

reaches the summit by helicopter.³² The mountain climber does reach the summit (a goal of mountain climbing), but by using a helicopter, the climber cheapens his or her experience of reaching the summit. The use of a helicopter disconnects the climber from the experience of reaching the summit: the climber didn't overcome great odds, work diligently, and experience the highs (and lows) of mountain climbing. Similarly, a student using cognitive enhancers cheapens the experience of academia because he or she bypasses the highs and lows of an academic workload because their intellectual capacities function at higher levels. A student who does not experience the low of grappling with a difficult subject or the high of completing an assignment on a difficult subject cheapens his or her experience of academia. Thus, for this objection it need not matter that the student is virtuous, only that he or she is missing the important, material experiences of academia.

However, this objection is misguided because it rests on the presupposition that using cognitive enhancers directly augments a person's cognition. Cognition is the complex interaction between a multiplicity of mental functions and neurological processes. In respect to overall cognition, the use of cognitive enhancers—by affecting neurotransmitters in the cortical and sub-cortical systems—augments the capacities of focus and concentration (Smith and Farah 2011; O'Reilly 2010). Yet cognitive enhancers do not bypass or “shortcut” the workload or the experience of academia. A student using cognitive enhancers still has to do the same amount of academic work, but in augmenting

³² Maartje Schermer doesn't think that this analogy works as an argument against cognitive enhancers, but uses this example for the purposes of illustrating how cognitive enhancers could (possibly) be considered as cheapening a person's pursuit, achievement, or experience of an academic ideal. The President's Council on Bioethics has presented similar arguments about enhancements, although not construed in terms of “cheapening experience” but rather in respect to the authenticity of a person's decisions. Specifically the issue is whether the use of Prozac as an enhancement could negatively infringe on the authenticity of a person's decisions (Schermer 2008a; President's Council On Bioethics 2003).

his or her capacities of focus and concentration, they are simply using these capacities more efficiently and effectively.

Achievement in academia ultimately rests upon the student. Whether using cognitive enhancers or not, a student still has to make a decision actually to do the work. It is true that cognitive enhancers do directly affect a student in ways that a laptop or quiet apartments do not, yet the decision to do the academic work is the antecedent condition for academic success. Simply using cognitive enhancers or any enhancement does not guarantee academic success (e.g., just as one can have the fastest, most advanced laptop but use it primarily for watching TV, one can also use cognitive enhancers not to study but as an energy boost for playing video games or late night socializing). A student who uses cognitive enhancers must still make the decision to work; thus, this student will still have to work through an academic workload, experiencing certain highs and lows, and thus have a full—not cheapened—experience of academia. Furthermore, that the student is virtuous means that their reasons for using cognitive enhancers are not as an attempt to bypass or shortcut the academic experience but for reasons of self-improvement.

3.4 Permissibility

I have argued rather broadly that virtuous students may choose to use cognitive enhancers for reasons of self-improvement. This section returns to the question of permissibility. If a virtuous student, or one possessing the virtues of seeking understanding and accurate beliefs, chooses to use cognitive enhancers, does that make the use of cognitive enhancers in academia permissible? I think that in fact it does make the use cognitive enhancers permissible.

Before explicating this claim, its negative aspects need to be clarified. This claim is not that a virtuous student would always choose to use cognitive enhancers, but that the situations and reasons a virtuous student would consider to justify the use of cognitive enhancers are rather limited. In academia, a virtuous student has the practical wisdom to judge the situations and the reasons for when to use or not use cognitive enhancers. There are many rules, consequences, and motivations that a virtuous student would judge as reasons against using cognitive enhancers.

Imagine that Edith is preparing to write her final paper for the Wittgenstein course. There are many rules, consequences, and motivations that Edith would judge as reasons against using cognitive enhancers. She may choose not to use cognitive enhancers if these enhancements were illegally obtained from acquaintances, family members, other students, or an Internet order. The potential harmful side effects, the withdrawal symptoms, and the lack of long-term, empirical medical evidence concerning the health risks might be reasons Edith chooses not to use cognitive enhancers. Alternatively, it could turn out that the use of cognitive enhancers is likely to result in little or no enhancement for her. Finally, Edith may choose not to use cognitive enhancers if she lacks good motivations for using them. As a virtuous student, Edith would not think of using cognitive enhancers to rectify irresponsible study habits, to competitively beat other students like Oliver and Teresa, or to overcome the ennui of academic activity. Since these students have traits that make them an ideal of human excellence, they find it imperative to possess a sufficiently good reason for using cognitive enhancers.

In her consideration of her motivation, Edith, who has practical wisdom, accurately accounts for her strengths and weaknesses when deciding on an action. She acts

accordingly in situations because she has properly assessed her abilities as a consideration. In *The Art of War*, Sun Tzu states the importance of understanding not only your own but also your enemy's strengths and weakness before acting:

Know the enemy and know yourself; in a hundred battles you will never be in peril. When you are ignorant of the enemy but know yourself, your chances of winning or losing are equal. If ignorant both of your enemy and of yourself, you are certain in every battle to be in peril. If you know yourself but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle. (Tzu 1963, 84)

One need not engage in war or battle to understand that many situations end poorly because people often inaccurately account for their strengths and weaknesses as considerations when acting. This inaccurate accounting is a distinctive feature of practical reasoning gone astray and a common reason for poor performance in an academic activity. Students often fail courses because they overestimate their skill sets or, more likely, do not recognize that some of their skill sets such as arithmetic, reading comprehension, or writing are weak.

However, a virtuous student does recognize that she possesses weaknesses as well as strengths. By identifying and acknowledging weaknesses, the virtuous student can properly account for them as a consideration and act accordingly. For example, Edith may realize that while taking cognitive enhancers will augment her capacities of focus and concentration, this augmentation will not improve her writing skills. Thus Edith does not take a cognitive enhancer while writing her final paper because she has accurately accounted for her strengths and weaknesses and realized that what she needs is help to develop her writing skills, not an augmentation of her capacities of focus and concentration.

Related to accurately accounting for one's strengths and weaknesses is the consideration of self-acceptance. By acceptance of the self, I mean that a person has come to an understanding and acceptance of their ability; it is an acknowledgment and recognition of one's abilities and character. In a selection from the *Tao Te Ching*, the Confucian philosopher Lao Tzu describes this kind of self-acceptance.

Fame or integrity: which is more important? Money or happiness: which is more valuable? Success or failure: which is more destructive? If you look to others for fulfillment, you will never truly be fulfilled. If your happiness depends on money, you will never be happy with yourself. Be content with what you have; rejoice in the way things are. When you realize there is nothing lacking, the whole world belongs to you. (Tsu 1988, 44)

A person with self-acceptance navigates through the circumstances and situations of life but is content with who they are as a person. In other words, he is not tempted by success, a moment, or even enhancement to act out of character. A virtuous student, in having practical wisdom, possesses self-acceptance.

Self-acceptance is important because even virtuous students may find themselves in circumstances in which performing well at an academic activity would seem to require that they act in ways that reflect poorly on their character. Imagine that Edith, being virtuous and possessing self-acceptance, is struggling through a statistics course. In a short time period, she has to finish a difficult final project. In addition, this final project is weighted such that the faster she turns in her project, the more points she will receive. Edith has two options: (i) she can take a cognitive enhancer and augment her capacities of focus and concentration so that it is possible to work through all the algorithms to finish her final project as fast as possible, ensuring a higher grade; or (ii) she does not take a cognitive enhancer and attempts to work through and understand the material, meaning it will take longer to finish and, as a result, lower her grade.

In this example, the circumstance that Edith does not excel in this activity does not mean that she will act inappropriately. A virtuous student is not always an “A student” or excellent at every academic activity, but their actions always are indicative of good character. A remark attributed to the great martial artist Rickson Gracie summarizes this point: “Sometimes, you don’t have to win. You cannot win. But that has nothing to do with losing.”

What is important about virtuous students and self-acceptance is that it allows for a virtuous student always to act in a manner that reflects excellence of character. In this case, if Edith has self-acceptance, then she chooses not to take a cognitive enhancer, which results in a lower grade but allows her to learn the material. Edith’s decision not to use a cognitive enhancer is one that reflects admirably on her character. In particular, her action is illustrative of the kind of character one wants a student in academia to possess.

Aristotle notes:

If activities are, as we said, what determines the character of life, no blessed [virtuous] man can become miserable; for he will never do the acts that are hateful and mean. For the man who is truly good and wise, we think, bears all the chances of life and becomingly and always makes the best of circumstances, as a good general makes the best military use of the army at his command and a shoemaker makes the best shoes out of hides that are given to him; and so with all other craftsman. And if this is the case, the happy man can never be miserable —though he will not reach blessedness, if he meet with fortunes like those of Priam. (NE 1.10 1101^{b33} - 1101^{a71})

In academia, one would prefer a student with lower academic achievement but good character to a student with poor character but good academic achievement. That a virtuous student has self-acceptance allows them to understand that what is of most importance is not merely doing well on an exam or achieving a certain grade but striving to learn in a way consistent with possessing good character.

Since the situations in and reasons for which a virtuous student would choose to use cognitive enhancers are rather limited, my argument is not that a virtuous student always chooses enhancement. Nevertheless, because a virtuous student chooses to use cognitive enhancers after assessing the relevant information and considerations in a situation and for reasons of self-improvement, then the use of cognitive enhancers is permissible under certain conditions in academia. This permissibility rests upon the central tenet of my virtuous student account: the connection between motivational structures and dispositions necessitates that a virtuous student has a sufficiently appropriate reason for acting. One would not be troubled (or at least be troubled less) by a virtuous student's use of cognitive enhancers because, generally speaking, they have good reasons for using these enhancements. Thus, the permissibility of using cognitive enhancers depends upon students' motivations. Put another way, a student's reasons determines the permissibility of using cognitive enhancers.

To illustrate how a student's reasons for using cognitive enhancers determines whether their use is permissible, let's reevaluate Oliver and Edith's cases. In Oliver's case, his reason for choosing to use cognitive enhancers is to make up an assignment because of improper study habits. This does not seem to be a good reason for a student to use cognitive enhancers. Because Oliver's reason for acting, his motivation, does not reflect well on his character and is not indicative of human excellence, it is possible to consider his use of cognitive enhancers as impermissible. Now consider Edith's case: her reasons for using cognitive enhancers are to gain a better understanding of Wittgenstein and for her love of philosophy. Wanting to better comprehend the material and achieve intellectual development does seem to be a good reason for a student to use cognitive

enhancers. Edith's reasons for using cognitive enhancers reflect good character and, importantly, are indicative of human excellences.

This evaluation of Oliver and Edith's motivations is done rather broadly. Yet the point is to illustrate that if the permissibility of using cognitive enhancers is dependent on a student's motivations, then certain motivations do justify student use of cognitive enhancers whereas others do not. This account of virtuous students and cognitive enhancers has done two things: first, it provides the general framework of the ideals of human excellence for use in examining issues of enhancement in academia, which begins with the kind of students one wants in academia. The permissibility of students using cognitive enhancement then rests not only on considerations of rules and consequences but also on motivations. Second, the motivations of virtuous students do justify the use of cognitive enhancers as being permissible in academia. The implication from this account of virtuous students and cognitive enhancers is that in academia, the use of cognitive enhancers is permissible under the condition that students have a proper motivation for using them.

That a virtuous student (or person) likely has never existed and that most of us clearly lack virtue implies if that a virtues-based approach is to advance the discussion of enhancement in academia, then it is necessary for it to formulate institutional rules to govern student use of cognitive enhancers. However, this virtues-based approach faces two related concerns about formulating institutional rules. The first concern is whether a virtues-based approach can formulate institutional rules for governing student use of cognitive enhancers when permissibility depends on a student's motivation. Assuming that a virtues-based approach could formulate institutional rules, the second concern is in

relation to the strength of these rules. Institutional rules are not meant for governing the virtuous but rather for governing those who lack virtues; that is, everyone else.

3.5 Ideal Conception of Academia and Institutional Rules

To answer these concerns sufficiently, I provide an *ideal* conception of academia.

This conception stipulates certain idealized conditions pertaining to academia and students (Rawls 1999; Simmons 2010). In this ideal conception, I formulate institutional rules to govern the use of cognitive enhancers and address these two concerns.

Elucidating a virtues-based approach from within an idealized framework yields a theoretical view that I use toward enhancement in academia under non-ideal conditions in subsequent chapters. For the remainder of this chapter, the work is in ideal theory and within an ideal conception of academia.

The ideal conception I provide works within the following stipulated framework.

First, in this ideal conception, the goal, aims, and assessment of academia are as follows.

The goal of academia is to expose students to the sciences, arts, and humanities.

Activities in academia are structured by two aims: progressively providing students with information of greater depth and improving their skill sets. Students' academic activities are assessed by an accepted standard in a competitive environment. Second, academia on the whole is modeled on contemporary academic institutions in the United States, and the assumption is that these exist under reasonable and fair social conditions. Third, academia has made its institutional rules and rationales for these rules public. Finally, students in this ideal conception of academia are compliant with the goal, aims, assessment, and competitive environment of academia; additionally, these students have

the requisite intellectual capacities and moral psychology. While not vicious, these students do lack virtues.

3.6 Ideal Conceptions of Academia

With the framework stipulated, I now put forward two differing interpretations of an ideal conception of academia: the first interprets the goal of academia in respect to knowledge, whereas the second interprets the goal in respect to understanding. In the first interpretation, students in academia are exposed to different and varying academic disciplines in the sciences, arts, and humanities to develop their intellectual capacities and to obtain knowledge. As I use it, knowledge refers to the collection of information and facts acquired through education. In the second interpretation, students are exposed to different and varying academic disciplines in the sciences, arts, and humanities to develop their intellectual capacities and to attain understanding. Minimally, understanding is an ability to draw upon and connect information and facts from diverse domains and apply this information and facts to one's own experiences.

The first interpretation has two advantages; first, one need not include the virtue of seeking understanding as a minimal virtue for students to possess. Although it certainly would be a good virtue for students to possess, the virtue of seeking understanding is rather demanding since it requires not only having knowledge but also exercising a sophisticated capacity with this knowledge. If the goal of academia is to expose students to different and varying academic disciplines in the sciences, arts, and humanities so that they will develop intellectual capacities and obtain a collection of information and facts, it is simply easier to claim that a student only needs the virtue of seeking accurate beliefs.

The second advantage is in respect to enhancement: that cognitive enhancers only augment the capacities of focus and concentration and cognition is directly conducive to the goal of academia. These enhancements augment the capacities related to the collection of information and facts, making it more likely a student will obtain knowledge.

The first interpretation of the goal of academia is a reasonable ideal conception of academia, but despite the advantages provided by this interpretation, I am going to use the second interpretation. Although an aspect of developing a student's intellectual capacities is obtaining knowledge, academia is oriented for students to achieve or at least strive to achieve for more than obtaining knowledge. We want students to draw upon, make connections between, and then apply the information and facts given in academia to their lives.

While explicating this conception of understanding, I argue in the following section why one should think of the goal of academia in respect to understanding rather than to knowledge.

3.6.1 Ideal Conceptions of Academia: Understanding Rather than Knowledge

To demonstrate why I think one should interpret the goal of academia in respect to understanding rather than to obtaining knowledge, consider the neurological condition/disorder of prosopagnosia (National Institute of Neurological Disorders and Stroke 2007). Agnosias are neurological conditions in which a person has difficulty with recognizing or is unable to recognize certain objects, shapes, smells or persons, but without memory loss or impairment to their specific ability (National Institute of Neurological Disorders and Stroke 2007). Prosopagnosias are one type of agnosia in

which an individual has no impairment of their visual abilities or their memory but has difficulty recognizing, or is unable to recognize, faces—often the faces of persons close to them such as spouses, parents, or their children (Levy 2007). For example, a patient with prosopagnosia may see that an individual is a woman wearing a green dress who is 5’4” and blue eyes, an aquiline nose, and brown hair. This patient’s memory is not impaired, and he knows that he is married to a 5’4” woman with blue eyes, an aquiline nose, and brown hair. Yet it is not until this individual speaks to the patient with prosopagnosia that he is able to recognize the individual as his wife.

Prosopagnosia may seem like an odd example, but it differentiates my conception of understanding versus obtaining knowledge. This patient has the relevant information and facts and for all intents and purposes, he has knowledge about his wife. However, what the patient is unable to do or lacks the ability to do is to connect and apply this knowledge to his experiences. In respect to my research project, the point of using prosopagnosia is that this patient seems to have knowledge but lacks understanding. What the disorder of prosopagnosias makes clear is that while a person possessing information and facts is important, something that is often overlooked is the significance of being able to draw upon, make connections with, and apply this knowledge to one’s life.

With respect to an ideal conception of academia, it is reasonable to expect that its goal should be interpreted in respect to understanding. We want students in academia to be exposed to different and varying academic disciplines in the sciences, arts, and humanities to develop their intellectual capacities and to draw upon, make connections with, and apply the information and facts from these different and varying academic

disciplines to their lives. That academia is valuable instrumentally and for its own sake is consistent with its goal of attaining understanding. Consider the following illustration: Teresa is a student in academia who is taking a course in human physiology. She just finished her midterms, which covered the topics of nutrition and the human immune system. After a day of midterm exams, Teresa goes to her local grocery store to shop for food. While shopping, she passes a stand selling Airborne™. This product states that because it contains large amounts of vitamin C, it can prevent a person from getting a common cold. Drawing upon, connecting with, and applying the information and facts from her human physiology course, Teresa knows that although vitamin C may mildly ameliorate the duration or intensity of a common cold, it has not clinically been proven to prevent an individual from getting a common cold (Doheny 2008)³³ Teresa decides not to buy this product.

This example may strike some as pedestrian, but consider what Teresa did. She drew upon, connected, and then applied information and facts she learned in academia to her own life experience. This behavior is why we value academia for students. One might think that this example merely shows some sort of consumer transaction and does not accurately represent the value in academia. However, if the situation and product were something else, such as Teresa deciding whether to buy shark cartilage as a treatment for cancer or deciding whether or not to use a vaccine on her newborn infant, then the level of importance certainly increases. Yet the value of Teresa drawing upon, making connections, and then applying information and facts she learned in academia to her own

³³ Misleading claims is not something unique to Airborne™. Other products such as Pfizer's vitamin line Centrum™ has faced similar concerns and criticism about its "colon health" or "energy boost," and the majority of supplements for athletic performance are unregulated (Hensley 2012; Epstein and Dohrmann 2009).

life experience would not change. Teresa attaining understanding is both instrumentally beneficial and good for its own sake. Therefore, it is reasonable that the goal of an ideal conception of academia should be to expose students to different and varying academic disciplines in the sciences, arts, and humanities to develop their intellectual capacities and to attain understanding.

3.6.2 Two Worries About Understanding

There are two worries that understanding, as I conceive of it, must navigate. The first is that this conception of understanding seems to suggest that the value of understanding is only in application. Alternatively, the second worry is that by encapsulating other values of understanding besides applicable ones, this conception of understanding becomes too broad and runs the risk of being too vague to adequately interpret the goal of academia. I address both of these worries and in doing so provide greater detail to this conception of understanding.

The first worry is that while this conception of understanding is broadly accurate, it may focus too heavily on understanding as mere ability or application. If understanding is thought of strictly as ability or if it focuses too much on application, then this conception of understanding treads dangerously close to being merely instrumentally valuable.³⁴ The problem (similar to the argument for those who think the use of cognitive enhancers is not cheating) is that we clearly don't value understanding solely for its instrumental purposes. The value of understanding is not as subsequent ability or in its application, but as something good for its own sake. Like education, understanding is good for its own sake because it makes a student a better person, regardless of other uses. One might point

³⁴ Jon Garthoff brought this concern to my attention.

to Teresa's case as illustrating only the instrumental value of understanding. In her case, understanding is only valuable because she applied it to the situation and avoided buying sham products, not because it was good for its own sake. If understanding is then only instrumentally valuable and the goal of academia is interpreted in respect to attaining it, the worry is that this conception of understanding ultimately misrepresents the value of academia in this ideal conception.

At least to me, it is not clear why thinking of understanding as a kind of ability or focusing on its application to a student's experience implies (or is dangerously close to implying) that it is only instrumentally valuable. This worry seems to imply that if the value of something is as a kind of ability or application, then its value is solely instrumental. Yet this seems incorrect: there are some abilities that are still abilities valuable for their own sake, even if we focus on them with regard to their application or practical use.

Consider psychopathy, a mental condition or disorder in which a person lacks a cognitive-affective ability for empathy or remorse and is identified by callous and exploitive behavior (L. J. Cohen 2011; Schouten and Silver 2012). A person with psychopathy knows a wide range of information and facts concerning other persons, including that other persons have emotions, can feel pain and pleasure, and have goals different from their own. Yet a psychopath lacks the cognitive ability to connect this information and facts about other persons and apply them to their own actions effectively. Psychopaths are often charming and endearing but simply lack the ability to connect with other persons in such a way that allows them to think of other persons as having any value besides being objects for the psychopath's own use. In the case of psychopaths, it is

instrumentally bad that he or she lacks the cognitive-affective ability to connect with others, but it is also bad for its own sake for persons who are psychopaths that they lack this ability. Put otherwise, one thinks that being a psychopath is bad not only because it likely leads to callous and exploitive behavior but also for its own sake because this person lacks a pivotal component of the human experience: connecting with others is a constitutive element of what it means to be human.

Similarly, although I often talk about understanding as a kind of *ability* or valuable *in application* in broadly instrumental or situational terms, understanding is still something that we value for its own sake. A student who attains understanding is better off as a person even if they do not use that understanding for instrumental benefit. Analogous to this is the case of a person who obtains an educational degree that does not provide any instrumental or economic benefits, such as philosophy or art history. Although most people would think that a student studying these has made a poor life choice in terms of career objectives, these same people likely would not say that it wasn't at least good for its own sake for a student to receive that degree. Whether this student ever gets a job or advances the discipline of art history or philosophy, attaining the degree was good for them to do. In the same way, although this conception of understanding is most often couched in terms of instrumental benefits, it is still good for its own sake.

To make it a reasonable interpretation of the goal of an ideal conception of academia, a point I concede to this worry is that this conception of understanding needs to be filled out further to answer why understanding is valuable for its own sake. To do so, I must navigate the second worry, that in endeavoring to encapsulate fully the value of understanding in academia, I run the risk of making understanding so broad that it

becomes too vague. Consider what happens if one thinks of understanding solely as *comprehension of the human experience* or *fostering connections with others* but not within the context of some kind of ability or application. It seems true that these are good things but they offer little clarity as to why the goal of academia should be interpreted in this way.

In respect to this worry, I contend that conceiving of understanding as ability or application does not exclude incorporating more value-laden conceptions such as comprehending the human experience and fostering connections with others. In fact, having the ability to draw upon, make connections with, and apply information and facts to one's own experience is at least one way to attempt to comprehend the human experience. Moreover, that one connects information and facts and then applies them to one's life experience does seem to foster connection with others.

Therefore, if this conception of understanding navigates these two worries, it seems reasonable and consistent with our values to interpret the goal of academia in respect to understanding and not knowledge in this ideal conception. Even though explicating a conception of understanding is difficult and my conception falls short of encapsulating all the senses and values of understanding, one can still hold that it is what we want students in academia to strive to attain.

3.7 Ideal Conception of Academia As Understanding and Virtues

In this ideal conception of academia, students are exposed to different and varying academic disciplines in the sciences, arts, and humanities to develop their intellectual capacities and to attain understanding. Although there are no virtuous students, the kinds of students to want are virtuous students or, minimally, those who possess the virtues of

seeking understanding and seeking accurate beliefs. These virtues are consistent with the aims that structure academic activities: first, progressively providing students with information of greater depth; second, working to improve students' skill sets such as reading comprehension, arithmetic, writing, and critical thinking; and third, making them consistent with assessment against a set standard.

In this ideal conception of academia, although not vicious, students lack virtue. Since these students lack virtue, this virtues-based approach must formulate an institutional rule to govern student use of cognitive enhancers.

In the following, I formulate a virtues-based institutional rule and address two previously raised concerns about (i) an institutional rule for governing student use of cognitive enhancers when permissibility depends on a student's motivation, and (ii) the strength of this institutional rule in governing students who lack virtues.

3.8 Virtue-Based Institutional Rule

This virtues-based approach generates the following institutional rule.

Students are permitted to use cognitive enhancers if their reasons for using them are reflective of ideals of human excellence.

I contend that this virtues-based institutional rule functions to govern student use of cognitive enhancers in two ways. First, it functions to govern student use of cognitive enhancers by indicating permitted and prohibited uses of cognitive enhancers. Second, it provides guidance for students who lack virtues.

In detail, the first way this rule functions to govern student use of cognitive enhancers is by indicating which uses of these enhancements are permitted and prohibited. The permissibility of using cognitive enhancers is determined by a student's motivation relative to the ideals of human excellence. The following examples broadly illustrate

permitted and prohibited uses of cognitive enhancers. A student would be prohibited from using a cognitive enhancer if the reason is to make up for irresponsible study habits, to competitively beat other students, or to work through a boring academic activity. These reasons are not reflective of ideals of human excellence. A student would be permitted to use a cognitive enhancer if the motivation is for self-improvement, seeking understanding, or seeking accurate beliefs.

An initial worry might be that this virtues-based institutional rule is too vague. Yet it seems that persons are often and without controversy governed by vague rules. Consider children and certain rules in kindergarten. In a kindergarten class, there might be a rule that states, “Students should be nice to other students.” This rule is vague, but is it so vague as to be unable to govern students? I think not, in part because this rule does indicate the condition for determining a permissible act: being nice. To determine whether an act is nice or not, a student has to consider whether an act is pleasant or polite. It is true that children at this age may not fully comprehend all the aspects of what it means to be nice because there might be some acts they cannot determine as being nice, or the children incorrectly believes certain acts such as pulling hair to be nice when they are not. Still, this rule indicates the condition of being nice as determining a permissible act. It seems rather uncontroversial that part of a child’s development in kindergarten is for him to strive to determine what constitutes a nice act. That the rule is vague does not seem to be a problem.

Similarly, while this virtues-based institutional rule is vague, it does indicate the condition for determining permissibility: motivations that are reflective of ideals of excellence. In particular, this rule stipulates that the condition determining the

permissible use of cognitive enhancers is motivation relating to self-improvement, or the virtues of seeking understanding and accurate beliefs. In this ideal conception of academia, the goal is the development of a student's intellectual capacities and the attainment of understanding; thus the goal suggests that a student should at least strive to establish what it means to act for reasons reflective of the ideals of human excellence.

Still, one might wonder how a student thinking about the ideals of human excellence helps to determine what is a permissible use of cognitive enhancers. In fact, what this student is looking for is whether a certain use of a cognitive enhancer is permissible or not. Consider that in a meta-analysis of thirteen studies surveying students on their use of cognitive enhancers, the most commonly selected reason for using cognitive enhancers concerned the improvement of "concentration" or "attention," "academic assignments," "grades," and "intellectual performance" (Smith and Farah 2011). Are these motivations to be taken as reflective of the ideals of human excellence? If a student uses cognitive enhancers for such reasons, is it permissible?

The virtues-based institutional rule handles this concern because this rule functions to govern student use of cognitive enhancers by providing *guidance* for students who lack virtues. It is clear that a virtuous student (or person) even in this ideal conception of academia does not exist; yet it does not follow that a student who lacks virtues cannot rely on this virtues-based institutional rule to help them resolve a situation. That a virtuous student chooses to use cognitive enhancers for reasons indicative of human excellence, in turn, provides guidance for students who lack virtue for the use of enhancements by providing them with an *ethical outlook*.³⁵ An ethical outlook is not a

³⁵ Timothy Chappell also invokes the notion of an ethical outlook, but while our notions are roughly similar, he employs the notion of ethical outlook as a critique of contemporary academic moral theory,

decision-making procedure but a mental first-person perspective that an individual uses in attempting to conceive of a resolution to a particular situation.

For a moment, put aside this ideal conception of academia and consider the many occasions in which people in non-ideal situations invoke conceptions of virtuous persons to help determine a resolution. A physician may ask, “What would a virtuous physician do?” a soldier, “What would a virtuous warrior do?” and a teacher, “What would a virtuous teacher do?” Although a virtuous person likely has never existed and because most of us clearly lack virtue, contemplating a virtuous agent is to deliberate on finding a solution from a different perspective. The Stoic Epictetus suggests adopting such an ethical outlook as strategy to prepare one’s self for situations of great importance:

When you are about to meet somebody, in particular when it is one of those men who are held in very high esteem, propose to yourself the question, ‘What would Socrates or Zeno have done under these circumstances?’ and you will not be at a loss to make proper use of the occasion. (Epictetus 1952–56, sec. 33.12–13)

By situating one’s mental perspective to that of a virtuous person, as John McDowell contends, “A conception of right conduct is grasped, as it were, from the inside out” (McDowell 1997).³⁶ In a given situation, by asking, “What would a virtuous person do?” a person attempts to determine a solution from the perspective of someone whose actions and motivations in a situation are reflective of human excellence as a matter of character. In invoking the conception of a virtuous person, a resolution to a particular situation is gained because a person recognizes that a virtuous physician’s character is beneficence, a virtuous soldier’s character is honor, and a virtuous teacher’s character is fairness. In

whereas my notion of ethical outlook is used solely to facilitate the project of providing a virtues-based approach to issues of enhancement in academia (Chappell 2009).

³⁶ For McDowell, adopting this ethical outlook is the necessary approach one takes in answering the question of how one should live (McDowell 1997).

everyday life, people use a conception of a virtuous person as an ethical outlook for determining a solution to a particular situation. This ethical outlook is unique in that whatever the resolution may be, a person's actions and motivations are to be in harmony and reflective of a certain kind of character.

Returning to the ideal conception of academia and a student who lacks virtues, reflection on the virtuous student guides one toward a solution in a particular situation concerning the use of enhancements that is indicative of the attitudes and character of the kind of student one would want in academia. This virtues-based institutional rule first emphasizes that a student's dispositions may need to be aligned with the proper motivational structures. Second, it provides an ethical outlook to use for determining permissible uses of cognitive enhancers for a student who lacks virtues.

To illustrate, imagine that Oliver, a student who lacks virtues, has to write a term paper on Wittgenstein's *Philosophical Investigations* and is considering using cognitive enhancers. Wanting to use cognitive enhancers, Oliver takes his motivations to be improvement of "concentration" or "attention," "academic assignments," "grades," and "intellectual performance." Yet Oliver is uncertain whether these motivations as currently stated would make his use of cognitive enhancers permissible. The motivations of "improve concentration" or "academic assignments" do not provide that much illumination in respect to determining permissibility.

To figure out permissibility, Oliver adopts the ethical outlook of a virtuous student who, at a minimum, possesses the virtues of seeking understanding and accurate beliefs. From this mental perspective Oliver judges the relevant information in his particular situation: rules, consequences, and motivations. In respect to rules, Oliver considers

whether there are any rules that prohibit his use of the cognitive enhancer, such as whether these cognitive enhancers were procured illegally. Next Oliver considers the consequences of using cognitive enhancers. What is the ratio of reward to risk? Is the paper worth potential short-term health risks, such as headaches and jitteriness, or for long-term risks, such as withdrawal? As a virtuous student would, Oliver would also consider whether there are other options besides using cognitive enhancers, such as going to a quieter place or starting the assignment early and working on it progressively.

Although Oliver's motivations are currently indeterminate for establishing permissibility, it would take very little probing on his part to find out. Do his motivations reflect the ideals of human excellence such as self-improvement, seeking understanding, or accurate beliefs? Do they reflect well on his character as a person? Would a virtuous student have these as motivations, or would a virtuous person think these are good reasons? Oliver would also consider whether he is being realistic about the strengths and weaknesses of his academic skill set. Would using cognitive enhancers help to improve his writing or just ignore a more fundamental problem about his writing ability?

From the ethical outlook of a virtuous student, Oliver works through a process of practical reasoning to determine whether his use of a cognitive enhancer is permissible. In adopting this ethical outlook, it is likely to think that Oliver would at a minimum conclude that the use of cognitive enhancers for reasons pertaining to lack of study habits, merely getting ahead of classmates, or completing a tiresome academic activity does not reflect well on his character.

3.8.1 Limitations of a Virtues-based Institutional Rule's Ethical Outlook

By providing an ethical outlook, this virtues-based institutional rule does guide students who lack virtues in respect to the proper use of cognitive enhancers. However, as the following questions illustrate, there are reasonable limitations and constraints regarding the guidance provided by the ethical outlook of a virtuous student. First, when deciding whether to use a cognitive enhancer, must students who lack virtues always adopt the ethical outlook of a virtuous student? No. In many cases, a student, even one who lacks virtues, can decide if her motivation for using a cognitive enhancer is reflective of ideals of human excellence. It is only when students are confronted with a situation in which they are unsure of motivations and permissibility that they adopt this ethical outlook. Second, when a student who lacks virtues adopts this virtuous student ethical outlook, will he or she always be guided to the “correct” answer? On one hand, if the “correct” answer is taken in the broad sense of a student who lacks virtues and is guided to use cognitive enhancers for reasons reflective of the ideals of human nature, then yes, it does. On the other hand, if the “correct” answer is taken in the narrow sense of providing an answer to every particular situation and circumstance, then no, it does not. Adopting a virtuous student ethical outlook does not mean that a student who lacks virtues always will be guided to the correct answer or best course of action.

3.8.2 Difficulty of Arriving at Correct Answers

It is important to note that demanding a virtuous student ethical outlook to arrive always at the correct answer or course of action in this narrow sense is unreasonable and excessively demanding. The flaw is not with a virtuous student ethical outlook or for that matter with a decision-making procedure; instead the flaw is in thinking that any ethical

outlook or decision-making procedure could always arrive at a correct answer. That life provides many different, complicated, and difficult situations suggests it is unreasonable and excessively demanding to think an ethical outlook or decision-making procedure could answer them all.

For example, consider the difficulty that any ethical outlook or decision-making procedure has in arriving at the correct answer or best course of action in providing sympathy to grieving persons. We have all either given (or been on the receiving end) of awkward hugs, conducted irrelevant conversations about the weather, or provided a grieving person with excessive amounts of food. Whether one adopts the ethical outlook of a virtuous person or the decision-making procedures based on maximizing happiness or acting out of respect for persons does not guide one to a single correct answer or course of action. Moreover, regardless of the level of subtlety and delicacy involved, there are situations in which no action can ever be successful in providing comfort to grieving persons.

From what I can draw upon from working as a clinical ethicist, the clearest examples are situations involving telling parents that sustained treatment of their child is no longer medically appropriate (or consoling them after their child has passed away). My point is not that these situations are a reason for rejecting an ethical outlook or even a decision-making procedure. Rather, it is simply to acknowledge that there are reasonable limitations and constraints on always arriving at a correct answer. One is misguided to think that any ethical outlook or decision-making procedure can always arrive at correct answer in this narrow sense.

3.8.3 The Necessity of Mistakes

Another reason that demanding that a virtuous student ethical outlook always arrives at a correct answer is misguided is that it overlooks the importance of students making mistakes in academia. For a student to develop their intellectual capacities and attain understanding requires making mistakes. Students make academic mistakes, such as getting an answer wrong on a test. These academic mistakes are facilitated by the two aims and assessment of students. When a student makes an academic mistake, it is a teacher's responsibility not only to point out the correct answer but also to explain why it is the correct answer. In pointing out the student's error and providing an explanation of why, the teacher facilitates the development of a student's intellectual capacities and hopefully moves them closer to attaining understanding.

Of equal if not greater importance is that students will make ethical mistakes in academia such as violating an institutional rule. Academia is prepared for such mistakes because it has processes and procedures such as judicial affairs and boards whose responsibility is to provide appropriate punishment for students and to explain the importance of an institutional rule. Academia is not only prepared but expects students to make these ethical mistakes because it is an element of student development. Although many students are caught plagiarizing every year, most academic institutions do not expel students for their first offense. Academia expects a certain level of plagiarism among students because of poor judgment on a student's part. For a student caught plagiarizing, the process and procedures of going through judicial affairs allows for a student to be punished (such as by being failed in the class or exam) in a manner that explains the importance of proper citation and the value of respecting others' work. Whether it is

academic or ethical, a student who never makes a mistake is a student who never can develop his intellectual capacities or attain understanding.

Significant value is attributed, rightly so, on a person erring and having the prudence to admit it. Yamamoto Tsunetomo's *Hagakure* shows the significance of admitting one's shortcomings by a story concerning a debate about the potential promotion of a man on a royal council:

At the time when there was a council concerning the promotion of a certain man, the council members were at the point of deciding that promotion was useless because of the fact that the man had previously been involved in a drunken brawl. But someone said, "If we were to cast aside every man who had made a mistake once, useful men could probably not be come by. A man who makes a mistake once will be considerably more prudent and useful because of his repentance. I feel that he should be promoted." Someone else then asked, "Will you guarantee him?" The man replied, "Of course I will." The others asked, "By what will you guarantee him?" And he replied, "I can guarantee him by the fact that he is a man who has erred once. A man who has never once erred is dangerous." This said, the man was promoted. (Tsunetomo 2002, 14)

It is both instrumentally beneficial and good for its own sake that a person (or student) makes a mistake and learns from it. It is unreasonable in regard to the goal of academia to demand that a virtuous student ethical outlook always arrive at the correct answer or course of action in this narrow sense because students would be unable to develop their intellectual capacities or attain understanding. By acknowledging reasonable limitations and constraints on ethical outlooks or even on decision-making procedures, this virtues-based institutional rule does provide guidance for students who lack virtues in respect to the proper use of cognitive enhancers.

Therefore, in an ideal conception of academia, this virtues-based approach formulates an institutional rule that governs student use of cognitive enhancers, with a student's motivation being the condition that determines permissibility. Moreover, this virtues-

based institutional rule's reliance on an account of virtuous students as an ethical outlook does provide strong guidance for students who lack virtues.

Nevertheless, there are two problems that this virtues-based approach and institutional rule must face. First, even in this ideal conception of academia, it seems unlikely that all students who lack virtues would follow this institutional rule. While students in this ideal conception are compliant with the goal, aims, assessment, and competitive environment of academia, it is inevitable and sensible to think that although many students will follow this rule, some will not. In these instances, students' motivations for using cognitive enhancers would not be reflective of the ideals of human excellence. The problem is that if some students in an ideal conception of academia will not follow a virtues-based institutional rule, does that suggest that a virtues-based approach toward issues of enhancement in academia will inevitably fail?

The second problem is that even if this virtues-based institutional rule were to be successfully implemented, does this virtues approach substantially advance issues of enhancement in academia beyond questions of permissibility? The virtues-based approach argues that cognitive enhancers are permissible but that these enhancements do not directly augment cognition or the attaining of understanding; it seems unreasonable to think that this entails both ideal and non-ideal theory reconceptualization of issues of enhancement in academia. These two problems suggest that a virtues-based approach to issues of enhancement in academia will at worst fail or at best fail to advance the discussion of enhancement in academia in an interesting way.

Although these are legitimate problems for any approach attempting to provide a general framework for advancing issues of enhancement in academia, I do not think they

apply to this virtues-based approach. There is another way in which a virtues-based institutional rule can govern student use of cognitive enhancers; it can structure and develop the motivations of students in academia. As I argue in the following, if a virtues-based institutional rule structures and develops the motivations of students in this ideal conception, then it shapes the *ethos of students*. The ethos of students comprises the attitudes and sentiments they hold in light of academia's institutional rules and informal pressures.³⁷ I contend that with this virtues-based approach's institutional rule, even if some students do not follow it, it does more than establish permissibility: it shapes the ethos of students who lack the virtues found in the virtuous student and thus advances the discussion of enhancement in academia.

3.9 Structuring and Developing Students' Motivations

To understand how a virtues-based approach's institutional rule can shape the ethos of students, I briefly return to two elements introduced in the first chapter of this research project: the embedded cognition hypothesis and features of institutional rules. First, the embedded cognition hypothesis holds that while cognition is located within our cranium, our environment is also integral to human cognition. As Andy Clark writes:

The central idea is that understanding what is distinctive about human thought and reason may turn out to depend on a much broader focus than that to which cognitive science has become most accustomed: a focus that includes not just body, brain, and the natural world, but the technological props, aids and scaffolding (pens, paper, PC's, institutions...) which our biological brains learn, mature and operate. (Clark 2001, 15)

That the environment is integral to human cognition is clear. Yet if pens and laptops are external props that can support and assist human cognition, it then also seems reasonable,

³⁷ This conception is derived from G.A. Cohen's conception of ethos in his criticism of John Rawls (Cohen 1997).

as Clark mentions, to think that institutions support and assist our cognition.³⁸ While this research project is not about human cognition or cognitive science, what I take from the embedded cognitive hypothesis is that institutions are not only integral to the processes of cognition but also integral to the way persons think. Put otherwise, institutions are integral in shaping the attitudes and sentiments of persons. Henceforth my focus is on how academia shapes the attitudes and sentiments of students concerning the use of cognitive enhancers.

One way academia shapes the ethos of students is through its institutional rules. In the first chapter, I broadly stipulated the features of institutional rules as the regulations or protocols that govern students' actions by stipulating or directly or indirectly indicating which actions are permitted and prohibited. These features of institutional rules are action guiding: student's actions are directed in respect to these rules. In guiding the actions of persons, institutional rules can structure and develop motivations in two ways: as creating expectations of a pattern of behavior or as an internalized institutional rule.

In these two ways, academia's institutional rules structure and develop the motivations of students, which in turn shape the ethos of students. Consider how institutional rules governing the use of cell phones shapes the ethos of students in academia. Most students share the attitude and sentiment that absent mitigating reasons, using a cell phone during class is improper.³⁹ Anyone who has worked recently with students in academia might disagree. Yet even during a lecture it is rare that a student

³⁸ To be clear, Clark and other embedded (or extended) cognition theorists are working within the realm of cognitive science: explaining the process and ways in which human cognition works. While my research project does take environmental scaffolding (external props) as integral to human cognition, my research project is not one of cognitive science (Clark 2001; Levy 2007).

³⁹ Notice that even if this is the ethos of students regarding cell phones, it does not mean that students are always forbidden from using cell phones during class or that there is never a reason for a student to use a cell phone under this rule.

answers or makes a phone call during class. Most often, students use their cell phones for text messaging. For the sake of argument, let's say that text messaging does fall within the purview of this rule. In fact, the majority of students are not texting during class, and those who do often attempt to conceal (even if poorly) their texting. Students who are texting attempt to conceal it because the ethos of students regarding texting during class is not positive. Thus academia's institutional rule prohibiting the use of cell phones during class does shape the attitude and sentiment of students.

The question of importance then is whether a virtues-based institutional rule can shape the ethos of students who lack virtue with respect to using cognitive enhancers. In the following, I elucidate the two ways institutional rules can structure and develop motivations and then how these rules would shape the ethos of students regarding the use of cognitive enhancers.

3.9.1 Virtues-Based Rule and Expectations of Behavior

The first and most common way is by creating expectations of a pattern of behavior. In that students have expectations of a certain pattern of behavior, institutional rules direct student interactions. To illustrate, if there is an institutional rule for driving on the right side of the road, a person has the expectation that under normal conditions, other drivers will drive on the right side of the road.⁴⁰ One's expectation that other persons will drive on the right is a reason for one to drive on the right. According to economists Avner Grief and Christopher Kingston, these institutional rules create expectations of behavior and motivations, thereby reinforcing this rule (Grief and Kingston 2011).

⁴⁰ This example is used both in Avner Greif and Christopher Kingston's work on economic modeling of institutions and in Jon Garthoff's work on the role of rules in moral judgment (Grief and Kingston 2011; Garthoff 2012).

In academia, institutional rules provide expectations of a pattern of behavior and, in directing student interactions, structure and develop a student's motivations. In academia, a rule prohibiting a student from using a cell phone during class time structures students' motivations. The students' motivation is that this institutional rule is a reason for not using their cell phone, and other students do not use their cell phones in class either, so one can attribute this rule as their motivation to also avoid using a cell phone in class.⁴¹ Moreover, for some students, this institutional rule structures and develops a second-order motivation: civility.⁴² It is a social courtesy, an institutional rule of etiquette, to the professor who is lecturing and to other students who are listening to the lecture for one not to use a cell phone in class. In providing expectations of a pattern of behavior and directing interactions with other students, institutional rules structure and develop the motivations of students.⁴³

This virtues-based institutional rule governing student use of cognitive enhancers holds that students are permitted to use cognitive enhancers if their reasons for doing so reflect ideals of human excellence. This rule shapes the ethos of students in the following ways. First, by indicating permitted and prohibited uses of cognitive enhancers, this rule is action guiding and directs students' interactions, which sets an expectation for a pattern of behavior. It becomes expected that at least one reason students have for using cognitive enhancers and a reason one attributes, even if incorrectly, to other students for using cognitive enhancers reflects the ideals of human excellence. The expectation is that

⁴¹ While it might turn out this is not the student's reason for not using their cell phone, attributing this institutional rule as one their motivation does not seem to be unreasonable.

⁴² Civility was considered to be the most important mark of a society by Samurai culture and its code of honor (Tsunetomo 2002).

⁴³ Avner Grief and Christopher Kingston focus on this aspect of institutional rules and motivations by studying and creating an economic model of institutions called "institutions-as-equilibria" (Grief and Kingston 2011).

student use of cognitive enhancers is motivated by ideals of self-improvement, seeking understanding, or seeking accurate beliefs. Moreover, by making motivation the condition of permissibility, this virtues-based institutional rule also can be seen as shaping the ethos of students by endorsing a hierarchy of motivations. Via the permissibility condition, this virtues-based institutional rule develops, cultivates, and endorses certain motivations such as self-improvement, seeking understanding, and seeking accurate beliefs while discouraging other motivations such as getting high, finishing a boring academic activity, or making up for poor study habits.

When students' behaviors follow an expected pattern and their motivations are developed, cultivated, and endorsed in reference to the ideals of human excellence, their attitudes and sentiments are more firmly shaped regarding the use of cognitive enhancers. The attitude and sentiments of students would regard proper use of cognitive enhancers (for reasons of the ideals of human excellence) as being good or admirable, whereas improper use of cognitive enhancers (such as making-up for poor study habits) would be regarded with disdain. The ethos of students is shaped to regard the use of cognitive enhancers as an action that is indicative of a student's character. In general, students would view students who broke a virtues-based institutional rule with contempt.

In viewing such a student with disdain and thinking that it reflects poorly on their character, the ethos of students regarding the improper use of a cognitive enhancer is in many ways analogous to the ethos of students regarding inappropriate language in class. Students view other students who consistently use inappropriate language during class with disdain and often think it reflects poorly on that student's character. It need not matter that inappropriate language is a prerequisite for student life outside the classroom.

Within the context of academic activities, there is an expected pattern of behavior that structures and develops students' motivations, and the attitude and sentiments of students is such that the use of inappropriate language is discouraged.

3.9.2 Internalized Virtues-Based Institutional Rule

The second way institutional rules can structure and develop the motivations of students is when these rules are internalized, meaning that a rule becomes an element of a student's psychology. The kind of institutional rules that structure and develop the deep (second-order) motivations of students are, as I refer to them, *internalized institutional rules*. An example is the honor code for cadets at the United States Military Academy at West Point. The honor code states, "A cadet will not lie, cheat, steal, or tolerate those who do." This institutional rule not only stipulates which acts committed by students are impermissible (lying, cheating, stealing, or toleration of these acts) but also structures and develops a cadet's motivations; honor is a reason for acting accordingly. An honor code such as West Point's is an internalized institutional rule that sets the range of permissible actions.

As I use the term, honor is to respect or highly regard something or someone. Taken in this way, to honor a person or institution is to respect it and, alternatively, people and institutions also honor a person by respecting this individual (Appiah 2010). The conditions that govern honor are stipulated by an honor code:

An honor code says how people of certain identities can gain the right to respect, how they can lose it, and how having and losing honor changes the way they should be treated. (Appiah 2010, 175)

In academia, honoring students means to hold them in high respect or esteem. One function of honor codes is that they indicate the conditions such as certain scholarly,

artistic, or athletic achievements under which students may be honored (Appiah 2010). For example, being placed on the honor roll or having designations of *summa cum laude* or *magna cum laude* conferred upon graduation means that a student has met certain conditions and thus academia is honoring them.

The second function of honor codes is that they indicate the conditions under which students may lose the respect of academia or other students. If a student fails to maintain a minimal level of proficiency in academic performance such as failing too many courses or having a low GPA, or if a student engages in certain actions while in academia such as cheating or being deceitful, this student is not shown respect. For Cadets at West Point, lying, cheating, stealing, or toleration of these actions are the conditions for loss of respect and expulsion from the academic institution.

By indicating the conditions for gaining or losing respect, honor codes are institutional rules that govern and guide students' actions. Honor codes then not only govern and guide the behavior of students by setting the conditions for gaining or losing respect, but they also structure and develop a motivation for following these codes.⁴⁴ Honor can become a motivation for students. Gaining the respect of an academic institution, a professor, or peers can become a reason to act in certain circumstances such as working twice as long on an assignment, pulling an all-nighter studying, or seeking peer review of an assignment.

Honor is also a reason for acting because certain actions such as working twice as hard or seeking peer review reflect well on students' characters. If developed properly, honor is not only a reason for acting but can become a stable character trait for regular

⁴⁴ It should be noted that not all institutional rules are of the kind that can be internalized. It is not clear that a person can (or should) internalize institutional rules concerning driving on the right side of a road.

and reliable multi-track thoughts, feeling, and acts. For example, if cadets at West Point internalize an honor code, living honorably becomes a way of life as a matter of character.

Returning to enhancement in academia, in an ideal conception of academia, the ethos of students can be shaped if this virtues-based institutional rule (student use of cognitive enhancers is only permitted for reasons reflective of the ideals of human excellence) is internalized. This rule stipulates which uses of cognitive enhancers are permitted and prohibited. If students internalize this rule, it directly structures and develops their motivations: the ideals of human excellence are always the reasons for using cognitive enhancers. By internalizing this rule, seeking understanding and accurate beliefs are not simply reasons for using cognitive enhancers. When developed properly over an academic career, they become stable character traits for regularly and reliably thinking, feeling, and acting in certain ways. Thus this virtues-based institutional rule directly facilitates the development of the virtues of seeking understanding and accurate beliefs in students who lack them.

This virtues-based institutional rule shapes the ethos of students to consider that, as a matter of character, the use of cognitive enhancers should always reflect the ideals of human excellence. It is only for reasons of self-improvement or the virtues of seeking understanding and accurate beliefs that one should use cognitive enhancers. For an internalized virtues-based rule, unlike a virtues-based rule that creates an expectation for student behavior, the emphasis is on the use of cognitive enhancers as one clear indication of a student's character, to a much higher degree. This ethos of students would

hold the improper use of cognitive enhancers as an indication that the student does not possess the kind of character one wants from students in academia.

To illustrate, reconsider Oliver and Edith's cases. Oliver's motivation for using cognitive enhancers is to make up an assignment because of improper study habits. This reason for using cognitive enhancers is impermissible and reflects poorly on Oliver's character. Edith's motivation for using cognitive enhancers is to seek understanding. This reason makes her use of cognitive enhancers permissible and indicates good character. In this ideal conception of academia, under an internalized virtues-based institutional rule, both a particular academic institution and the ethos of students within it would regard Edith as the right kind of student and Oliver as the wrong kind of student to have in academia.

Initially, one might think that the ethos resulting from this internalized virtues-based rule is rather severe, but consider that this ethos is similar to the attitude and sentiments students have about the use of hate speech in academia.⁴⁵ In general, students regard those students who use hate speech not only as having poor character but also as the kind of student one does not want in academia. The ethos of students is shaped by an internalized virtues-based institutional rule that likewise considers those students who use cognitive enhancers for reasons other than the ideals of human excellence as the wrong kind of student for academia.

An internalized virtues-based institutional rule for governing student use of cognitive enhancers facilitates the development of certain virtues and shapes the ethos of students who lack these virtues so that the proper use of cognitive enhancers is always a matter of character. This internalized virtues-based institutional rule shapes the ethos of students

⁴⁵ By hate speech, I mean speech that is used merely to injure or provoke.

who lack virtues into mirroring the attitude and sentiments that virtuous students have regarding the use of cognitive enhancers.

Whether a virtues-based rule is taken as an institutional rule that creates expectations for patterns of student behavior or as an institutional rule to be internalized by students, students' motivations are structured and developed. This virtues-based rule shapes attitudes and sentiments of students such that the use of cognitive enhancers is seen as a reflection of their character. Therefore, a virtues-based institutional rule that permits students to use cognitive enhancers if their reasons for doing so are reflective of the ideals of human excellence would change student use of cognitive enhancers in academia. By re-conceptualizing the use of enhancement in academia as an issue of student character, this virtues-based institutional rule advances issues of enhancement in academia.⁴⁶

3.10 Three Concerns About Shaping the Ethos of Students

In previous sections, I answered the question of whether a virtues-based institutional rule can shape the ethos of students who lack virtue in respect to using cognitive enhancers for the right reasons. I argued that whether taken as an institutional rule that creates an expected pattern of behavior or as an internalized institutional rule, a virtues-based institutional rule does shape the ethos of students. However, there are three immediate concerns that both explications of this virtues-based rule are likely to encounter. First, I argued that the ethos of students is to be shaped in regards to a virtues-based institutional rule. At a minimum, this means that the ethos of students is shaped in respect to the virtues of seeking understanding and accurate beliefs; yet one might worry

⁴⁶ Concerns about this project's notion of character will be addressed in the following chapter.

about whether or not these virtues are of such significant value that we want academia (or for that matter any institution) to shape the ethos of students in regards to them. Second, it is reasonable to hold that an ideal conception of academia has the goal of developing students' intellectual capacities and attaining understanding. Moreover, it is reasonable that academia's institutional rules—as regulations or protocols governing students' actions—structure and develop the motivations of students and shape the ethos of students. The problem is that this virtues-based institutional rule is not just shaping the ethos of students; it is actively attempting to facilitate the development of virtues in students. In striving to help students attain understanding, it is unfair to task academia further with the responsibility of developing virtues in students who lack them. Finally, there might be a worry that this virtues-based approach makes an implicit normative claim that students who lack virtues not only have to follow this virtues-based institutional rule but also in some sense have an obligation to develop these virtues.

Each of these concerns addresses a different facet of this virtues-based institutional rule or the context in which the rule is taken. I conclude the chapter by addressing these concerns, further clarifying this virtues-based approach.

3.10.1 Are the Virtues that Significant?

To address the concern of whether these virtues are of such significant value that one would want to shape the ethos of students in respect to them, I temporarily move outside of ideal theory. To demonstrate the significant value of these virtues, I argue that one would want everyone, not solely students in academia, to possess these virtues. That these virtues are valuable enough to want all persons to possess them is a substantial

indication of their value and thus why we should shape the ethos of students toward these virtues.

In respect to the virtue of seeking understanding, first consider the importance of having a motivation to seek greater comprehension of the human experience in a person's life. An illustrative example is the role that seeking greater comprehension of the human experience has in medical ethics consultations. In many medical centers, if patients, their families, or hospital staff members are troubled by a particular treatment plan, they have the right to call an ethics consultation. In these consultations, a clinically trained ethicist or consultation team is called to examine, assess, and provide a recommendation for resolving the problem (Jonsen, Siegler and Winslade 2010). What distinguishes an ethics consultation from other consultations in the medical system (legal, medical, or psychological) is that these situations are often about values (Beauchamp and Childress 2009). However, in many cases it is not actually a dispute about value but rather a lack of comprehension.

One impetus behind the implementation of these clinical ethics consultations is the motivation to seek greater comprehension of the human experience. In doing so, one is able to foster connections between persons. For example, a physician might recommend a palliative treatment for a cancer patient, but the patient may choose to reject this treatment plan. Initially, it might appear that there is a conflict between the physician's duty of beneficence and the patient's autonomy. One of the first things that an ethics consultant attempts to resolve is to ensure that both parties understand the relevant information. In this example, the patient rejects palliative care for fear of addiction. A resolution may occur when the patient is provided with information and comes to

understand that the use of opioids during palliative treatment poses little risk of addiction (Enck 2002; Seppala and Rose 2010; Dresser and Frader 2009). Another resolution might be to provide information to the medical professional: as long as the patient is competent and possesses decision-making capacities, he always has the right to refuse treatment (Beauchamp and Childress 2009).⁴⁷ It seems that even if providing this information does end the conflict, it was good to do because it provided patients and medical professionals with relevant information and fostered a connection.

Possessing the motivation to seek greater comprehension of the human experience is significant for persons because it can lead to resolutions of conflicts as well as foster a connection with other persons. Martha Nussbaum contends that the comprehension of the human experience fosters a connection with other persons by allowing for a respectful dialogue to begin (Nussbaum 1997). Jonathan Glover contends that a pivotal factor in many historical atrocities was a general lack of comprehension (taken as moral imagination) of other persons (Glover 2001).

Moreover, it is not simply the motivation of seeking greater comprehension of the human experience and the connection it fosters with others that makes this virtue something that all persons should possess. It is of significant value that a person is able to draw upon, make connections, and apply information to their lives. Consider that all too often, people do not draw upon, connect, or apply information in their lives enough. For example, eating more than the daily recommended caloric amount can often lead to obesity, and many items on a fast-food restaurant menu greatly exceed the daily-recommended caloric intake for the average person (Schlosser 2001). According to the

⁴⁷ Competency is a legal term, not a medical term. Only a judge can decide on competency, but medical professionals can decide on a patient's decision-making capacities.

2009 to 2010 *National Health and Nutrition Examination Survey*, 37.7% of adults in the United States are obese (National Center for Health Statistics 2012). Some of the health conditions directly related to obesity are heart disease, stroke, type-2 diabetes, and certain types of cancers (National Heart Lung and Blood Institute 1998). In 2008 alone, the cost of medical treatments relating to obesity and its related conditions was estimated at \$147 billion (Finkelstein, et al. 2009). Yet despite the prevalence of information and facts about fast food, caloric intake, obesity, and obesity-related health conditions, 17% of adults eat at a fast-food restaurant two to three times a week (Alfano 2009). It seems that people commonly do not draw upon, connect, and apply this information to their lives. It would be better, both instrumentally and for its own sake, if more people sought understanding. Thus seeking understanding is not only a virtue for students to possess in an ideal conception of academia, but it is also a virtue that one would want all persons to possess.

The significance of wanting all persons to possess certain virtues extends to the virtue of seeking accurate beliefs. We would want all persons to seek beliefs that accurately represent the world because finding accurate beliefs is a vital component in the accumulation of knowledge. Consider that knowledge, whether provided in academia or elsewhere, is consistently accumulated and passed on to future generations. The passing on of knowledge to future generations is imperative to our development. As Neil Levy points out, “If each generation had to start afresh, we would not still be in the Dark Ages; we could never get near advanced as the Dark Ages” (Levy 2007, 43). I would add that without consistently assessing our knowledge, even if a generation was able to accumulate enough knowledge to be in the Dark Ages, it is likely that much of its

information and facts would be greatly flawed. Knowledge is not static but needs to be continuously developed, accumulated, and assessed. If a person has the motivation and dispositions to seek accurate beliefs, they likely are going to assess and evaluate not only the information and facts presented to them as canon but also their own beliefs and belief systems. That a person has the virtue of seeking accurate beliefs is instrumentally good for its own sake because persons are less likely to pass on inaccurate beliefs (for example, the beliefs that a human being can be the property of others, that skin color is a relevant distinction between human beings, or that women possess inferior cognitive capacities in comparison to men). These beliefs and the systems they belonged to have, over time, been assessed by persons (and students) who sought out ones that more correctly depicted the world. It is significant to think life is better off with accurate beliefs and, as such, it is not only students in academia we want to possess the virtue of seeking accurate beliefs, but all persons.

Therefore, virtues of seeking understanding and accurate beliefs are significant enough to want everyone to possess them, and this is a substantial reason for shaping the ethos of students in academia in regard to them. Moreover, because cognitive enhancers have the potential to impact the world and academia profoundly (for the focus of this research project), this potential is a reason to want these virtues to shape the ethos of students regarding their use.

One possible way to mitigate the negative effects that advances in cognitive enhancers might generate is to emphasize the link that students who use these enhancements have with the ideals of human excellence as a reflection on a student's character. If the general attitudes and sentiments of students are that improper use of

cognitive enhancers reflects poorly on their character, these attitudes are a mechanism to safeguard against the abuse of cognitive enhancers.

3.10.2 Is it Academia's Responsibility to Facilitate the Development of Virtues?

The second concern about this virtues-based institutional rule is that it is not simply shaping students' ethos but that it is actively attempting to develop virtues in students who lack them. The concern is not that these virtues or the development of these virtues in students is bad; rather it is that the development of virtues is too burdensome of a responsibility for academia. Even in an ideal conception of academia as striving to attain understanding, academia has many responsibilities, and the task of developing virtues in students who lack them is simply too much.

I grant that holding academia responsible for the development of virtues is too much of a burden. The development of a virtue ultimately is dependent upon an individual student, and no amount of structuring or social pressure can force a student to develop a virtue if he or she does not want to.⁴⁸ Still, even if academia is not responsible for the development of virtues in students who lack them, it doesn't follow that academia has no role in the development of virtues. Institutions have an active role in developing virtues in persons, as evidenced by Julia Annas, who refers to this as the *embedded context* of virtues: virtues are developed and exercised in "a particular family, city, religion, and country" (Annas 2011, 52). To varying degrees, the environment, community, and institution all have an active role in the development of an individual's virtues. Does this mean that students living in ideal circumstances will always develop virtues? No, because even when living in ideal circumstances, the development of virtues depends upon that

⁴⁸ Slightly amending a common adage captures this sentiment clearly: "You can lead a student to virtue, but you can't make them possess it."

individual, and for a multiplicity of reasons, it might not happen. Conversely, does this mean that individuals living in adverse conditions such as extreme poverty are unlikely to develop virtues? Yes, but as Julia Annas points out,

[I]t is important, though, not to confuse the fact we do not expect virtue here [persons living in extreme poverty], which is reasonable, with the different thought that these people are incapable of virtue. (Annas, 2011, 31)

Although an individual's environment, community, and institution are not sufficient conditions for developing a virtue, they do have a role in developing virtues in an individual.

According to philosophers ranging from Aristotle to the Confucian philosopher Xunzi, education traditionally has been viewed as having the most active role in the development of virtues. In fact, Xunzi argued that it is the role of education that is fundamental in developing an individual (a *gentleman* or *sage* to Xunzi) into the standards of human excellence (Schofer 1993, 123; Tzun 1963a; Tzun 1963b). Human nature, according to Xunzi, is inherently bad because our innate "natural" characteristics lead us to strife and disorder, and it is only through education, which he refers to as "learning," that humans develop better characteristics: "Man's nature is [bad]⁴⁹; goodness is the result of conscious activity" (Tzun 1963d; Robins 2009).⁵⁰ Conscious activity is when "the mind conceives of a thought and the body puts it into action." Yet for Xunzi, it is not mere reflection: "I once tried spending a day in thought but I found it of less value than a moment of study." Instead, conscious activity is "when thoughts have been accumulated sufficiently, the body is well trained, and then action is carried to

⁴⁹ Burton Waton's translation is that "Man's nature is evil." However, many scholars believe that such a translation, while not entirely inaccurate, presupposes a dichotomy between good and evil that misrepresents Xunzi's philosophical thought and Confucian ethical theory in general.

⁵⁰ (CF: Tzun 1963a; 1963b; 1963c; 1963d; Schofer 1993)

completion” (Tzun 1963c, 139-140; Tzun 1963a, 16). Thus conscious activity refers not only to an individual’s motivational structures and dispositions, but it is also considered a means to development these capacities.⁵¹

It is the role of education to develop these capacities through conscious activity.

Education for Xunzi includes:

[T]he studying of texts, practicing ritual, being conscious of good and associating with good and learned people, and concentrating on the qualities of a Confucian sage. (Schofer 1993, 118)

In *Encouraging Learning*, the metaphors of straightening wood or sharpening metal illustrate the active role education has in developing an individual into standards of excellence:

The gentlemen says: learning should never cease. ... A piece of wood as straight as a plumb line may be bent into a circle as true as any drawn with a compass and, even after the wood has dried, it will not straighten out again. The bending process has made it that way. Thus, if wood is pressed against a straightening board, it can be made straight; if metal is put to the grindstone, it can be sharpened; and if the gentlemen studies widely and each day examines himself, his wisdom will become clear and his conduct without fault. (Tzun, *Encouraging Learning* 1963, 15)

For Xunzi, education not only actively develops a person’s capacities but also puts people in the proper environment by surrounding them with others whose ethos reflects the importance of education. The reason is that the ethos of those in education is crucial in the development of human excellence:

[A student] no matter how fine his nature or how keen his mind, must seek

⁵¹ Xunzi provides his complex notion of conscious activity in detail in the following passage: “When the emotions are aroused and the mind makes a choice among them, this is called thought. When the mind conceives of a thought and the body puts it into action, this is called conscious activity. When thoughts have been accumulated sufficiently, the body is well trained, and then action is carried to completion, this is also called conscious activity. When one acts from considerations of profit, it is called business. When one acts from considerations of duty it is called [moral] conduct. The faculty which allows man to have understanding is knowledge. Understanding which is practically applicability is also called knowledge. The understanding, which makes man capable of something, is an ability. Capability which has practiced application is also called an ability” (Tzun 1963c, 139-140).

a worthy teacher to study under and good companions to associate with.
(Tzun, *Man's Nature is Evil* 1963, 170)

In many respects, Xunzi's account of education mirrors this virtues-based approach and the claims of a virtues-based institutional rule shaping the ethos of students. Xunzi's position provides a reasonable basis for holding that academia does have an active role in the development of virtues in students who lack virtues. Since academia has such an active role in the development of virtues in students, then at a minimum, it seems reasonable that academia can also facilitate the development of virtues in students who lack them.

One way for academia to facilitate the development of virtues regarding the use of cognitive enhancers is by instituting a virtues-based rule. A virtues-based rule entails that when students have the chance to use a cognitive enhancer, they will exercise their practical reasoning; if they follow this virtues-based rule, they will act for reasons within the ideals of human excellence. This in turn works not only to shape the ethos of students regarding the use of cognitive enhancers but also to facilitate the development of virtues in that student.

One might wonder if instituting a virtues-based institutional rule really does facilitate the development of virtues in students who lack them. If the development and exercise of a virtue are through practical reasons, then it is reasonable to think that it would. Consider that the developmental process of virtue is often analogized with the development of a skill (Annas 2011). The skill analogy posits that developing a virtue requires training, practice, and time, similar to a skill. This skill analogy not only mirrors developmental notions in both Aristotle and Xunzi's conception of virtues, but it also suggests that the development of virtue can occur in academia parallel to the

development of a student's skill set of reading comprehension, arithmetic, writing, and critical thinking. For academia to achieve, or at least strive to achieve, its goal is to structure academic activities so that they progressively provide students with information of greater depth and progressively attempt to improve this skill set in students. The development and refinement of this skill set does not occur overnight or in a single moment of inspiration, but over a process. For example, a student learns to be a writer by writing, and if this student does it well, then over time he or she becomes a good writer. Similarly, throughout a student's academic career, if he or she continually faces opportunities for using cognitive enhancers, and this student exercises practical reasoning by following a virtues-based institutional rule, then this is a method of facilitating the development of certain virtues. Or if the virtues-based rule is an internalized institutional rule, then academia facilitates the development of virtues by making the use of cognitive enhancers for reasons pertaining to the ideals of human excellence a way of life for a student. In both cases, instituting a virtues-based rule in academia, at minimum, facilitates the development of virtues in students who lack them.

In this ideal conception of academia, it seems clear that even if academia does not have a responsibility to develop virtues in students who lack them, it still plays an active role in the development of virtues. That academia has such an active role in the development of virtues suggests that, at a minimum, it can facilitate the development of virtues in students who lack them.

3.10.3 Students and the Development of Virtues

The final concern is about the relationship between students and the development of these virtues in this virtues-based approach. The value of the ideals of human excellence

or virtues is essential to a virtues-based approach and virtues-based institutional rule. Herein lies the concern: Does a student who lacks virtues have an obligation to develop these virtues? Consider that the conception of virtues I offered contends that virtues are instrumentally beneficial, good for their own sakes, properties that make their possessor an ideal of human excellence, and properties a student should aspire to attain. This virtues-based institutional rule stipulates that the only permissible use of cognitive enhancers is for reasons reflective of these ideals of human excellence. Because of the value of the virtues and their role as the focal point from which permissibility is determined by this virtues-based institutional rule, it is reasonable to infer that a student who lacks virtues may have an *obligation* to develop these virtues.

Although a reasonable inference, the concern is that this virtues-based approach cannot claim that a student who lacks virtues has a moral obligation, in the sense of being *morally required*, to develop these virtues. To argue that a student has a moral obligation to develop these virtues, I would need to have provided a fuller ethical account in respect to conceptions of the right and the good as well a theory of right action.⁵² However, this virtues-based approach has avoided providing a fuller ethical theory and a theory of right action; thus it cannot claim that a student who lacks these virtues is morally required to develop these virtues.

As articulated, concern about this virtues-based approach not providing a fuller ethical theory or theory of right action is in fact consistent with the claims of this virtues-based approach toward enhancement in academia. First, in respect to the ideals of human excellence, it is reasonable to think that there are both moral and non-moral human

⁵² A theory of right action concerns what determines or what properties make an action *morally* right or wrong (Copp 2006).

excellences. I acknowledge that the difference between the moral and non-moral properties of human excellences is not categorical but continuous and assume a clearer division between moral and non-moral human excellences than likely exists.

Nevertheless, it is still reasonable that seeking understanding and seeking accurate beliefs can be taken as non-moral marks of human excellence. This virtues-based approach is not, then, claiming that a student is morally obligated or that to be morally good, a student has to develop these virtues, only that the virtues of seeking understanding and seeking accurate beliefs are non-moral ideals of human excellence.

Second, this virtues-based approach is not offering a theory of right action. In respect to the use of cognitive enhancers in academia, because current institutional rules do not decisively determine the permissibility of using these enhancements, this virtues-based approach asked whether a virtuous student, or one possessing the virtues of seeking understanding and accurate beliefs, choosing to use cognitive enhancers makes the use of cognitive enhancers in academia permissible. I argued that it does, but it is not the virtuous student's possession of these virtues that makes it permissible; rather it is the virtuous student's motivations that make it permissible. The scope of this claim is on the condition of permissible student use of cognitive enhancers, not on virtues or motivation as determining or being properties that make actions morally right or wrong.

Although this virtues-based approach is not a full ethical theory and does not provide a theory of right action, it is reasonable to wonder whether a student who lacks virtues has any sort of obligation to develop these virtues. Although this approach holds the virtues of students as being instrumentally beneficial, good for their own sakes, properties that make their possessor an ideal of human excellence, and properties a student should

aspire to attain, students do not have an obligation to develop them. However, while this approach does not articulate a student as having an obligation to develop these virtues, it is still sensible to hold that a student who lacks virtues *should* develop these virtues.

If we think seeking understanding and seeking accurate beliefs are properties of human excellence and that these properties are conducive for students to attain understanding, then a student who lacks them should develop them. The necessity of the claim that a student who lacks virtues should develop them is in relation to the ideals of human excellence and the goal of academia. If we think that seeking understanding and seeking accurate beliefs are properties of excellence for humans and that the goal of academia is instrumentally beneficial and good for its own sake, then it is conducive for persons to seek it. Considering the kind of creatures humans are—social animals that possess an advanced rational capacity—then seeking understanding and seeking accurate beliefs allow a student to be better able to understand, navigate, and appreciate the world, life's experiences, and their interactions with others, and it is conducive to the goal of academia. These are strong reasons for students to develop these virtues. While this virtues-based approach cannot say that a student who lacks virtues has an obligation, it is still possible for this virtues-based approach to hold that a student who lacks virtues should them, in the sense that it is an ideal human excellence and conducive to the goal of academia.

Nevertheless, the contention that a student who lacks virtues should work to develop them is restricted and constrained in two ways. First, the scope of my claim is extremely narrow, restricted to students in an academic institution and not extended further. Second, according to this virtues-based approach, a student who lacks virtues has done nothing

incorrect or wrong if he or she does not attempt to develop these virtues. To understand how this virtues-based approach can hold that a student who lacks virtues has done nothing incorrect or wrong by not attempting to develop these virtues yet still thinks a student should develop them, consider an analogous case from Buddhism. In Buddhism, two major doctrines are the *Four Noble* and the *Noble Eightfold Path* (Bryom 1976).⁵³ The first and fourth of the *Four Noble Truths* hold that (i) life is suffering and (ii) the path to the cessation of suffering is the *Noble Eightfold Path*.⁵⁴ If a person wants to end suffering, then it is necessary for them to follow the *Noble Eightfold Path*; yet a person is not required to do so or wrong if he or she does not follow the eightfold path. Instead, this person has not taken the first step toward the cessation of suffering.

Similarly, seeking understanding and accurate beliefs are properties of human excellence and conducive for students in academia. The development of these virtues is something that a student who lacks virtues should seek to do. Yet students who lack virtues have not done anything incorrect or wrong if they do not attempt to develop these virtues. Instead, they have not taken the steps to develop properties that are ideals of human excellence and conducive to the goal of academia. Although these students might not be successful, according to this virtues-based approach, they have done nothing wrong.

Although this final concern is accurate in that this virtues-based approach cannot claim that a student has an obligation to develop these virtues, it is reasonable that this

⁵³ The Four Noble Truths: 1. Life means suffering. 2. The origin of suffering is attachment. 3. The cessation of suffering is attainable. 4. The path to the cessation of suffering. The Noble Eightfold Path: 1. Right View 2. Right Intention 3. Right Speech 4. Right Action 5. Right Livelihood 6. Right Effort 7. Right Mindfulness 8. Right Concentration

⁵⁴ As a theory of conduct, the Noble Eightfold Path encompasses principles for guidance in respect to wisdom (taken as proper understanding of the cause of suffering), ethical conduct, and mental development (proper orientation of one's mental outlook).

virtues-based approach can at least claim, albeit in a restricted and constrained sense, that students who lack virtues should develop them because they are ideals of human excellence and conducive for students in academia to possess.

In responding to this final concern about this virtues-based approach's claims concerning the relationship between the virtues and students, as well as the accompanying concerns of this virtues-based approach not being a full ethical theory or providing a theory of right action, I have shown that this virtues-based approach scope is focused on enhancement in academia and makes rather modest claims. There still may be a concern that approaching enhancement in academia from a virtues-based approach is still too radical. However, consider another approach taken in regard to enhancement, Julian Savulescu, Anders Sandberg, and Guy Kahane's welfarist approach (Savulescu, Sandberg and Kahane 2011; Kahane and Savulescu 2009). In this approach, issues of human enhancement are best understood in respect to human well-being.

Welfarist definition of human enhancement: Any change in the biology or psychology of a person which increases the chances of leading a good life in the relevant set of circumstances. (Savulescu, Sandberg and Kahane 2011, 16)

For the welfarist approach, it is permissible for persons to use enhancements for reasons of maximizing their well-being, allowing them to live a good life. Relying on Rawls and Buchanan's notion of "all-purposes goods," this welfarist approach claims that there are traits of persons that are valuable regardless of the kind of life a person wants to live.

Intellectual capacities are one such all-purpose good (Savulescu, Sandberg and Kahane 2011, 11).⁵⁵ In respect to issues of enhancement in academia, a welfarist approach would

⁵⁵ The works that Julian Savulescu, Anders Sandberg, and Guy Kahane's relied on for positional goods were those of Allen Buchanan, Dan W. Brock, Norman Daniels and Daniel Wikler, and John Rawls (Allen Buchanan, et al 2000; Rawls 1999).

hold that it is good for student well-being to have their cognitive capacities enhanced because even moderately augmenting a student's intellectual capacities may help the student to live a good life.

Yet this welfarist approach would also agree that other issues such as health risks, particular academic institutions, impact on student attitudes, and other relevant considerations all need to be factored in. In this respect, both the welfarist approach and the virtues-based approach I have offered are similar in that student use of cognitive enhancers requires all considerations to be accounted for and, often enough, there are strong reasons against certain students using cognitive enhancers. The difference between this welfarist approach and the presented virtues-based approach is that the welfarist approach takes consequences as the main consideration for determining permissibility, whereas this virtue-based approach does not. My point is not that a virtues-based approach is superior to Savulescu, Sandberg, and Kahane's welfarist approach or that their approach is wrong, but rather that their approach and this virtues-based approach can be understood as illuminating different aspects and ways of grasping a normative account of enhancement. It might turn out, and this virtues-based approach would then agree, that if the use of enhancements always leads to people living a better life, then we should always use enhancements. Alternatively, it might turn out (and Savulescu, Sandberg, and Kahane's welfarist approach would likely agree) that if the use of enhancements always leads people to develop terrible dispositions or character, then we shouldn't use these enhancements.⁵⁶ Therefore, although this virtues-based approach and

⁵⁶ Ingmar Persson and Julian Savulescu have argued that rather than focusing on cognitive enhancement, the focus of the future development of enhancement technology should be on *moral enhancement technologies*. These moral enhancement technologies focus on augmenting the moral character of humanity. However, many, most notably John Harris, disagree with Persson and Savulescu's position. I

the welfarist approaches do differ, a virtues-based approach is no more radical than a welfarist position because both are attempting to illuminate different aspects and ways of understanding an account of enhancement.

In this chapter, this virtues-based approach has attempted to put forward a framework for the permissibility of student use of cognitive enhancers in academia as well as to formulate institutional rules for governing student use of cognitive enhancers in academia. This virtues-based approach makes an effort at appropriately balancing the value of academia and cognitive enhancers in respect to considerations of rules, consequences, and motivations. The approach does advance the discussion of enhancement in academia by focusing issues of enhancements in academia on the motivations and character of students in academia.

Moreover, I argued that the goal of academia should be interpreted in respect to understanding and that a virtues-based approach can formulate strong institutional rules for governing student use of cognitive enhancers in academia. This virtues-based rule can be instituted in two ways that shape the ethos of students in respect to the use of cognitive enhancers in academia. Used either way, this rule shapes the ethos of students regarding the use of cognitive enhancers such that students regard the use of cognitive enhancers in the same manner that virtuous students do.

One might contend that even if this virtues-based approach were to work in ideal theory, the fact that certain idealized conditions no longer hold suggests that the approach fails under non-ideal conditions. I think, however, that the challenges are incorrect. In fact, the advantage of a virtues-based approach is that while the virtues are something to

agree with Harris' argument that Persson and Savulescu fail to consider that *education* is the greatest moral enhancement for humanity (Persson and Savulescu 2008; Harris 2011).

aspire to, they are also practical. According to Xunzi, a mark of good theory is its ability to be implemented into our practices:

One may sit down and propound such a theory, but [if] he cannot stand up and put it into practice, nor can he extend it over a wide area with any success. How, then, can it be anything but erroneous? (Tzun *Man's Nature is Evil* 1963, 163)

In the following chapter, this research project moves from ideal into non-ideal theory and provides further details on a virtues-based institutional rule being implemented in academic institutions existing under non-ideal conditions.

Chapter 4 Ideals of Human Excellence in a Non-ideal World

4.1 Non-ideal Conditions

This research project now moves from ideal into non-ideal theory. The virtues-based institutional rule formulated and defended in the previous chapter was within a conception of academia existing under idealized conditions. By moving into the realm of non-ideal theory, the focus shifts to this rule being implemented in a conception of academia that exists under “less than happy” conditions (Rawls 1999, 216).

A non-ideal conception of academia exists under the following non-ideal conditions. First, while this conception of academia is still modeled on existing institutions in the United States, these academic institutions operate under social conditions that are not always fair and reasonable. One of these non-ideal social conditions is that for many people, the goal of academia is not to attain understanding but for commercial or economic placement of students. Second, in these academic institutions, students do not possess ideal psychological dispositions but rather a range of psychological dispositions⁵⁷—from never virtuous to occasionally vicious—so that students are not always compliant with institutional rules.

The first aim of this chapter is to examine the implementation of this virtues-based institutional rule in a non-ideal conception of academic institutions and students. Even under non-ideal conditions, this virtues-based institutional rule could govern and guide student use of cognitive enhancers in a way that relies on considerations of motivations and character. Offering a way for motivation and character of students to be relevant

⁵⁷ I use the term “psychological dispositions” as an attempt to indicate that these students do not possess virtues or even character traits.

considerations in non-ideal environment results in shaping how students think about the use of enhancements; this is a reason for administrators, faculty, and staff working in academia to consider implementing this virtues-based rule in current academic institutions. Moreover, this virtues-based approach and institutional rule not only is able to handle misconceptions resulting from the medicalization of cognitive enhancers and to shape the way students think about the use of enhancements, but they also resist oversimplification of the issues and considerations regarding enhancement in academia.

Before beginning, I need to stipulate what this chapter's aims are not. First, this chapter is not arguing that this virtues-based institutional rule is the only or most feasible institutional rule to implement for governing student use of cognitive enhancers. Relying on the ideals of human excellence does not yield a single determinate answer for issues of enhancement in academia. Nevertheless, I suggest that the complexity of issues in enhancement in academia is such that we need to resist oversimplification. In the end, that the ideals of human excellence do not yield a single determinate answer *is an advantage* of a virtues-based approach and institutional rule. It is not just that academic institutions, administrators, faculty, and staff would want students to use enhancements in the permitted ways; they would want students to have the right reasons for using them.

Second, while a central focus of this chapter is the character of students, this research project is not attempting to settle the psychological and philosophical questions regarding the existence of character and character traits. For this virtues-based institutional rule, a conception of character helps to explain the reasons why students act in certain ways in particular situations. While I think that character and character traits do exist, the

conception of character offered in this chapter is not an argument for conclusively establishing their existence.

This chapter brings to a close the examination of this virtues-based approach and institutional rule in ideal and non-ideal theory. This research project clearly allows for motivation and character to be relevant considerations that can govern student use of cognitive enhancers. Implementing this virtues-based institutional rule likely will change the way that students think about the use of enhancements. It offers a sensible and mature approach to issues of enhancement in academia.

To achieve these aims and bring this research project to a conclusion, the following section begins with an examination of the general perception that most people have as being the goal of academia.

4.2 The Goal of Academia

Many people in the United States do not consider the goal of academia to be attaining understanding. Instead, the general perception among people is that the goal of academia is commercial or economic in nature; specifically, the goal is to expose students to the arts, sciences, and humanities to develop their intellectual capacities to secure future employment.

There are several reasons this perception of the goal of academia is so prominent. First, the environment in most contemporary academic institutions is thoroughly competitive. This competitive environment is for students *and* faculty. The structure of undergraduate and graduate education is competitive: students in undergraduate courses are assessed against an accepted standard and against other students; graduate students are assessed against an accepted standard and other graduate students, and they must also

compete for funding and mentorship from faculty. The hiring and work structure of faculty in academia is also competitively structured: positions are divided into tenure and non-tenure tracks. This competitive structure reinforces, even if indirectly, the opinion among many students and people outside of academia that the goal of academia is not really about attaining understanding but is a competitive endeavor about securing future employment.⁵⁸

Moreover, academia has policies that encourage the perception that commercial or economic considerations are prioritized in academia. These policies include but are not limited to the promotion and emphasis on research and grant programs that are most economically beneficial for the institution; the creation of ties with corporations and businesses through fellowships and internships; and most explicitly, the selling of merchandise, licensing, and television rights for an academic institution's athletic programs. Policies that emphasize commercial and economic considerations are found even in departments in the arts and humanities, not just in athletics and the sciences.

Consider that a department that does not develop or retain a certain number of majors or

⁵⁸ It is easy to illustrate the failures in academia that are a result of this competitive structure by examining academic philosophy. To get tenure, an individual first must have a tenure-track position and second needs time for research to produce a certain amount of quality publications. For this individual in a tenure-track position to do their research, this person cannot be teaching a full load of classes. An academic institution then hires lecturers (non-tenure-track teaching positions) or uses graduate students to teach undergraduate courses. Most lecturer positions are low paying and not tenure track. Many lecturers also want to get tenure-track positions and, on top of teaching undergraduate courses, are attempting to do their own research to secure a tenure-track position. If a graduate student is teaching either to keep their funding or to get a future job, they must also engage in their own research, which means that at a certain point, many graduate students must decide to focus on teaching or researching.

Now consider all this from the perspective of undergraduate students. Most undergraduate students only encounter tenured faculty for one or two classes late into their academia career. The majority of undergraduate students' education in philosophy is learned from lecturers and graduate students. Most tenured faculty, lecturers, and graduate students in philosophy have never had any formal training in the art and methods of teaching. Moreover, in academic philosophy there is a prevailing interest in not teaching philosophy to undergraduate students but rather to "engage and grapple with theoretical problems at a higher level that might have no practical implications." Although not all faculty, lecturers, graduate students, and departments in philosophy hold this view, most do.

number of Ph.D. students in a program faces severe budgetary constraints for future development. Striving to retain a certain number of majors and, specifically, Ph.D. students leads departments to recruit students despite a complete lack of future employment. Consider the state of affairs in philosophy and the subsequent recruitment of Ph.D. students. Philosophy is in the midst of its worst job market in the last fifty years. Many research-one philosophy departments openly recruit students into Ph.D. programs even though students' chances of getting a job are minuscule.⁵⁹

For all of these reasons and likely more, the perception that the non-ideal goal of academia is commercial or economic in nature has proliferated. Whether accurate or not, the perception works against implementing this virtues-based institutional rule because in some instances, following this rule conflicts with this goal. If the goal of academia is for commercial or economic placement, then there are motivations for using cognitive enhancers such as to competitively beat other students, which would be consistent with this goal but would not be permitted under a virtues-based institutional rule. A virtues-based institutional rule, then, does not allow competitively beating other students as a permissible reason for using cognitive enhancers.

To respond, consider that institutions can have multiple goals. Take, for example, the National Football League (NFL). The NFL can have goals commercial or economic in nature, such as being a profitable business, as well as an ideal of human excellence, the athletic excellence of the game of football. The NFL certainly meets its commercial or economic goal of being a profitable business since the average NFL football team is worth \$1.4 billion dollars (Badenhausen 2011). Yet the NFL strives to achieve an ideal

⁵⁹ This is particularly disturbing because the number of Ph.D.s on welfare has increased substantially, but acceptance into Ph.D. programs has not declined (Patton 2012).

goal of human excellence in the game of football. The NFL achieves, or at least strives to achieve, this goal by implementing certain guidelines, rules, and codes for both the on- and off-field conduct of its players, coaches, and owners.⁶⁰ Even if these guidelines, rules, and codes inhibit some profit, they work to preserve the ideal of excellence in the game of football. The NFL is illustrative of an institution that has both economic and ideals of human excellence goals.

It is reasonable to take academia as another institution that has the goals of commercial or economic placement of students *and* ideals of human excellence. Academic institutions do exist under non-ideal conditions and, by virtue of the market system, it is sensible that commercial or economic placement of students is one goal. Yet it is not clear as to how the goal of attaining understanding is inconsistent with the goal of commercial or economic placement of students. Understanding is an ideal of human excellence that students should seek to attain, but understanding as an element in one's intellectual capacities is also important in a commercial or economic system. As Anders Sandberg and Julian Savulescu argue,

Cognition [taken as intellectual capacities] is both a consumption good—it is often desirable and happiness promoting to have well-functioning cognitions—and a capital good that reduces risks, increases earning capacity, and forms a key part of human capital. (Sandberg and Savulescu 2011, 96)

Developing one's intellectual capacities to attain understanding rather than simply obtain knowledge is valued not only for its own sake but also for instrumental benefits like securing future employment. Simply knowing information and facts but not connecting, drawing upon, and applying these facts results in people who have a mental outlook

⁶⁰ For example, players cannot use banned substances or modify their equipment; team owners are prohibited from spending unlimited amounts of money on recruiting players; and trades between teams are only valid when done within a sanctioned time period and under certain financial limits.

similar to that of a psychopath. The goal of developing students' intellectual capacities and attaining the ability to connect, draw upon, and apply information and facts to one's experience is a goal of academia that would also be consistent with the goal of commercial or economic placement of students. Thus academia can be understood as having these two goals.

While these are the two goals of academia, it is reasonable to think that attaining understanding is the primary goal and commercial or economic placement of students is the secondary goal. Generally speaking, while commercial or economic placement of students is an important goal, having the ability to connect, draw upon, and apply information and facts to one's experience is a particular characteristic to want in employees. A remark attributed to Warren Buffet illustrates this:

Somebody once said that in looking for people to hire, you look for three qualities: integrity, intelligence, and energy. And if they don't have the first, the other two will kill you. You think about it; it's true. If you hire somebody without the first, you really want them to be dumb and lazy.

Understanding as an ability is not only important to have in an employee, but it also plays a key role in other elements of a commercial or economic system. There is some empirical evidence in social psychology that persons involved in commercial or economic transactions are often not content if these transactions are not fair to other parties involved, even while financially beneficial to themselves. In addition, economic studies have shown that an increase in income does not correlate to an increase in happiness (Tabibnia, Satpute and Lieberman 2008; Easterlin 1974; Easterlin 1994). So in general, even if one goal of academia is commercial or economic placement of students, it is likely more important that academia assists in achieving, or striving to achieve, the second goal of attaining understanding.

With regard to student use of cognitive enhancers, there are reasons for thinking that the primary goal of academia should be attaining understanding because it offers an in-principle limitation on the use of enhancements in a way that the goal of commercial or economic placement of students does not. Consider that by virtue of pharmacology, the use of cognitive enhancers does not directly enable a student to attain understanding. This suggests an in-principle limitation on students using them. Although the use of cognitive enhancers has been shown to augment moderately an individual's capacities of focus and concentration, these enhancers cannot, at least by themselves, enable a student to achieve or attain understanding. Moreover, student use of cognitive enhancers has not been shown to provide long-term improvement in academic activities (Smith and Farah 2011; Enck, Bossaer and Enck Forthcoming 2013).

If commercial or economic placement of students was taken to be the primary goal of academia, then the use of cognitive enhancers might not be considered an educational tool or prop assisting or supporting in the development of understanding; instead, cognitive enhancers might be considered as a tool or prop assisting or supporting productivity. The key feature of cognitive enhancers might not be that they can moderately enhance the capacities of concentration and focus but that these enhancements provide alertness and wakefulness to those who are sleep deprived. When a person is sleep deprived their performance drops; typically, an individual's ability to perform certain tasks decreases 30 to 45 percent after the first night of sleep deprivation and 50 to 70 percent after a second night of sleep deprivation (Angus and Heslegrave 1985). With the goal of academia taken to be commercial or economic placement of students, cognitive enhancers are likely to be considered as tools or props for assisting a

student in gaining future employment because they provide elevated levels of alertness and wakefulness.

However, taking this as the primary goal of academia faces two problems. Similar to the common misconception that cognitive enhancers always directly augment cognition, the first problem is that alertness and wakefulness are not the same as being productive. While cognitive enhancers can assist students with being alert and awake, this does not mean that the student is engaged in academic activities rather than socializing, partying, or playing video games. Moreover, it does not mean that because a student is alert, awake, and focused on an academic activity that the student definitely comprehends that academic activity.

The second problem is that cognitive enhancers are a schedule II drug. The risks involved with using these cognitive enhancers range from emotional and aggressive behavior, anxiety, and insomnia to depression, addiction, and withdrawal (Seppala and Rose 2010). If the use of cognitive enhancers is to assist and improve a student's level of alertness and wakefulness, then there are pharmacological agents or mechanisms available that are far less risky.

Understanding is an essential characteristic for persons to have in a market system, and attaining understanding has an in-principle limitation on student use of cognitive enhancers. These are reasons for holding that even under non-ideal conditions, the primary goal of academia should be attaining understanding and the secondary goal should be commercial or economic placement of students.

Taking attaining understanding as the primary goal of academia works to orient institutional rules for governing student use of cognitive enhancers and orienting students

themselves toward the proper goal of academia. If attaining understanding is the primary goal of academia, then no conflict would occur if students were to follow this virtues-based institutional rule.

In addition, while an academic institution does not have a responsibility to ensure that students actually attain understanding, an academic institution does have the responsibility to implement institutional rules that facilitate students in striving toward this goal. Taking the primary goal of academia as attaining understanding is more likely to result in cognitive enhancers being considered as an educational prop or tool. If this is the case, then it is important that when students use these cognitive enhancers as educational props or tools, they are using them for the right reasons. This virtues-based institutional rule is at least one institutional rule that not only facilitates academia's goal of attaining understanding but also works toward ensuring students use these cognitive enhancers for the right reasons.

However, even if attaining understanding is the primary goal of academia and a virtues-based institutional rule does facilitate that cognitive enhancers are used for the right reasons, students are not idealized, virtuous students. In the current concept of academia, students do not possess the psychological dispositions of ideal, virtuous students and, in many cases, they are not always compliant with institutional rules. In the following section, I consider the challenge posed to this virtues-based institutional rule by non-ideal students.

4.2.1 The Challenge of Non-ideal Students

The challenge for this virtues-based institutional rule is that students do not possess the psychological dispositions of an ideal, virtuous student, and they are not always

compliant with institutional rules. That students in this concept of academia are not ideal may suggest to some that it is implausible for this virtues-based institutional rule to be implemented in non-ideal theory. This further implies that because this virtues-based institutional rule cannot be implemented in non-ideal theory, it is not likely to be any help to academic institutions, administrators, faculty, and staff currently working in academia.

To begin, it is reasonable to grant that a virtuous student has never existed and that students in academia in non-ideal theory could never be virtuous. Moreover, it is also reasonable to acknowledge that whether a person exists in non-ideal theory or in the actual world, no person is ever an ideal of human excellence or virtuous. Yet the fact that students in this conception of academia do not possess the psychological dispositions of an ideal, virtuous student and that they are not always compliant with institutional rules *are the reasons* for academia to implement this virtues-based institutional rule. This virtues-based institutional rule has three elements—ideals of human excellence, motivation, and character— that would be particularly useful in governing and guiding non-ideal students. In the following sections, I examine each of these elements, beginning with the ideals of human excellence, in respect to non-ideal students.

4.2.2 Ideals of Human Excellence for Students

By stipulating that the permissible use of a cognitive enhancer is for reasons of seeking understanding or seeking accurate beliefs, this virtues-based institutional rule provides students with ideals of human excellence to aspire to and strive towards. Students should aspire towards attaining the virtues of seeking understanding and accurate beliefs because they are ideals of human excellence. It does not follow that if students are unable to attain these virtues, then these ideals of human excellence are any

less aspirational. First, since students do not possess the psychological dispositions of an ideal, virtuous student and are not always compliant with institutional rules, the importance of the ideals of human excellence is that they designate what an ideal, virtuous student would be like, such as, at a minimum, possessing the virtues of seeking understanding and seeking accurate beliefs. By designating the virtues of an ideal, virtuous student, this virtues-based institutional rule provides a goal or model for non-ideal students to aspire towards.

The importance of having an ideal person as a goal or model to aspire towards is illustrated by Abraham Lincoln's response to the question of whether it was better to consider George Washington as perfect or fallible:

Let us believe, as in the day of our youth, that Washington was spotless: it makes human nature better to believe that one human being was perfect: that human perfection is possible. (Whitney 1892, 45-46)

The value of students aspiring towards these ideals of human excellence is not only that these virtues are instrumentally beneficial and good for their own sakes, but that by undertaking the process of developing these virtues, students will find them good and instrumentally beneficial even if they cannot fully attain these virtues. Students, in fact all people, fall short of perfection; yet students need ideals of excellence to aspire and strive towards, even if they cannot be attained.

A map of the world that does not include Utopia is not worth even glancing at, for it leaves out the one country at which Humanity is always landing. And when Humanity lands there, it looks out, and, seeing a better country, sets sail. Progress is the realisation of Utopias. (Wilde 2007, 247)

That these non-ideal students lack the psychological dispositions of an ideal, virtuous student and are not always compliant with institutional rules can be considered reasons to implement this rule in non-ideal academic institutions. Although it is unlikely for these

non-ideal students to attain these ideals of human excellence or virtues, this does not mean that these ideals of human excellence are not aspirational or not worth striving toward.

4.2.3 Motivations of Non-Ideal Students

Another reason for academia to use this virtues-based institutional rule is that it offers a standard for using cognitive enhancers. Generally speaking, good reasons for using cognitive enhancers are for self-improvement, seeking understanding, or seeking accurate beliefs. These reasons are not only conducive to the goal of academia, but they are also comparably better reasons for a student to use cognitive enhancers than for reasons of competitively beating other students, completing a boring activity, or obtaining a certain grade on a particular assignment. Since students do not possess ideal psychological dispositions and are not always compliant with institutional rules, these students are not likely to use cognitive enhancers for good reasons. This virtues-based institutional rule brings to the student's attention that there are good reasons for using cognitive enhancers and offers a standard of good reasons for these students to rely on. Moreover, even if this standard for using cognitive enhancers, composed of reasons reflective of the ideals of human excellence, does not help a student decide whether his or her motivation is permissible, this virtues-based institutional rule provides the ethical outlook of a virtuous student as a guide to a non-ideal student.

One might think that adopting the ethical outlook of a virtuous student cannot be helpful to these students since they do not possess ideal psychological dispositions. Yet the students' lack of ideal psychological dispositions would be a reason for advocating an institutional rule that promotes adopting an ethical outlook. This ethical outlook attempts

to find resolutions to a dilemma of whether or not to use a cognitive enhancer by considering the question of permissibility directly and in respect to the acts and motivations of an ideal, virtuous student in that situation. To think either that adapting this ethical outlook couldn't help a student because this student does not have an ideal psychological disposition or that this ethical outlook is silly because a virtuous student wouldn't be in this position misunderstands what this ethical outlook attempts to provide to students. As Rachana Kamtekar points out:

Critics who complain that this is useless advice because Socrates or Zeno wouldn't be in these circumstances or because if one could figure out what Socrates or Zeno would do, then one wouldn't need to think of their response at all are missing the point. Socrates and Zeno also find themselves in difficult situations (in love with Alcibiades, shipwrecked), and thinking of Socrates or Zeno or whoever else can put one in mind of possibilities for action that wouldn't otherwise have occurred to one. (Kamtekar 2004, 487)

The ethical outlook of a virtuous student allows for non-ideal students to find a solution to whether or not to use a cognitive enhancer from a perspective they likely would not have considered before.

By offering a standard of good reasons against which to use cognitive enhancers as well an ethical outlook for helping students to clarify their reasons for using cognitive enhancers, this virtues-based institutional rule assists non-ideal students to possess, or at least to know, the right reasons for using cognitive enhancers.

4.2.4 Character of Non-Ideal Students

According to this virtues-based institutional rule, choosing to use cognitive enhancers for reasons pertaining to the ideals of human excellence rather than for other reasons is reflective of a student having good character. In respect to the use of cognitive enhancers, this rule provides a way for non-ideal students to understand that the use of enhancements

reflects on their character. By linking the use of cognitive enhancers to a student's character, this virtues-based institutional rule holds that a student's reason for choosing to use an enhancement illuminates the sort of character they possess. That these students' psychological dispositions are not ideal means that if this virtues-based institutional rule is implemented, then these students could eventually come to understand that although certain acts may be beneficial in the moment, these acts can damage their character in the long term.

This virtues-based institutional rule's three elements—the ideals of human excellence, motivation, and character—function in a manner that makes this rule prudent to implement in a conception of academia where students are not ideal. Now consider that if this virtues-based institutional rule that creates an expected pattern of behavior were implemented, then it would likely shape the ethos of non-ideal students.

If this virtues-based institutional rule was implemented as an institutional rule that creates an expected pattern of behavior, then this rule not only provides a standard for these non-ideal students to use cognitive enhancers but also provides an expectation that at least one reason that students have for using cognitive enhancers is reflective of the ideals of human excellence. Moreover, the expectation is that the use of cognitive enhancers by other students is also motivated by reasons of self-improvement, seeking understanding, or seeking accurate beliefs. This virtues-based institutional rule is likely to result in being taken as a group norm with the establishment of carry-over behavior for students. According to Daniel Feldman, carry-over behavior results from the establishment of a formal or informal group norm:

Such carry-over of individual behaviors from past situations can increase the predictability of group members' behavior in new settings and

facilitate the task accomplishment. For instance, students and professors bring with them fairly constant sets of expectations from class to class. As a result, students do not have to relearn continually their roles from class to class; they know for instance, if they come in late to take a seat quietly at the back of the room without being told. Professors also do not have to relearn continually their roles, they know for instance not to mumble, scribble in small print on the blackboard, or to be vague when making course assignments. (Feldman 1984, 52)

This virtues-based institutional rule provides carry-over behavior for students. In thus providing an expected pattern of behavior and motivations structured and developed by the ideals of human excellence, the rule likely would change even non-ideal students' ethos regarding the proper use of cognitive enhancers. The ethos of these non-ideal students would, in time, come to regard a student who uses cognitive enhancers for reasons not reflective of the ideals of human excellence with disdain and as having poor character. These non-ideal students would also come to regard a student who uses cognitive enhancers for reasons that are reflective of the ideals of human excellence as reflective of good character and as the kind of student wanted by other students and academic institutions.

If this virtues-based institutional rule were an internalized institutional rule, while these students may not initially possess the psychological dispositions of an ideal student and may not always comply with institutional rules, they could change over the course of an academic career. These non-ideal students come to appreciate the importance of seeking understanding and seeking accurate beliefs as the necessary reasons to have when using a cognitive enhancer. Moreover, this virtues-based institutional rule shapes the ethos of all non-ideal students so that there is not only an expectation for student behavior but also an emphasis on the use of cognitive enhancers as being indicative of a student's

character. The ethos of these students would regard the improper use of cognitive enhancers by another student as evidence of the type of character ill-suited for academia.

However, there will be three challenges in implementing this virtues-based institutional rule in the non-ideal conception of academia. First, this rule may shape the ethos of students by developing and structuring the motivations of students, but it relies too heavily on the notion that students will refrain or restrain themselves from using cognitive enhancers for certain reasons because of how it would reflect on their character. Character is something students accumulate through their actions, but it is not something that regulates their actions. Second, a student's motivation—the condition that determines whether their use of cognitive enhancers is permissible — is not readily accessible or easily identifiable to academic institutions, administrators, faculty, and staff. This means that a student's motivation cannot be a relevant consideration and also cannot be the condition that determines permissibility. Finally, even if motivations and character are considered as relevant considerations for assessing student use of cognitive enhancers, there is no manner in which academic institutions, administrators, faculty, and staff could enforce this virtues-based institutional rule.

I address these challenges and, in doing so, offer more details on this virtues-based institutional rule working in a non-ideal conception of academia and in currently existing academic institutions.

4.3 Character and Students

According to this virtues-based institutional rule, the use of a cognitive enhancer is an action that reflects on the character of a student. This virtues-based institutional rule relies on a conception of character that is an active element of a student's practical

reasoning. Yet conceptually, character is something that accumulates over the course of a person's life, or in this case a student's academic career, via her actions, but it is not something that refrains, restrains, or motivates a student to act in certain ways.

To respond, I think it is possible to consider a student's character as having more of an active role in a person's practical reasoning than one would typically think because character is often a reason for acting. To begin, let's investigate character and reason-responsiveness. Conceptually, character is the representation of a person's non-mortal worth. A person's character is not only an individual composite of all her properties and qualities, it is also something that is constituted by an individual's previous choices, attitudes, behaviors, and values.⁶¹ This suggests that at a certain point, an individual takes *an active role* regarding certain choices, attitudes, behaviors, and values. Under normal conditions, it makes no sense to hold that a person did not have an active role in the sort of character he possesses.

Now it might turn out that a person is not completely responsible (possibly legally or morally) for their character. For example, an individual growing up in abhorrent conditions involving extreme child abuse is a consideration that mitigates her responsibility for the sort of person she has become. Yet even in these cases where an individual is not responsible for the sort of person he is, it does not necessarily mean that this individual was completely passive or inactive in his choices, attitudes, behaviors, and values. A person does have an active role, even if minimally, in the formation of his character.

⁶¹ That a person's character is constituted by their choices, behaviors, and values is why this conception is analogous to the philosophical notion of "self," which furthermore spans across issues of self-conception, autonomy, agency, and practical identity (Bratman 2000; Korsgaard 2009; Velleman 1997).

Next, as I have assumed throughout this research project, it is plausible to hold that persons are *reason-responsive*, meaning that a person is responsive to a broad range of rational consideration (McKenna 2009).⁶² In respect to practical reasoning, a person deliberates on undertaking certain acts, is responsive to a broad range of rational considerations, and then undertakes a certain act. If a person has an active role regarding her character and is reason-responsive, then it is sensible to think that persons often do act for *reasons of character*. In other words, character can be at least one kind of rational consideration in a person's practical reasoning.

A person might refrain from or do certain acts because of how these acts affect their character. Consider that it is for reasons of character that a person refrains from acting in certain ways such as laughing at someone's tragedy or spitting on the grave of an enemy, even though these are permissible. To laugh at tragedy or spit on the grave of an enemy is an act that reflects poorly on an individual's character and, in turn, this is a reason against doing it. Alternatively, it is for reasons of character why a person does act in certain ways such as helping an elderly person across the street or being magnanimous to one's enemy, even though these are not required. To display compassion and magnanimity reflects well on a person's character and is a reason for doing it.

All things considered, a person's character is something of value. A person with poor character is often not only despised or pitied but also not considered to be the sort of person who possesses the attitudes, behaviors, and values that an individual should want.

⁶² Reason-responsiveness is typically considered in respect to the metaphysical debate concerning free will and determinism and relates to one account of compatibilism put forward by John Martin Fischer and Mark Ravizza. This conception of reason-responsiveness focuses on the metaphysics of a responsibility and control even under deterministic conditions. While this project's use of reason-responsiveness could be taken as a subspecies of this conception of reason-responsiveness, because my project's focus is not on metaphysics, all that is necessary for a person to be reason-responsive is simply to be responsive to a broad range of rational considerations (Fischer and Ravizza 1998; McKenna 2009).

Conversely, a person with good character is admired and possesses the sort of attitudes, behaviors, and values that an individual should want.

That a person values good character, or at least does not want to have poor character, makes it plausible that character can be thought of as regulating, even if in a limited way, a person's acts and behavior in a particular circumstance. However, some may consider this conception of character as deviating too far from the notion of character as being a representation of a person's non-mortal worth. To alleviate this apprehension, I acknowledge that ascription of good character cannot be accurately done from observation of a single act. Just as in the case of virtues, a single act does not clearly indicate whether a person has a good or bad character. So there needs to be caution about ascribing character to persons because of their act or particular action.⁶³ Yet while people often do incorrectly ascribe character from a single act, this does not mean or provide conclusive evidence persons are not active about their choices, attitudes, behaviors, and values or have reasons relating to their character for acting in certain situations.

If we return to examining a virtues-based institutional rule in academia, it becomes clear how this institutional rule relies on character to refrain, restrain, or motivate a student to use cognitive enhancers in the proper way. The use of cognitive enhancers for reasons that are not reflective of the ideals of human excellence reflects poorly on character, providing a reason for students to refrain from using cognitive enhancers in this way. Because using cognitive enhancers for reasons reflective of the ideals of human excellence is indicative of a student having a good character, it is a reason for a student to

⁶³ Incorrectly ascribing character to persons is a key element to the situationalists, such as Gilbert Harman and John Doris, who hold that such things as character and character traits do not exist (Harman 2000; Doris 2002; Doris 1998).

use cognitive enhancers in this way. Character in this limited way can sensibly be understood as regulating the acts of students.

4.4 Motivations as Relevant Consideration and Permissibility Condition

The second challenge is that because a student's motivation is not readily accessible or easily identifiable, this virtues-based institutional rule's reliance on motivation is a problem. Academic institutions, administrators, faculty, and staff cannot look at a student's assignment and ascertain if a student used a cognitive enhancer while working on it. Even if it was known that a student used a cognitive enhancer, it is difficult to determine motivations. For example, a student could tell administrators, faculty, and staff that the cognitive enhancers were used for reasons reflective of the ideals of human excellence, but that student could simply be deceptive about his actual motivations. Alternatively, a student could tell administrators, faculty, and staff that he used cognitive enhancers for reasons reflective of the ideals of human excellence when the student could be genuinely and unintentionally unaware of his actual motivations. Therefore, by not being readily accessible or easily identifiable to academia, a student's motivation cannot be a relevant consideration or the condition that determines a permissible use of a cognitive enhancer, and, therefore, this virtues-based institutional rule *cannot* work in non-ideal theory.

To respond, one reasonable assumption is that students do have motivations for acting in general and do have motivations for using cognitive enhancers in particular. Because students have reasons for using cognitive enhancers, although they are not readily accessible or easily identifiable, it seems that motivations are still at least one consideration in an evaluation of a student's use of enhancements. To understand the

extent of motivation's role as a consideration, there needs to be an assessment of two questions: If a person's motivation is not readily accessible or easily identifiable, can it be considered a relevant consideration? If a person's motivation is not readily accessible or easily identifiable, can it determine the permissibility of an action?

In respect to both questions, the answer is yes. Consider that although a person's motivation is not readily accessible or easily identifiable, it is still a relevant consideration in the United States' legal system.⁶⁴ A person's motivation is the consideration used to determine whether an individual is charged with first-degree murder instead of second-degree murder or is charged with felony drug possession instead of misdemeanor drug possession. The difference between being charged with first-degree murder and second-degree murder depends upon whether a person had the intent (motivation) to kill another person. For drug possession, the difference between being charged with a misdemeanor and felony depends upon whether a person had the intent (motivation) to sell or distribute illegal drugs. Therefore, although a person's motivation might not be readily accessible or easily identifiable, that it is still considered relevant in the United States' legal system, in the world as it currently exists, makes it plausible to be considered as relevant in the evaluation of a student's use of cognitive enhancers.

If student's motivations can be taken as relevant considerations, it is reasonable that they can also be taken as determining the permissibility of their use of cognitive

⁶⁴ One might object and counter that it is "intent" and not "motivation" in that is used in the legal system. However, since motivation has been defined in this research project as being the reason a person did a particular act or behavior, then intent could be regarded as a type of motivation. This move is unlikely to please philosophers working in theory of action, but this not a major problem since (i) nothing in this research project's account of action, reasons, and motivation suggests that it could not be altered into an account that focuses on action, reason, and intention, similar to T.M. Scanlon's account presented in *What We Owe to Each Other* and (ii) this project focuses specifically on actions and motivations in the normative and not the metaphysical issue (Scanlon 1998, 17-77; Davidson 1963).

enhancers. Consider that motivations, while not readily accessible or easily identifiable, are often the consideration that determines the permissibility of *palliative sedation* and *terminal sedation*. Palliative sedation is when a physician uses sedation solely as treatment for managing a patient's intractable symptoms (Cellarius 2008; Lynch 2003). Terminal sedation is a subspecies of palliative sedation and occurs in cases where the only treatment left available for physicians to manage a patient's refractory symptoms is sedation and, as often was the case, life-sustaining treatment would be withdrawn or withheld (Enck 1991: 2002).

Although palliative sedation and terminal sedation lead to the deep and continuous sedation of the patient and might be seen as infringing upon a patient's autonomy or as hastening their death, in the United States, Canada, Great Britain, and many other countries these treatments are legally sanctioned specifically on the grounds that it is the physician's motivation for sedating the patient—palliative management of intractable symptoms—that determines the physician's actions as being permissible (Quill, Dresser and Brock 1997).⁶⁵ While a physician's motivation is not readily accessible or easily identifiable, it still can determine the permissibility of an action. Therefore, because motivation is still the consideration that determines the permissibility of a physician's action in the practice of medicine and of the degree of a charge in the United States' legal system—in the world as it currently exists—this makes it plausible to consider a student's motivation as determining the permissibility of using cognitive enhancers.

⁶⁵Empirical evidence does not conclusively show that opioids and sedation in fact speed up the dying process in terminal patients (Sykes and Thorns 2003) (Morita, Tei and Inoue 2001). Moreover, 20 percent of patients who receive palliative sedation at M.D. Anderson Cancer Center are eventually brought out of sedation and discharged.

In the case of implementing this virtues-based institutional rule in a non-ideal conception of academia, although a student's motivation is not immediately available or straightforward to academic institutions, administrators, faculty, and staff, there are reasons for thinking that this virtues-based institutional could still work if implemented.

4.5 Honor Code

The final challenge is that even if motivations and character are relevant considerations in respect to student use of cognitive enhancers in non-ideal students and academic institutions, there is no manner in which academic institutions, administrators, faculty, and staff could enforce this virtues-based institutional rule. I concede that enforcement of the rule is problematic; however, the view that because it relies on motivation and character, there is no manner for enforcing the rule is not completely accurate. In fact, currently existing academic institutions do use institutional rules that focus on the motivations and character of students: honor codes.

In the case of honor codes concerning cheating, it is honor as a motivation that could be a reason a student does not cheat. In many instances, students may refrain from cheating for reasons of honor. Although cheating on an exam may allow them to beat their fellow students, many students will choose not to cheat because these actions reflect poorly on their character. To perform certain actions such as cheating reflects poorly on the character of that student.

There is in fact empirical evidence to show that honor codes are an effective method for academic institutions to implement to reduce or prevent students from cheating. Research by Donald McCabe, Linda Trevino, and Kenneth Butterfield has shown that instances of students cheating in academia increased in a 30-year period from 1964 to

1994 (McCabe, Trevino and Butterfield 2001; McCabe, Butterfield and Trevino 2003).⁶⁶

Yet while there was an overall increase in cheating, McCabe, Trevino, and Butterfield's research indicated that there is a considerable difference between the levels of cheating occurring at academic institutions with honor codes and those without honor codes:

Clearly, code students [students at institutions with robust and endorsed codes] sense that they are part of a special community that demands compliance with standards in exchange for the many privileges associated with honor codes. (McCabe, Trevino and Butterfield 1999, 230)

Students in academic institutions with honor codes felt that because they were given special privileges such as un-proctored exams, it was of particular importance to follow their institution's honor codes. Not following the codes was taken to be disrespectful to the institution and an indication of poor character in the student. Evidence from another of McCabe, Trevino, and Butterfield's studies indicated that academic institutions with a strong honor code shaped the attitudes and sentiments of students about the way they approached their professional environment after graduation (McCabe, Trevino and Butterfield 1996).

As McCabe, Trevino, and Butterfield concluded:

The primary implication of this work is that cheating can be most effectively addressed at the institutional level. On many campuses, the fundamental elements of an honor code may be a particularly useful tool for colleges and universities who seek to reduce cheating. (McCabe, Trevino and Butterfield 2001, 228)

Honor codes are an institutional rule used in academic institutions existing under non-ideal conditions to reduce or prevent student cheating, and they rely on motivations and character. That honor codes are being effectively implemented in current academic

⁶⁶ Cheating was broadly stipulated as plagiarism, falsifying a bibliography, and failing to cite properly.

institutions suggests that it is reasonable to think that this virtues-based institutional rule could also be implemented as a method for governing student use of cognitive enhancers.

4.6 Virtues-based Institutional Rule as an Honor Code

If this virtues-based institutional rule were implemented, it would stipulate the conditions under which a student's use of cognitive enhancers results in their gaining or losing respect in an academic institution. Although respect and character are distinct conceptions, it is reasonable that to be worthy of respect in academia suggests that a student needs to be regarded as a certain kind of character, broadly construed as a good character or, put otherwise, as being the right sort of student. Under this virtues-based institutional rule, by using cognitive enhancers for reasons of self-improvement, seeking understanding, and accurate beliefs, a student accumulates good character—which in turn is a condition for being respected or held in high esteem.

In greater detail, consider the roles that character and respect have in enforcing this institutional rule. The motivations of self-improvement, seeking understanding, and accurate beliefs are provided and emphasized as (i) the proper reasons for using cognitive enhancers and (ii) as reasons for using cognitive enhancers that reflect well on an individual's character. A student's use of a cognitive enhancer is linked to her character, and in turn, this provides a reason of character for the student to have the proper motivations when using enhancements. In addition, because good character is an antecedent condition for a student to gain respect is another reason for students to have the right reasons to use cognitive enhancers.

Although honoring a student is most prominently illustrated when a student is respected or held in high esteem by academia, this virtues-based institutional rule sets the

conditions under which students can gain or lose respect. Respect is a powerful way to govern people's conduct:

We don't give soldiers bonuses for bravery, we give them medals; and more important, we honor them. We give them the respect we know they deserve. (Appiah 2010, 193)

The role of respect and the significance of being held in esteem by an institution not only are ways to govern the conduct of soldiers but also in this instance provide a way to govern and enforce student use of cognitive enhancers by specifying the stipulations for being eligible or worthy of respect.

Therefore, similar to an honor code concerning cheating, this virtues-based institutional rule would rely on character and respect to govern student use of cognitive enhancers in academia. By providing the conditions for gaining, or at least not losing respect, in terms of students' character, which in turn depends upon students having the motivations of self-improvement, seeking understanding, and accurate beliefs when using cognitive enhancers, this virtues-based institutional rule offers a method for enforcing the proper use of enhancements

4.7 Accountability of Character

If implemented in current academic institutions, this virtues-based institutional rule can immediately govern student use of cognitive enhancers in current academic institutions because it makes students *accountable* for their character. Although this project's focus narrowly centers on the use of enhancements, real students have an active role in many of their choices, attitudes, behaviors, and values. This means they can determine the sort of character they want to have by their actions. It also means that if

students have, to some degree, an active role in their character development, then it is reasonable to evaluate a student's character.

Traditionally, character has always been greatly valued in academia. As a remark attributed to Dean of Vanderbilt University Madison Sarratt illustrates:

Today I am going to give you two examinations, one in trigonometry and one in honesty. I hope you will pass them both, but if you must fail one, let it be trigonometry, for there are many good [people] in this world today who cannot pass an examination in trigonometry, but there are no good [people] in the world who cannot pass an examination in honesty.

Sarratt's view is that while failing a trigonometry exam might be bad for the student in the short term, cheating to pass the exam and displaying poor character is far worse.

Not only is it important for students to display good character in academia, but students are also traditionally held accountable for their character. This accountability of character is because being a student is to occupy a certain *identity* or *role*. A person can have a multiplicity of identities or roles, from familial to social to professional. When a person enters into an academic institution for undergraduate education, this individual undergoes organization socialization, meaning that he or she takes on the identity or role of a student (Akerlof and Kranton 2005; Feldman 1981). Occupying the identity or role not only means accepting certain values of an institution, such as the goals and aims of education, but also having particular responsibilities (Strike 1983). At least one responsibility of students is to display conduct reflective of good character.

Moreover, many existing academic institutions have rules that hold students accountable for the character their actions reflect. To begin, consider student-athletes as a clear example. Not only are student-athletes expected to maintain a certain level of scholarly performance, but there are also clearly indicated rules about displaying good

character in their particular sport or in activities outside the confines of the academic institution.⁶⁷ Students not participating in collegiate athletics are also held to rules concerning character. For example, there are regular occurrences—when students are confrontational with professors or other students, when they have extremely low GPAs, or when they are failing a number of courses—in which a student is put on probation, officially reprimanded, or expelled on the grounds that their conduct was not reflective of the proper character of students and was in violation of the institution’s policies.

Even with institutional rules that do not directly relate to students’ character, there is an underlying notion of good character as being an implicit reason for this rule. For example, consider rules concerning plagiarism. That a student should not turn in another person’s work or ideas and claim it as his own does not, at least initially, seem to be a question of character. However, consider rules concerning plagiarism for those not in academia and those who are students. If an individual is not in academia and plagiarizes another person’s work or idea but does not publish it, seek profit, or violate copyright or trademark laws, it is difficult to punish this person with any legal sanctions. Outside academia, there are instances of plagiarism in which persons can legally be punished. At best one might take a person who plagiarizes in this way as having poor character, but it is difficult to hold them accountable for having poor character. In contrast, consider a student who plagiarizes. Specifically, I am thinking of instances in which a student uses another student’s work, not one that has been published or copyrighted. A student who

67 NCAA Bylaw 2.4: The Principles of Sportsmanship and Ethical Conduct. For intercollegiate athletics to promote the character development of participants to enhance the integrity of higher education and to promote civility in society, student-athletes, coaches, and all others associated with these athletics programs and events should adhere to such fundamental values as respect, fairness, civility, honesty and responsibility. These values should be manifest not only in athletics participation but also in the broad spectrum of activities affecting the athletics program (National Collegiate Athletic Association 2009).

plagiarizes and is caught is punished even if (i) this student was not going to publish or seek profit with this work and (ii) the student who was plagiarized allowed and gave permission for this to happen. A student is punished for plagiarism because of institutional rules prohibiting plagiarism, but at a more fundamental level, because plagiarism does not reflect well on a student's character. In other words, plagiarism is not the kind of action that academia expects from students.

Under this virtues-based institutional rule, students are held accountable by an academic institution and by their peers (or possibly even by themselves) for using cognitive enhancers in a manner that reflects well on their character. A student who uses a cognitive enhancer for reasons of seeking understanding and accurate beliefs reflects good character and, all things being equal, is likely going to be respected by the academic institution and her peers. Conversely, a student who uses cognitive enhancers for improper reasons reflects poor character and, all things being equal, is likely not going to be respected by the academic institution and her peers. According to this virtues-based institutional rule, although it might be bad for a student to do poorly on an exam, it is worse for a student's character to use cognitive enhancers for improper reasons because this reflects poorly on their character. It is important for students that they not only use cognitive enhancers for the right reasons but that uses of these enhancements do reflect on their character. This institutional rule governs student use of enhancements by holding them accountable for the character that certain uses of enhancements entail.

4.8 Differences Between Honor Codes and Virtues-based Institutional Rule

The case for this virtues-based institutional rule being implemented in existing academic institutions is that it provides a method of enforcing that students use cognitive

enhancers for the right reasons on the grounds that it is similar to an honor codes. However, it needs to be noted that there are two significant differences between honor codes and this virtues-based rule. First, they differ in regard to the actions they are meant to govern. Specifically, an honor code concerning cheating—taken as plagiarism, falsifying a bibliography, and failing to cite properly— governs actions that are clearly regarded as being prohibited by most reasonable people. Yet it is not clear that having an improper motivation for using a cognitive enhancer is an action that even most reasonable people take as something to prohibit. Even if cheating and the improper use of enhancements are taken as being prohibited actions, the reasons why do seem relevantly different. This is likely to impact the importance students regard there to be in following a virtues-based rule and also on administrators, faculty, and staff enforcing this rule.⁶⁸

Second, honor codes and this virtues-based rule differ in the clarity of the repercussions that violations will have on students. Consider this clarity simply in regard to a student's esteem and character. Under normal conditions, a student with good character and esteem who is caught cheating loses esteem in their standing with the academic institution and their peers as well as generally being regarded as having poor character. Yet if a student were found to have violated this virtues-based rule, it is not at all clear how it would impact this student's esteem or character. Moreover, in conjunction with the previous difference, there is an issue in assessing hard cases of virtues-based rule violations. For example, the student is held in high esteem and has good character but is simply experimenting with using enhancements, or this student only uses an enhancement improperly once, or this student is held in high esteem and has good character in all other

⁶⁸ In fact, that faculty often take an individualized or selective approach toward student cheating has been shown to be a reason that students rates of cheating have increased over the years (McCabe, Butterfield and Trevino 2003).

domains of academia *except* that he or she consistently uses cognitive enhancers improperly. As these instances show, a significant difference between honor codes and this virtues-based rule is the clarity of the repercussions for violations.

These differences point to certain disadvantages in implementing a virtues-based institutional rule to govern and guide student use of cognitive enhancers. Certainly there are other institutional rules that are more feasible. An institutional rule that simply stipulates the use of a cognitive enhancer as being permitted or prohibited without relying on considerations of motivation and character (or even respect) is more feasible and provides a single determinate answer.

It cannot be overlooked that a virtues-based institutional rule differs significantly from an honor code and that it is not the most feasible rule to implement in current academic institutions. Yet this virtues-based institutional rule still provides the following advantages: first, as I examine in the following section, it is able to handle concerns about the medicalization of cognitive enhancers in academia. Second, it offers a mature approach that develops *the way students think about the use of enhancements in academia*. Third, with it one resists oversimplifying issues of enhancement in academia.

4.9 Medicalization of Cognitive Enhancers

One concern about the use of enhancements in academia is medicalization, defined as “a process in which non-medical problems become defined and treated as medical problems, usually in terms of illness and spending” (Conrad, Mackie and Mehrotra 2010, 1943). According to Peter Conrad (2007; 2010), medicalization is a social process, and in principle is neither good nor bad. Whether medicalization is judged as being good or bad

depends on many considerations such as consequences, rules, motivations, and relevant impact on economics and institutional practices.

For Conrad, medicalization is bad when it is *over-medicalization*, meaning that individuals, communities, and government healthcare systems are burdened with costs for treating questionable medical conditions or disorders (Conrad 2007: Conrad, Mackie and Mehrotra 2010). An example of over-medicalization is categorizing pains associated with normal aging as being Complex Regional Pain Syndrome (CRPS) instead of simply holding them to be normal pains that occur in the aging process.⁶⁹ Patients seeking treatment for CRPS burden a healthcare system via processing, regulatory, and transaction costs.

In the case of the medicalization of pharmaceuticals, Carl Elliot (2003) contends that medicalization is bad when using these enhancements leads to people making and maintaining choices that are inauthentic to their own values; for example, when a person relies on anti-depressants or an anti-anxiety pharmaceutical to be more outgoing or to endure a situation, even if this goes against their own values.⁷⁰ Jonathan Lehrer recounts a story of a psychiatrist who was taken aback by a patient's response when asked if the anti-depressants were working:

“Yes, they [anti-depressants] are working great ... I feel so much better. But I'm still married to the same alcoholic son of a bitch. It's just now he's tolerable” (Lehrer 2010, 42).⁷¹

⁶⁹ I take this example from Erik Parens who, in turn, was suggested this example by an anonymous reviewer because it clearly is an instance of over-medicalization (Parens 2011).

⁷⁰ Although depression and anxiety disorders have some symptom overlap, they are not the same. A common problem for even advanced clinicians is making an accurate diagnosis. This is a matter of serious concern because anti-depressants and anti-anxiety pharmaceuticals, when prescribed for inaccurate diagnoses, often have the paradoxical effect on a patient (e.g., anti-depressants for anxiety often make a patient's anxiety disorders worse and anti-anxiety pharmaceuticals for depression often make a patient's depression worse).

⁷¹ This quote is also used by Erik's Parens (2011).

In this case, the patient is being inauthentic to her values by using these pharmaceuticals.

Also, for many psychiatrists, medicalization is bad when normal emotional states such as shyness or sadness are regarded as being conditions or disorders that require medical treatment. One problem I encounter often is that when physicians give patients a diagnosis of cancer, they often immediately prescribe anti-depressants. Yet this blocks the grieving process since the patient is not depressed because they have depression; they are depressed because they cancer. By medicalizing sadness and preventing patients from going through the normal and natural grieving process, many patients are unprepared for the physical and emotional difficulties of chemotherapy or making end-of-life decisions.

Nevertheless, there are reasons for thinking that under certain conditions, turning a non-medical problem into a medical problem is good. For example, turning childbirth into a medical condition has resulted in fewer risks and better outcomes for both mothers and newborns (Conrad, Mackie and Mehrotra 2010). For psychiatrists and psychologists, the reliance on pharmacology instead of psychotherapeutic treatments (“talking” or behavioral therapies) is not always wrong in-and-of-itself and often better helps patients.

Erik Parens summarizes this view:⁷²

If a pharmacological and psychotherapeutic means can both achieve the same end —improving how one experiences herself and the world— then it is irrational and perhaps inhumane to prefer the more strenuous and expensive means. It’s irrational not to take a shortcut when improving human well-being is the destination. (Parens 2011, 5)

For the moment, this research project remains neutral on whether the medicalization of cognitive enhancers is to be regarded, all things considered, as good or bad.⁷³ While neutral on this question, because this virtues-based approach and institutional rule does

⁷² This is not Erik Parens’ view. Like this research project, he holds a more moderated and nuanced view of regarding when medicalization is regarded as good or bad.

⁷³ I return to this concern in the final chapter.

make it more permissible for students to use cognitive enhancers in academia, the following sections focus on addressing concerns about the medicalization of cognitive enhancers in academia.

A concern about the medicalization of cognitive enhancers in implementing this virtues-based approach and institutional rule is that it will likely result in three misconceptions. Addressing these misconceptions is important since they are likely to occur (whether the medicalization of cognitive enhancers in academia turns out to be good or bad). The first misconception is that the medicalization of cognitive enhancers will lead students to misunderstand the notion of proficient functioning of cognitive capacities. Students may come to think that unless their cognitive capacities of focus or concentration are functioning at above-proficient levels, they have a medical impairment. While this leads to many different problems, at least one problem is the inevitable burden there will be on the health system. It was estimated that in 2005, spending on behavioral disorder medication, the classification under which cognitive enhancers often fall, was \$4657.5 million (Conrad, Mackie and Mehrotra 2010, 1946). Clearly not all of the \$4657.5 million was on pharmaceuticals for enhancement, but it cannot be denied that spending on pharmaceuticals for enhancement did contribute to this amount. In comparison, in 2010, there were 1,529,560 new reported cancer cases and 569,490 people died from cancer in the United States (Jemal, et al. 2010) (Carter and Nguyen 2012). While cancer resulted in all of these deaths, the 2010 National Cancer Institute's fiscal budget for cancer research was only \$1.5 billion (National Institutes of Health and the Department of Health and Human Services 2012). One might wonder whether instead of

spending money on pharmaceuticals for enhancement, the money would have been better served going to cancer research.

The second misconception is about the value of academia. The medicalization of cognitive enhancements leads to hyper-competitive students accepting misconceptions not only about the goals of academia—which this research project mentioned at the beginning of the chapter—but also in respect to academic achievement.⁷⁴ Medicalizing students' use of cognitive enhancers is likely to contribute further to the misconception that the value of academia for the student is on academic achievement rather than on them attaining understanding. Put otherwise, for students, the misconception does not focus on their development of an ability to draw upon and connect information and facts from academia to apply to their own life experiences but rather on whether they got A's in their course.

The third misconception, the most dangerous, is that the medicalization of cognitive enhancers is likely to lead to students believing, incorrectly, that these cognitive enhancers carry little to no risk to their health or well-being. This misconception is dangerous because cognitive enhancers are highly addictive pharmaceuticals. The rates at which students in academia are using them without medical supervision is increasing, and an honest assessment of our understanding of addiction, in both a medical and non-medical sense, shows it to be rather basic. Only within the past ten years has our understanding of the neuroscience of the dopamine system's involvement in decision-making started to become clear. This dopamine system interacts with the reward center of the brain. Cognitive enhancers rely on and often rewire a person's dopamine system,

⁷⁴ Michael Sandel touches on this hyper-competitive notion, holding that enhancements are often used to pursue a misguided notion of perfection (Sandel 2007).

which has implications—not yet fully understood by neuroscience or pharmacology—for the likelihood of addiction (Smith and Farah 2011).

Also, it is necessary to be aware that the use of pharmaceuticals, even in situations where they are used exclusively as treatment, often exposes people to unpredicted—and surprisingly disturbing—risks. For example, 6 to 14 percent of patients receiving Dopamine Replacement Therapy (DRT) develop impulse control disorders such as pathological gambling, compulsive buying, and hypersexuality (Ambermoon, et al. 2010; Weintraub, et al. 2010; Carter, Ambermoon and Hall 2011). This risk was unknown for many years, but recently, the implications of this risk have been gaining attention, such as in the case of a prominent community member in Tasmania engaging in prostitution with underage girls only after starting DRT and when there was no previous criminal record or inappropriate interest in young girls (Porter 2011). In the case of cognitive enhancers, it is likely that long-term use of cognitive enhancers could result in side effects and health risks that are currently unknown.

Whether or not the medicalization of cognitive enhancers is good, these three misconceptions pose significant concerns. For the sake of argument, let's assume that these misconceptions are going to occur. I contend that this research project's virtues-based approach and institutional rule offer one way to handle these misconceptions.

4.9.1 Virtues, Misconceptions, and the Medicalization of Cognitive Enhancers

The virtues-based approach and institutional rule provides a moderated and nuanced way to handle the three misconceptions about the medicalization of cognitive enhancers. However, before describing this, it needs to be noted that distinguishing between medical and non-medical problems is not always an empirical, fact-based process. For a long

period of modern medicine, homosexuality was considered a psychiatric condition or disorder. It was not until a majority of psychiatrists voted that it was not a mental disorder that it was removed from the medical canon as a condition or disorder. In this case, a majority of psychiatrists agreed, and correctly so I believe, that being a homosexual was not a condition or disorder requiring medical treatment. Yet notice that while these psychiatrists' votes were cast on the grounds of their professional experience, it is not as if this decision, for lack of a better term, was based on the empirical findings of the time.

Also contributing to the problem of distinguishing sharply between medical and non-medical problems is that societal values and advances in biomedical technologies and medical procedures often work in conjunction to dictate indirectly the circumstances in which a problem will be medicalized. The recent prominence of erectile dysfunction (ED) as a medical condition or disorder illustrates the complexity and ambiguity of societal values and biomedical technologies and medical procedures working indirectly to medicalize something. Unlike what was traditionally regarded as impotence for psychological reasons, ED occurs when a man is physiologically not able to develop or maintain an erection for sexual intercourse. It is clear that having the ability to develop or maintain an erection is rather important for society and for most men. There are many conditions under which ED is a medical condition or disorder, resulting from prostate cancer or diabetes. However, considering human evolution, it is not at all evident that human males past their reproductive prime were physiologically meant to be able to develop and maintain an erection. ED was not a problem until society advanced to the point where men living beyond their reproductive prime became common. That there was

a pharmacological treatment for ED as well as value in still being able to have a sexual relationship even past a man's reproductive prime led to the medicalization of ED.

As the examples of homosexuality and ED demonstrate, there is immense difficulty in distinguishing medical from non-medical problems not only on empirical grounds but also because societal values and advances in biomedical technologies and medical procedures often indirectly (or directly) dictate what things are to be medicalized.

In respect to the use of cognitive enhancers, it is also necessary to understand that as neuroscience research into the human brain progresses, it becomes clear that what is considered a normal range of proficient-functioning levels of cognitive capacities is always changing. Consider that while cognitive enhancers were created to treat ADHD and LD, it is only because reading, writing, and academics are highly valued by our society that we think of these as medical conditions or disorders. Some have argued that it is not so much that persons with ADHD and LD have medical conditions or disorders but that human neurology has simply not adapted to the need for these abilities to read and write (Stein 2008; Buchanan 2008). Human beings have only been reading for five thousand years; in terms of evolution, this is a relatively short period (Miller 2010). Therefore, distinguishing between medical and non-medical problems is not always an empirical, fact-based process, and societal values often indirectly (or directly) dictate what things are to be medicalized. Yet this does not mean that making a non-medical problem into a medical problem is something that, at least *prima facie*, should be rejected.

Returning to this virtues-based approach and institutional rule, I show how it offers a moderated and nuanced way to handle the three misconceptions about the medicalization

of cognitive enhancers. In regard to the first misconception, notice that a virtuous student's impetuses for using cognitive enhancers do not center on having a deficiency or on considering that proficient functioning levels of cognitive capacities are deficiencies, but rather they focus on having the proper motivations in academia. Under this virtues-based institutional rule, the reasons for students using cognitive enhancers are not focused on students' cognitive capacities and whether they're proficient or need to be enhanced. Instead, students' reasons for using these enhancements are focused on the proper motivations and character for students in academia.

Under normal conditions, the focus on proper motivation and character for students does not call for medical attention but instead calls for self-reflection. Under this virtues-based approach and institutional rule, students should not immediately converge on their healthcare providers for pharmaceutical enhancement but rather reflect on their own motivation and character. Students begin first by asking themselves whether their motivations for using cognitive enhancers are for seeking understanding or accurate beliefs or self-improvement, and whether their current use of cognitive enhancers reflects good character. This virtues-based approach and institutional rule would cut down on students excessively seeking enhancements from healthcare providers, thereby lessening the burden on the healthcare system.⁷⁵

The second misconception is that medicalization of cognitive enhancers fosters a hyper-competitive notion of academic achievement. To see how this virtues-based approach and institutional rule handles this misconception, reconsider the goal of academia for this approach. The goal of academia under ideal and non-ideal conditions is

⁷⁵ One might think that this is unrealistic, but under the United Kingdom's healthcare system, the use of anti-depressants is reserved only for patients with acute depression. All other cases involving depression first must undergo counseling and exercise therapy.

to attain understanding and not simply to obtain knowledge. The goal of academia is for students to strive toward developing an ability to connect, draw upon, and then apply relevant information and facts learned in academia to one's life experience. This goal of academia goes a long way to addressing the misperception of academia being solely about academic achievement. If attaining understanding is the goal of academia and something students should strive to attain, then academic achievement is lessened in importance. This, in turn, does seem to be more consistent with the value of education as being instrumentally beneficial *and* good for its own sake.

Also, this virtues-based approach indicates, even if in an indirect way, what students in academic institutions *should* be doing with the information and facts learned. Whether pursuing highly theoretical or practical, impactful work, the purpose of an education is to contribute to life experiences. It is likely that if institutional rules were prominently about the goal of academia and desired virtues of students—the virtues of seeking understanding and accurate beliefs—the rules would be of great benefit for students, administrators, staff, and faculty. Students would be able to understand clearly the value of education as something instrumental and good for its own sake, and those working in academia would be less likely to develop the typical apathy toward students. At a minimum, this virtuous approach and the virtues of students clearly indicate that the unexamined life is a missed opportunity.⁷⁶

⁷⁶ This is the minimum understanding of the value of education for students according to this virtues-based approach and institutional rule. While I think this claim is correct, I am personally suspicious of persons who make claims about the value of the examined life. My suspicion is not because the claim about the unexamined life is incorrect; rather I have found those who often rely on this claim to be the most disingenuous of persons. I think but do not argue here that instead of focusing on examination of one's life, those in education should instead emphasis a point Christopher Hitchens makes in phrasing Horace Mann's famous quote: "Until you have done something for humanity you should be ashamed to die" (Hitchens 2012).

The final misconception resulting from the medicalization of cognitive enhancers is that students believe using enhancements is risk free. This virtues-based approach and institutional rule takes a moderated approach in handling this misconception because the risks (both known and unknown) and benefits are not only regarded as relevant information in a given situation, but the risks and benefits are assessed in respect to the virtues of seeking understanding and accurate beliefs. The use of cognitive enhancers under certain conditions poses a significant risk to some students' health, so if they are to be used, then it is sensible that students have the proper motivation for using them. This is supported by this approach's consistent view that pharmaceutical enhancements are not, by any stretch of the imagination, "smart pills." Still, when assessing the risks and benefits of student use of cognitive enhancers, one should not *underestimate* the benefits, even if moderate, that result from using these enhancements. Cognitive enhancers have been shown to help surgeons and other emergency department medical professionals maintain high levels of alertness and concentration in extreme circumstances for an extended period (Warren, et al. 2009; Carter, Ambermoon and Hall 2011).

There is still the concern that amidst notions of balancing risk and benefits as considerations for using these enhancements, I have overlooked the potential—more accurately the probability—of addiction resulting from the medicalization of cognitive enhancers. I think that addiction is an important problem and a serious issue in respect to the use of cognitive enhancers. However, I refrain from making anything more than minimal claims about the risk of addiction and the medicalization of cognitive enhancers. There are reasons for thinking that, as they currently stand, medicine, neuroscience, and philosophy do not provide a clear, conceptual way to understand addiction in regard to

human neurology and responsibility. In the medical and neuroscience community, there is a tendency to consider addiction in respect to physiological causes, favoring neuroscience mechanistic explanations. Yet this is a problem because it removes or at least weakens the role that psychological causes have in cases of addiction. Weakness of will is still dependent on human agency, whether human agency is considered as being deliberative, conscious, automatic, or automastistic (Levy and Bayne 2004a; 2004b). Physiological causes do not always outweigh the fact that, by our nature, humans do act for reasons. Medical and neuroscience understandings of addiction need to better account for these reasons. Alternatively, for those in philosophy, there is often a tendency to favor a conceptual understanding of addiction in terms of psychological causes. This is also a problem because philosophical accounts of addiction and personal responsibility often understate the physiological effects of addiction on the human brain. For these reasons, I refrain from making anything more than minimal claims about the risk of addiction and the medicalization of cognitive enhancers.

The risk of addiction is a concern for the medicalization of cognitive enhancers, but one feasible salutation is to implement educational programs and information for faculty, staff, and students about the risk of addiction when using cognitive enhancers. Also important is acknowledging that there should not be an overestimation or an underestimation of the risk of addiction. In this way, this virtues-based approach and institutional rule functions to provide equilibrium between the overestimation and underestimation of cognitive enhancers and addiction. A virtuous student would likely attempt to find what Buddhism regards as the “the middle path” and refers to as the “golden mean.” The use of cognitive enhancers requires a middle path between

overestimation and underestimation of the risks of addiction. While there are benefits to using cognitive enhancers, there are also risks, including addiction, and this virtues-based institutional rule attempts to provide a balance for student use of cognitive enhancers.

Therefore, even if the medicalization of cognitive enhancers results in these three misconceptions for students, I contend that this virtues-based approach and institutional rule offer a moderated and nuanced way to handle them.

4.10 Advancing Enhancement in Academia

This research project now examines at least one way this virtues-based approach and institutional rule advances enhancement in academia: it offers a mature approach. For Kant, it was during the Enlightenment that humanity realized the role of reason as being able to serve as the guide for morality:

Enlightenment is man's emergence from his self-incurred immaturity. Immaturity is the inability to use one's own understanding without the guidance of another. This immaturity is self-incurred if its cause is not lack of understanding, but lack of resolution and courage to use it without the guidance of another. The motto of enlightenment is therefore: Sapere aude! Have courage to use your own understanding! (Kant 2010)

Maturity is having the resolution and courage to rely on reason rather than be guided by authority.

This virtues-based approach and institutional rule is mature in that it asks for us to have the resolution and courage to rely on students to be able to decide the appropriateness of using cognitive enhancers in academia. However, unlike Kant, it does not hold that deciding the appropriateness of using cognitive enhancers in academia is a matter that can be completely left up to students' discretionary judgment. Instead, it suggests that we need the resolution and courage to change academia's institutional rules and policies for governing and guiding student use of enhancements in academia. We

need to change academia's institutional rules and policies about enhancement in respect to the ideals of human excellence. In other words, instead of focusing on trying to determine decisively whether the use of enhancements is cheating or whether they are permitted or prohibited, this research project attempts to focus on developing the way students think about the use of enhancements in academia.

Again, considering that the relationship between academia, institutional rules, and students is dynamic, a change in rules and policies has profound effects on students.⁷⁷ The manner in which students think about and use cognitive enhancers is at least partially shaped by academia's institutional rules and policies. If students are not using cognitive enhancers in the proper circumstances or for the right reasons, then it is necessary to change these rules and policies to facilitate the way students think about enhancements.

As presented in Chapter Three, institutions are integral to molding the ways students think. Institutional rules create an expectation of a pattern of behavior for students by structuring and developing students' motivation, and this shapes the ethos of students. For academic institutions, implementing this virtues-based institutional rule is likely to have profound implications on the way students think about cognitive enhancers. It would likely shape students' processes of reasoning about cognitive enhancers in two ways: First, this virtues-based rule makes motivations and character prominent *rational considerations* for students when reasoning about cognitive enhancers; second, this rule

⁷⁷ Consider the diverse claims and arguments made in this research project: (1) the goals of academia are developing students' intellectual capacities to, first, attain understanding and, second, achieve commercial or economic placement; (2) academia's institutional rules regulate which actions of students are permitted and prohibited; (3) academia's institutional rules also structure and develop motivations by providing expectations of a pattern of behavior and directing interactions and/or being internalized and becoming an element of a student's psychology; (4) even if academia does not have a responsibility to develop virtues in students, it still works to facilitate these virtues in students; (5) the environment is integral in supporting and assisting human cognition, and institutions are integral in supporting and assisting a person's cognition and intellectual capacities and in shaping their attitudes and sentiments.

can create an *automatic mental process* even if students are only sub-optimally aware of motivation and character as considerations for evaluating the use of cognitive enhancers.⁷⁸

4.10.1 Shaping Students' Reasoning: Rational Considerations

This virtues-based institutional rule shapes students' processes of reasoning about cognitive enhancers by making their motivations, such as seeking understanding and accurate beliefs, and character become prominent rational considerations for when they deliberate using cognitive enhancers. By prominent rational considerations, I mean that a student, at a minimum, regards using cognitive enhancers for reasons of seeking understanding and accurate beliefs or how the use of these enhancements reflects on his character as being significant in their process of reasoning.

Institutions are integral to molding how students think. If implemented in an academic institution, this virtues-based institutional rule would emphasize motivations and character as prominent rational considerations because motivations determine the permissibility of using cognitive enhancers.

That it is a student's motivation that makes the use of cognitive enhancers permissible suggests that a reasonable student would have to *at least* regard motivations as being significant in the process of reasoning about enhancements. That motivations play a

⁷⁸ Before demonstrating how this virtues-based institutional rule could shape the way students think about cognitive enhancers, I need to make certain points of clarification to avoid confusion. Since this chapter is on this virtues-based institutional rule being implemented in non-ideal conditions, and the investigation is currently focused on how this rule develops students in existing academic institutions into the right sort of student by shaping the way they think about cognitive enhancers, I make the following modest clarifying points on practical reasoning. In the following section, the focus is on a student's rational procedure for thinking about cognitive enhancers. For emphasis on this rational procedure, I often use "process of reasoning" instead of practical reasoning. However, even with the focus being on students' processes of reasoning, it is not necessary that students be fully aware of this process (Streumer 2010).

significant role in deliberation further suggests that it is likely that a student will reflect upon her own motivations and assess whether they meet the permissibility condition.

By allowing for the motivations of seeking understanding and accurate beliefs to be prominent rational considerations in a student's process of reasoning about using cognitive enhancers, this virtues-based institutional rule is similar to Aristotle's notion of virtues in practical reasoning (Kamtekar 2004). Practical reasoning is an active process in which virtues are a significant rational consideration. According to Aristotle, virtue is the mean between excess and deficiency and rationally determined by practical wisdom:

Excellence, then, is a state concerned with choice, lying in a mean relative to us, this being determined by reason and in the way in which the man of practical wisdom would determine it. (NE 2.5 1106^{b36}-1107^{a1})

A virtue can be understood as a rational consideration that is active in the process of practical reasoning (Kamtekar 2004). For a person to become virtuous, virtues must be actively considered when reasoning in a particular situation. For example, for a person to have the virtue of compassion, the motivation of sympathy (or alleviation of suffering) must have a prominent role in his process of reasoning. In a manner similar to Aristotle, this virtues-based institutional rule works to make these motivations, specifically seeking understanding and accurate beliefs, as rational considerations that a student must consider when deliberating on the use of enhancements.

Under this virtues-based institutional rule, students, at least initially, would consider the motivations of seeking understanding and accurate beliefs as being prominent rational considerations in their process of reasoning about cognitive enhancers. This likely will result in students having to reflect on what their motivations actually are for using cognitive enhancers. As students progress through their academic career, they will likely

become more cognizant of their motivations for using cognitive enhancers and, in doing so, become aware of how this use is reflective of their character. This, in turn, allows for reasons of character to become prominent rational considerations for a student's process of reasoning about the use of cognitive enhancers.

Pausing for the moment, notice that under this virtues-based institutional rule, the claim is that motivations and character are likely to become prominent rational considerations in a student's process of reasoning, not that motivations and character will always be most the important considerations or that this rule makes students have these considerations. To illustrate, consider T.M. Scanlon's (1998) distinction between *standard normative reasons* and *operative reasons* in respect to explanation (and, in turn, justification). Standard normative reasons are those that support the explanation or justification of persons for holding a belief or doing an action in general (i.e., this is a good reason for persons to hold this belief or do an action). Operative reasons differ in that they are reasons that support a *particular* person's explanation or justification for a belief or an action (i.e., this is the reason for *that* person's belief or action).⁷⁹

It is possible to use the framework of Scanlon's distinction to formulate a useful distinction and apply it to student use of enhancements in academia. I contend that there is a distinction between permissible reasons and operative reasons. According to this virtues-based institutional rule, seeking understanding and accurate beliefs are permissible reasons: these are the reasons that permit a student to use a cognitive enhancer. However, students do have operative reasons, their own particular reasons for wanting to use cognitive enhancers.

⁷⁹ (Scanlon 1998, 18-20).

Because seeking understanding and accurate beliefs determine the permissibility of using cognitive enhancers, a student has to at least consider whether their operative reasons are also permissible reasons. This student may choose to take a particular operative reason as being important in a given situation. Still, under this virtues-based institutional rule, a reasonable student has to at least compare their operative reasons against the permissible reasons. This comparison makes permissible reasons, the motivations of seeking understanding and accurate beliefs, the prominent rational considerations in a student's process of reasoning about the use of cognitive enhancers. This virtues-based institutional rule does not *make* students have these motivations but works to develop these motivations as having a significant role in students' processes of reasoning about enhancements.

4.10.2 Shaping Students' Reasoning: Automatic Mental Process

If implemented, this virtues-based institutional rule not only shapes students to regard motivations and character as prominent rational considerations in their process of reasoning; it is also likely to affect this process of reasoning in a profound but less explicit way. Contemporary research in neuroscience and social psychology indicate that—in general—humans are often not consciously aware of their reasons for acting, and many actions are not consciously controlled (Levy 2007; Wegner 2002; Bargh and Chartrand 1999). This research has not shown that conscious control of actions or reasoning is illusory but rather focuses on neuroscience and social psychology to examine the role automaticity has in human cognition.⁸⁰ People have *automatic mental processes*, meaning cognitive processes for assessing information and undertaking certain acts,

⁸⁰ Although some, such as Daniel Wegner, hold this position, I do not (Wegner 2002).

mindsets, or affective orientations without a conscious or intentional deliberation (Bargh and Chartrand 1999, 464).⁸¹ These automatic mental processes are part of our human neurological “hardwiring.” For example, there is an automatic mental process referred to as the *perceptual-behavioral link*⁸² in which a person unconsciously and unintentionally mimics the behavior of another person during social interaction (Bargh and Chartrand 1999; Lakin, Chartrand and Arkin 2008; Wiltermuth and Heath 2009).

According to Bargh and Chartrand, it is the environment that provides conditions for developing automaticity:

The necessary and sufficient ingredients for automation are frequency and consistency of use of the same set of component mental processes under the same circumstances—regardless of whether the frequency and consistency occur because of a desire to attain a skill, or whether they occur just because we tended in the past to make the same choices or to do the same thing each time. These processes also become automated, but because we did not start out intending to make them that way, we are not aware that they have been and so, when that process operates automatically in that situation, we aren’t aware of it. (Bargh and Chartrand 1999, 469)

The consistency and frequency of a person’s circumstances dictates the likelihood of an individual developing a particular automatic mental process. Research indicates that the development of automatic mental processes are a way of off-loading mental tasks to preserve the energy these conscious deliberations require for processing time (Levy 2007; Wegner 2002; Bargh and Chartrand 1999). This is not all that shocking considering that many activities, with a range of complexity, can be done automatically: turning on one’s computer, eating and conversing with others, driving to work, filing paperwork while reading, driving home after work, etc.

⁸¹ *Intentional mental process* is the cognitive process for consciously and intentionally responding to a certain range of rational considerations for undertaking certain acts, mindsets, or affective orientations (Bargh and Chartrand 1999).

⁸² Also called “behavioral coordination,” “movement synchrony,” or “behavior matching” in the literature.

Yet as these examples illustrate, these automatic mental processes are not solely behavioral but also extend into the realm of human reasoning: deliberation and evaluative judgments. Research by Ambady and Rosenthal (1993) demonstrates the prevalence and reliance of automatic mental processes for evaluating acts, events, and people. For example, when shown five-second clips of professors teaching, people were rather successful in predicting these professors' student-evaluation scores. Drawing upon a range of situational, sensory, and other considerations, a person can quickly evaluate acts, events, and people. However, people are not consciously aware of this process of reasoning in the automatic evaluation of acts, events, and people, and automatic evaluations often do reflect the values of a particular person (Dijksterhuis, et al. 2006).

This research in neuroscience and social psychology impacts this virtues-based institutional rule because it is plausible that were such a rule implemented, it could lead to students developing an automatic mental process about the use of cognitive enhancers. If implemented, this virtues-based institutional rule is likely to result in an environment in which the motivations of seeking understanding and accurate beliefs are taken—in being the motivations that determine permissibility—as prominent rational considerations in a student's process of reasoning about cognitive enhancers. With consistency and frequency, students can be able to develop an automatic mental process such that the appropriate use of cognitive enhancers is for reasons of proper motivation and character, all without the student being consciously aware of this process.

Initially, the claim that students can develop an automatic mental process about the appropriate use of cognitive enhancers seems difficult to accept. Yet imagine the following situations. In the first situation, Edith, who has developed an automatic mental

process about the appropriate use of cognitive enhancers, happens to cross paths with Oliver in the library. During their conversation, Oliver offers Edith cognitive enhancers. In this brief encounter, Edith does not have time to consciously deliberate but politely turns down the offer. Edith politely declines because her automatic mental process made a rapid evaluation of Oliver and the situational circumstances, including her motivations, and made a “snap judgment.”

In the second situation, Edith wakes up in her dorm on campus during fall break. There are no classes and she has the day to herself. Without any reflection, she gets up, takes a cognitive enhancer and immediately begins working on her coursework. In both of these situations, Edith’s use of cognitive enhancers is consistent with the appropriate use as stipulated by this virtues-based institutional rule in her academic institution. In the first situation, she does not use them when she is not certain of situational information or her motivations; in the second situation, she uses a cognitive enhancer appropriately and is only sub-optimally aware of her process of reasoning. Moreover, it might also turn out that Edith, even given time for reflection, might not be able to articulate her considerations for her decision.

One might be concerned that Edith’s inability to articulate her reasons for her actions means that she didn’t go through a process of reasoning. Yet even if Edith were unable to articulate her reasons, it is plausible that she went through an automatic process of reasoning about the appropriate use of cognitive enhancers that was developed through consistent and frequent experience of this virtues-based institutional rule. Humans are able to make rapid and often accurate evaluations of a situation without conscious awareness of their reasons for doing so. In an experiment called the *Iowa Gambling Task*,

participants could choose cards from two decks of cards, either being rewarded or losing money, and participants were frequently asked about their decision-making process while measurements of their bodily responses were taken (Bechara, et al. 1997; Bechara et al. 2005; Maia and McClelland 2004; Maia and McClelland 2005; Levy 2007). The cards chosen from deck “A” always resulted in a loss of money, whereas cards from deck “B” always resulted in a reward. This experiment suggested that a person’s bodily responses often indicated a person’s switch in strategy, moving from deck “A” to deck “B”, before the person was able consciously to provide a reason for doing so.

There are controversies surrounding the conclusions that certain researchers have drawn from this experiment in respect to the Somatic Marker Hypothesis (a person’s body provides signals that guide beneficial decision-making) and processes of reasoning (Levy 2007). Yet for the purposes of this chapter, what this experiment does suggest is that in certain situations, likely many situations, a person’s evaluations are done without her consciously being aware of it. Thus, it is more than possible that were Edith to develop an automatic mental process for evaluating the appropriate use of cognitive enhancers, she could make a choice about the use of an enhancement and not be consciously aware of it.⁸³

This virtues-based institutional rule in academic institutions could shape students’ processes of reasoning about the use of cognitive enhancers. This shaping of students’ process reasoning can be explicit, by making motivation and character prominent rational

⁸³ This implication is likely to make many people uncomfortable since the assumption is that if there is anything that a person has complete control over it is their reasoning process. Yet it is important to note that the claim is not that humans have no control over their reasoning processes but simply a modest claim, backed by empirical evidence, that humans simply do not have complete or absolute control over their reasoning process. Were it the case that humans did have complete control, then the suggested attempts to suppress certain thoughts would not clinically be shown to be so futile (Wegner 1989).

considerations, or implicit, by working so that students develop an automatic mental process about the appropriate use of cognitive enhancers. By shaping students' practical reasoning in this way, students currently in academic institutions would begin to think about the use of enhancements as the kind of student wanted in academia would. The kind of student to want in academia, the right sort of student, does not use cognitive enhancers in all situations regardless of the circumstances, or only for reasons of instrumental benefit, or because the institutional rules, for example, permit them. The right sort of student is able to consider the relevant information in a given situation, assess the relevant considerations, and act accordingly.

Although this virtues-based institutional rule would shape the way academic institutions think about using cognitive enhancers, it does not mean that under this rule students would become virtuous. It also does not mean that after implementing this rule, students will always make the correct assessments about the appropriate use of cognitive enhancers. Instead, implementing this virtues-based institutional rule offers a way for motivation and character to be included within the discussion of enhancement in academia. The importance of including motivation and character is illustrated by the fact that we are not troubled (or at least are troubled less) by the thought of a virtuous student using a cognitive enhancer because, in part, *they have* the right reasons for using them, and this is reflective of good character. The uneasiness about the use of cognitive enhancers among students in academic institutions currently is because the students are thought to lack proper motivations and the good character to use cognitive enhancers appropriately.

Although many students in our existing academic institutions are likely to lack proper motivation or good character when using cognitive enhancers, this does not diminish the importance of these considerations. Administrators, faculty, and staff in academia should work to implement institutional rules that, at a minimum, strive toward promoting the motivations and character that strive toward attaining understanding. As Xunzi eloquently states, academia is the way to develop and transform students to think about things (here the use of enhancements) so that they do so in the correct manner:

If the man in the street applies himself to training and studying, concentrates his mind and will, and considers and examines things carefully, continuing his efforts over a long period of time and accumulating good acts without stop, then he can achieve a godlike understanding and form a triad with heaven and earth. (Tzun, *Man's Nature is Evil* 1963, 170)

According to this research project, we want to have students use cognitive enhancers in the same way that the kind of students we want in academia would use them. We want students to use cognitive enhancers for the right motivations and in a way reflective of good character. To do this, we need to have the resolution and courage to change our institutional rules and policies to transform existing students into the kind of students we want by relying on the ideals of human excellence.

4.11 Resisting Simplification

I conclude this chapter by discussing the final advantage of this virtues-based approach and institutional rule. By acknowledging the complexity of enhancement use in academia, this virtues-based approach and institutional rule understand that there are limitations to the amount of clarity that can be brought to issues of enhancement in academia. Enhancement in academia is inherently complex, and one should resist simplification. For the moment, put aside this virtues-based approach and institutional

rule and consider the following example as illustrating at least some of the ambiguity and complexity.

Nora and David both have an exam in their Wittgenstein course in two weeks. Nora is a senior with an impeccable GPA, and if she gets an “A” on the exam, she likely will graduate *magna cum laude*. Graduating *magna cum laude* is not only a highly respected academic achievement, but it is also an academic achievement that greatly improves her chances of getting into a top-tier medical school. Nora has a legal prescription for cognitive enhancers that is specifically for enhancement purposes from a neurologist. Typically she enjoys academic activities and learning, but currently she has difficulty understanding Wittgenstein’s arguments and is often distracted by all of her prep work for the Medical College Admission Test.

David is a senior who does not have an impeccable GPA and most certainly will not graduate *magna cum laude*. David does not like Wittgenstein or any academic activities, for the most part. What David does enjoy is crunching numbers on spreadsheets, and he already has a job lined up contingent upon graduating. To graduate all David needs is a “D” on his Wittgenstein exam. David does have a legal prescription for cognitive enhancers, but these enhancements give him a headache, and the efficacy of these enhancements in understanding Wittgenstein is not proven.

Two weeks ahead of this Wittgenstein exam, both Nora and David have to decide whether or not to use cognitive enhancers and begin studying for the exam. What should Nora and David do?

Nora and David’s case illustrates caution against claims that it is easy to identify the important considerations for whether or not to use a cognitive enhancer. Is it the

consequences of graduating *magna cum laude* and going to medical school or simply graduating? Is it having a legally obtained prescription or that this legal prescription is being used for enhancement? Or is it Nora and David's motivations for using cognitive enhancers? Opaque motivations are serious problems in student use of enhancements because some evidence has shown that students rely on self-diagnosis of ADHD as a rationalization for using cognitive enhancers (Judson and Langdon 2009).

The difficulty in identifying considerations does not suggest that these institutional rules are unable to govern the use of enhancement. Instead, this difficulty suggests caution for any approach or institutional rule attempting to always and in every case claim that it has identified the most important consideration for students. Such an approach or institutional rule presumes to have identified the most important consideration, and therefore, it has *weighted* rather than *weighed* considerations. Neil Levy, drawing on the work of Robert Nozick, explains the difference between weighting and weighing reasons⁸⁴:

We *weigh* reasons when we try to find out how significant they are for us, given our beliefs, values, plans, goals, and desires. We *weight* reasons when we assign them a *weight* and thereby significance for us, either ignoring any pre-existing weight they might have had or varying it. (Levy 2007, 234)

An approach or institutional rule that weights a particular consideration for all cases is likely to result in student use of enhancements as being either strictly permitted or prohibited. Implementing such a strict institutional rule is problematic. First, strict institutional rules overlook the complexity for students in a given situation. For example, if an institutional rule permits student use of enhancements in all cases, then risks to a student's health and information in that given situation are overlooked and not considered

⁸⁴ (Nozick 1981).

significant. Conversely, if an institutional rule prohibits student use of enhancements in all cases, then the benefits they might provide are overlooked and not considered. Yet Nora and David's cases show that it's important to allow for a broad range of considerations and relevant information.

Moreover, consider Nora and David in their particular circumstances. Imagine that Nora only considered the consequences of graduating *magna cum laude* or that David only considered whether he had legally obtained his prescription. One would think that both Nora and David misjudged or failed to account for all the considerations and relevant information in their circumstances. Just as there are concerns about institutional rules that do not account for a broad range of considerations and relevant information, so one would have concerns if Nora and David did not account for these either.

The second problem is that were an institutional rule to permit or prohibit the use of cognitive enhancers in all cases, then generally speaking there would be many instances in which students would be permitted to use enhancers for bad reasons and students with good motivations would be prohibited from using cognitive enhancers. Yet as argued in this research project, the reasons that students use cognitive enhancers are important: motivations do matter. A student's motivation for using cognitive enhancers is reflective of his character, and both motivation and character are important in academia.

I do concede that this virtues-based institutional rule does not always provide a single, determinate answer as to whether the use of a cognitive enhancer is permitted or prohibited. However, an advantage of this rule is that it acknowledges the complexity of enhancement use in academia. A component of this virtues-based institutional rule is that it offers an ethical outlook. In certain situations, motivations and character may not

always be the most important consideration for a particular student (e.g., Nora and David). However, by focusing on motivation and character, the significance for implementing this virtues-based institutional rule is not in arriving at a single, determinate answer about enhancement; the significance is that this rule aims to develop students in existing academic institutions into the kind of student we want in academia.

Although specifying this kind of student in detail is difficult, it is reasonable—even under non-ideal conditions—to generally take this student to be one who persistently inquires about the information and facts given in academia, assesses these beliefs in respect to the world as it is currently known, and applies the information and facts learned in academia to his life. In a narrow sense, this kind of student neither takes cognitive enhancers to augment their capacities regardless of cost nor takes these enhancements in all situations. This student understands that motivations and character are relevant considerations in their decision of whether or not to use an enhancement. This kind of student is one who would use cognitive enhancers for the right reasons.

This virtues-based approach and institutional rule might be incorrect, implausible, or infeasible for governing and guiding student use of cognitive enhancers. Yet this research project's virtues-based approach and institutional rule does not attempt to reduce the ambiguity and complexity in the discussion of enhancement in academia. While it does not offer a single, determinate answer in all cases, it does allow for the reasons a student is using cognitive enhancers to be a relevant consideration. Moreover, it allows for motivation and character to be included in the discussion of enhancement in academia.

Chapter 5 Conclusion

“Abashed the Devil stood, and felt how awful goodness is, and saw Virtue
in her shape how lovely.”

— John Milton, *Paradise Lost*

5.1 Re-examining the Question of Cheating

This research project outlined three questions and centered on two goals. For the moment, leaving out the question of cheating, I want to consider these questions and goals. The first question was whether student use of cognitive enhancers was permissible. I argued that under existing institutional rules and policies, a student is permitted to use cognitive enhancers. The third question was what the institutional rules should be regarding student use of cognitive enhancers. I offered a virtues-based institutional rule: Students are permitted to use cognitive enhancers if their reasons for using these enhancements are reflective of ideals of human excellence.

The first goal of this research project was to identify problems with the contemporary discussion of enhancement in academia. One problem is that questions about cheating do not properly frame all the considerations in this discussion. As I have argued, while this is an interesting question, it should not frame or be considered the only question in respect to the use of enhancements in academia. The other problem is that existing institutional rules and policies of academic institutions do not decisively determine the permissibility of student use of cognitive-enhancing drugs and seem to conclude that the use of cognitive enhancers is permitted because nothing explicitly prohibits their use.

The second goal of this research project was to offer a systematic approach towards enhancement in academia. I suggested that one approach is from the ideals of human

excellence or virtues. I stipulated a virtues-based approach in which the use of cognitive enhancers is permissible on the grounds that the virtuous student has the right motivations for using cognitive enhancers. A virtuous student, at a minimum, would have the virtues of seeking understanding and accurate beliefs. These virtues, as motivations, are good reasons for using cognitive enhancers and reflective of good character. This virtues-based approach generated an institutional rule for governing student use of enhancement in academia on an ideal conception of academia. Next, I considered this virtues-based institutional rule under non-ideal conditions and held that it could be implemented in existing academic institutions because in many ways, it is similar to an honor code. This virtues-based institutional rule and an honor code both rely on motivations and character for governing and guiding students.

While these are two of the questions and the goals for this research project, I now want to return to the question that was the intellectual impetus for this research project: Is a student who uses cognitive enhancers cheating? If we re-examine the question of cheating within the context of existing institutional rules and policies for governing student use of cognitive enhancers in academia, it becomes clear why this question shouldn't always frame issues of permissibility. Under existing institutional rules and policies in academia, a student who uses cognitive enhancers cannot decisively be determined to be cheating, and as long as these enhancements were legally obtained, it is permissible for students to use them.

Within the context of existing institutional rules and policies, I contend that this virtues-based approach and institutional rule would advance enhancement in academia in two ways. First, it provides a better justification for the permissibility of using

enhancements than do existing institutional rules and policies; second, it offers a way to acknowledge and support significant concerns about the use of enhancements in academia regarding fairness and improving well-being.

However, before illustrating why the question of cheating shouldn't frame issues of permissibility, it is important to understand why this question is so often relied upon to frame issues of permissibility. The question of cheating offers a familiar and straightforward conceptual framework for evaluating the permissibility of enhancement in academia. It is familiar because the use of enhancements in athletics is also commonly framed as being a question of cheating: Is an athlete cheating when using a biomedical technology or medical procedure during a sports competition? For many people, their first encounter with biomedical technologies and medical procedures used for enhancement is in athletics and is typically framed as a question of cheating. Recent and rather public revelations and investigations into prominent athletes such as Lance Armstrong, Barry Bonds, Marion Jones, Mark McGuire, and many others illustrated the context in which the permissibility of enhancements is discussed.

Also, it is admittedly easy to think about enhancements in academia in the same way as enhancements in athletics. For example, a student using a cognitive enhancer is cheating in the same way that an athlete is cheating by using a performance-enhancing drug such as steroids; or alternatively, a student using cognitive enhancers is not cheating in the same way that an athlete using performance-enhancing technologies or medical procedures such as sleeping in a hyperbaric oxygen chamber is not cheating.⁸⁵ I think but do not argue here that the overlap between academia and athletics is often exaggerated

⁸⁵ Hard-cased hyperbaric oxygen chamber's provide 100% oxygen and have been used to assist patients after surgeries. Soft-cased hyperbaric chambers that professional athletes use only provide 40% oxygen, and it is not clear how much they do help the athletes.

greatly, and analogies between academia and athletics reinforce misperceptions about biomedical technologies or medical procedures. Yet it cannot be ignored that people naturally frame the permissibility of student use of enhancements in academia to something seemingly similar—the use of enhancements in athletics—and familiar as a question of cheating.

As mentioned in Chapter Three, the question of cheating also provides a straightforward conceptual framework for evaluating a student's use of cognitive enhancers. This conceptual framework focuses on evaluating students' discrete acts (did a student use a cognitive enhancer?) and holds that cheating is an act regarded as being wrong under normal conditions. Thus, this conceptual framework provides a straightforward way of thinking about enhancement in academia: a student who uses a cognitive enhancer is cheating and is wrong to do so.

However, by re-examining the question of cheating, specifically its conceptual framework, it becomes clear that framing the use of enhancements in academia as cheating does not encapsulate many salient considerations. First, because focusing on students' acts is rather straightforward, too much is left out of the assessment. For the sake of argument, let's assume that using a cognitive enhancer in academia is cheating and that a student was caught using an enhancement. Now, evaluating the student's act is straightforward, and it would seem irrelevant for assessment purposes to consider the student's year in the academic institution. Yet this information might change the assessment of this student. If the student were a senior, then their cheating seems worse because, unlike freshmen, more is expected of seniors. In this case, while either a freshman or senior would have been wrong to use cognitive enhancers, it seems

reasonable that the severity of the assessment of the student would change depending on the student's academic level.

Second, an act (or action) that is cheating is considered wrong under normal conditions. A reason it is wrong is that under normal conditions, there is a rule prohibiting it. It is reasonable to hold that under normal (existing) conditions, there would be institutional rules or policies stipulating, or at least indicating, that the use of cognitive enhancers is cheating.⁸⁶ Yet few academic institutions⁸⁷ have a rule or policy stipulating that a student who uses a cognitive enhancer is cheating.

By re-examining the question of cheating, it becomes evident that there are significant problems with framing the permissibility of student use of enhancements in academia in regards to cheating. The framework of the question of cheating does not include salient considerations such as information relevant in that given situation, and there are few, if any, existing academic institutional rules or policies that stipulate that student use of enhancement as cheating.

The question of cheating does not resolve issues of permissibility for student use of enhancements in academia. This again pushes for further re-examination of existing institutional rules or policies about enhancements in academia. Most, if not all academic institutions do have rules that prohibit a student from using an illegal drug during academic activities.

Although students are not permitted to use illegally obtained pharmaceuticals, I have argued that relying on a legal prescription or the notion of misusing cognitive enhancers

⁸⁶ The familiarity between assessing the use of enhancements in athletics and academia is unhelpful. A particular sport often has explicit institutional rules and policies (I would include etiquette as policy) that constitute a certain act as cheating.

⁸⁷ I know of no academic institution that directly stipulates that the use of cognitive enhancers is cheating, but it is possible that there exist at least one or two that do have such a rule.

leads problems establishing permissibility. First, a legal prescription is often an unreliable factor for determining the permissibility of a student's use of cognitive enhancers because obtaining a legal prescription rests on a difficult diagnosis by a medical professional or, in many cases, on a particular medical professional's personal discretion regarding enhancement. Second, an institutional rule concerning illegal drugs that relies on a conception of misuse supposes that off-label use of prescription pharmaceuticals *always* constitutes misuse. This perception of misuse is inaccurate because off-label use of pharmaceuticals is a common, accepted, and often-necessary practice in medicine. The point is not that off-label use of cognitive enhancers is always justified, but rather that it is not clear that just because the use of these cognitive enhancers is off label, it automatically makes it a misuse (Dresser and Frader 2009). Therefore, if an academic institution operates under existing institutional rules and policies, it does seem permissible for students to use legally obtained cognitive enhancers.

This re-examination of the question of cheating within existing rules and policies shows that a student is permitted to use cognitive enhancers and is not cheating in doing so. Now consider if this virtues-based institutional rule were implemented in existing academic institutions that are operating with these rules and policies. According to this rule, a student is permitted to use cognitive enhancers as long as (i) these prescription pharmaceuticals were legally obtained and (ii) a student's reasons for using them were for self-improvement, or seeking understanding and accurate beliefs. This virtues-based institutional rule is consistent with existing rules and policies in academic institutions and does not consider students to be cheating when using an enhancement.

Now consider that in respect to the contemporary discussion of enhancement in academia, this virtues-based approach and institutional rule advances in two ways. First, it provides a better justification for the permissibility of using enhancements than do existing rules and policies; second, it offers a way to acknowledge and support concerns about fairness and improving well-being.

5.2 Permissibility by Default

To begin, consider the justification for permissibility as provided by existing rules and policies: students are permitted to use cognitive enhancers because unless they are illegally obtained, there are no institutional rules and policies that directly govern or prohibit them. The permissibility of using enhancements in academia is what I refer to as *permissibility by default*. Generally speaking, the justification for students being permitted to use enhancements in academia is that there are no institutional rules or policies that prohibit them from doing so. In the case of enhancement in academia, permissibility by default is a problem.

To be clear, I am not claiming that permissibility by default is always a problem. In many circumstances, permissibility by default is an acceptable justification. Institutions and institutional rules cannot stipulate all permissible actions. Yet there are some circumstances in which permissibility by default is not a good justification.

The following example illustrates the difference in circumstances in which permissibility by default is, and then is not, considered a good justification. Imagine that Oliver is sitting in his Wittgenstein class daydreaming. Oliver is not breaking a rule by daydreaming because there is no institutional rule that prohibits Oliver from daydreaming, making permissibility by default an acceptable justification. Now imagine

that Oliver is using a cognitive enhancer instead of daydreaming. The lack of institutional rules or policies prohibiting Oliver from using a cognitive enhancer is the justification for Oliver being permitted to use enhancements.

However, a relevant difference is that permissibility by default does seem to be a good reason for Oliver being permitted to daydream, but it does not seem to be a good reason for him to use cognitive enhancers. Cognitive enhancers are powerful psychotropic pharmaceutical agents that impact—both positively and negatively—a student’s neurological system, overall health, academic career, and well-being. The impacts for students who use cognitive enhancers in academia are such that the circumstances under which a student uses an enhancement at least needs a good reason for justification—rather than simply the lack of an institutional rule prohibiting them. In respect to student use of enhancements, permissibility by default does not seem to be a good reason for justifying permissibility.

Some might think that needing a good reason for the justification of using enhancements in academia is too demanding. If existing rules and policies permit the use of enhancements, even if it is permissibility by default, then students should be allowed to use cognitive enhancers as they see fit. This position could be further supported by drawing on John Stuart Mill’s notion of *experiment of living*. For Mill, the individuality of a person, the freedom to choose his or her own actions, is a central component for well-being:

If a person possesses any tolerable amount of common sense and experience, his own mode of laying out his existence is the best, not because it is the best in itself, but because it is his own mode . . . it is only the cultivation of individuality which produces, or can produce, well-developed humans. (Mill 2008, 86-87)

A reason against setting strict limitations on permissible actions is because of the value of personal freedom and our infallibility. In this way, people are all engaged in experiments of living. As Mill notes,

[S]o is it that there should be different experiments of living; that free scope should be given to varieties of character, short of injury to others; and that the worth of different modes of life should be proved practically, when any one thinks fit to try them. (Mill 2008, 72)

In respect to students and cognitive enhancers, one could hold a view that as long as students do not injure others and there is no institutional rule directly prohibiting them from using cognitive enhancers, then permissibility by default is the reason for justifying permissibility. Moreover, that there is no institutional prohibition is also the means for justifying the permissibility of cognitive enhancers. In this way, the use of enhancements in academia can be thought of as an experiment of living.

This view is philosophically strong and matches many inclinations people may have about the use of enhancement. Preserving students' well-being by not restricting their freedom of choice is not only instrumentally beneficial but also good for its own sake. However, despite the initial appeal of this view, the circumstances of students in academia and their use of enhancements provide reasons for doubting this view.

First, individuality is a central element of a person's well-being. However, as an institution, academia is designed to regularly limit and restrict students' freedom of choice. Some of the ways it does so are rather mundane, such as only offering certain courses or scheduling classes at certain times. Other ways are far more controversial, such as speech codes or the expression of certain attitudes or beliefs, (e.g., overtly racist or misogynistic speech or beliefs).

It might be that some of the more controversial ways—and mundane ways as well—turn out to be too limiting or restrictive of students' freedom of choice. Nonetheless, that academia has the institutional power to limit and restrict students' individuality is not controversial or surprising. When a person is a student in academia and occupying a specific identity or role, the student is accountable for following these rules and policies (Akerlof and Kranton 2005; Feldman 1981; Strike 1983). Moreover, as previously mentioned, occupying the identity or role of a student means that a student is accountable to certain rules and policies that other persons outside the institution are not. So the view that limiting or restricting students' freedom to use cognitive enhancers is incorrect because it infringes on students' individuality seems to misunderstand academia as an institution and the responsibilities of being a student at such an institution.

The second reason is that there are significant difficulties when thinking about student use of enhancements as being an experiment in living. By definition, an experiment is a procedure to test a hypothesis or make a discovery. In this experiment in living view, the hypothesis is that allowing all students to use cognitive enhancers will be practically beneficial for some students and that it increases students' individuality. However, when setting up a legitimate experiment, it is also prudent to consider the past history of an experiment. The past history of accepted and promoted pharmaceutical enhancements poses a problem because it has been disastrous. Previously touted and accepted cognitive enhancers such as cocaine and amphetamines have been empirically proven to be more harmful than beneficial when used as cognitive enhancements (Bell, Lucke and Hall 2012). At the beginning of the twentieth-century, cocaine was regularly promoted for its ability to augment mental performance, increase focus, and provide high levels of energy

(Spillane 2000). The promotion and acceptance of cocaine was due in part to overestimating its properties of cognitive enhancement. After cocaine fell out of favor, amphetamines were regarded as the next pharmaceutical cognitive enhancement and were introduced to those outside of the military after World War II (Rasmussen 2008). During World War II and even currently, amphetamines were used to maintain or improve soldiers' levels of alertness and counteract fatigue. Following World War II, amphetamines were introduced to the general population by returning soldiers and, as with cocaine previously, were embraced for a wide range of uses. In Great Britain in the 1960s,

About one third of amphetamine prescriptions were for weight loss, one third for clear-cut psychiatric disorders (depression, anxiety), and the remaining third for ambiguous, mostly psychiatric and psychosomatic complaints (tiredness, nonspecific pain). (Rasmussen 2008, 977)

While cocaine and amphetamines were once accepted and promoted as pharmaceutical cognitive enhancers, empirical evidence shows little benefit and substantial, unwarranted health risks. To be clear, a past result is not a clear indication that current or future pharmaceutical enhancements will fail. Nonetheless, the history of cognitive enhancers does suggest that making them permissible for all students to use will end poorly.

The view that permitting all students to use cognitive enhancements in academia endorses students' individuality as an element of well-being and is an experiment of living has strong appeal. However, it overlooks that as an institution, academia limits students' freedom of choice; also, in respect to cognitive enhancers, it does not seem

prudent or sensitive considering past history to allow students to be phase 1 participants for pharmaceutical cognitive enhancements.⁸⁸

This is not to claim that cognitive enhancers should be prohibited but rather that if students are going to be permitted to use cognitive enhancers, then permissibility needs to be justified by something more than default. I am not claiming that (i) permissibility by default is always a bad reason for justification, (ii) limiting or restricting students' freedom of choice is always a good thing, or (iii) harmful and negative impacts on students' health or well-being are always cause for restricting the permissibility of certain actions. Instead, the argument is that because of the circumstances of academia, permissibility of cognitive enhancers by default is simply not a good justification for existing rules and policies.

I suggest that this virtues-based approach and institutional rule offers a better justification than permissibility by default. According to the virtues-based approach, a virtuous student chooses to use cognitive enhancers after assessing the relevant information and considerations in a situation. In a given situation, the virtuous student assesses the relevant considerations pertaining to existing rules or policies, consequences (benefits versus risks), and their motivations. Permissibility rests upon the virtuous student having sufficiently proper motivations of self-improvement, or seeking understanding or accurate beliefs, for using cognitive enhancers. That these motivations are regarded as being good reasons for using cognitive enhancers and reflect well on the character of the student makes using cognitive enhancers permissible. This claim about permissibility is rather modest; in comparison to permissibility by default, it offers a

⁸⁸ A phase 1 drug trial only tests for safety and is neither curative nor considered a therapeutic treatment. However, many patients hold the "therapeutic misconception" and mistakenly enroll in phase 1 trials thinking they may be cured of their disease.

better justification for permissibility. I am not arguing that a virtues-based approach is the only way to justify the permissibility of cognitive enhancers. However, having permissibility be determined by motivations of self-improvement, or seeking understanding and accurate beliefs, does seem like a good justification for permissibility. Therefore, the first benefit of implementing this virtues-based institutional rule is that it offers a better justification for the permissibility of using cognitive enhancers under existing rules and policies.

5.3 Concerns of Fairness and Well-being

The second benefit of implementing this virtues-based institutional rule is that it supports concerns about fairness and improving well-being. I regard these concerns as being central, if not the impetuses, for the arguments that were attempting to answer the question of cheating. To demonstrate how fairness and improving well-being could be the central concerns in answering the question of cheating, consider the following. If one could show that the use of cognitive enhancers is decisively determined to be cheating (or not), then academia and academic institutional rules and policies would have to be altered in respect to this conclusion. If students using cognitive enhancers were cheating because the enhancers provide an unfair competitive advantage, existing institutional rules and policies would need to address concerns of enhancement and fairness. Alternatively, if students using cognitive enhancers were not cheating because these enhancements resulted in better goods, services, and scientific discoveries, then existing institutional rules and policies would have to address concerns about improving well-being. In the following, beginning with those who think that a student who uses a cognitive enhancer

is cheating, I show in detail how this virtues-based approach and institutional rule are able to acknowledge and support concerns about fairness and improvement of well-being.

For those who think that a student who uses a cognitive enhancer is cheating, their central concern is often about fairness. Their mistake is addressing fairness in terms of competitive advantage at the level of a student rather than at the institutional level. To consider cheating at the level of a student requires providing a relevant distinction between the advantages provided by cognitive enhancers from those provided by coffee, caffeine-based energy drinks, laptops, and quiet apartments.

Assessing a student's use of cognitive enhancers in respect to competitive advantage does not indicate whether using this enhancement is wrong. If drinking coffee improves focus and concentration and this provides a competitive advantage, it does not follow that a student is wrong to drink it. Similarly, while using a cognitive enhancer improves focus and concentration and this provides a competitive advantage, it does not follow that a student is wrong to use it. This conclusion, however, does not mean that concerns about fairness are without merit. There is a sense, even if only as an intuition or pre-reflective judgment, that something about using cognitive enhancers is unfair.

The strength of this intuition indicates the need to address these concerns about fairness and the use of enhancements not at the level of a student but instead at the level of distributive justice.⁸⁹ One could hold that because access to cognitive enhancers is often largely determined by the social lottery — meaning the reasons a student was born into one socio-economic class was luck rather than merit — then certain students will systematically be provided greater access than others.

⁸⁹ Arthur Caplan argues that an unfair distribution does not mean that it is wrong to use (Caplan 2009).

How is a virtues-based approach and institutional rule meant to govern and guide student use of cognitive enhancers to acknowledge and support these complex notions of fairness? It is admittedly difficult for an institutional rule focusing on governing and guiding the use of enhancements at the level of students always to acknowledge and support concerns about fairness or about a pattern of inequity in distribution. Yet it is not impossible; because it is focused on governing and guiding students does not mean an institutional rule is unable to account for concerns about the fairness. By allowing for fairness to be regarded as relevant information in a student's assessment of whether or not to use an enhancement, this virtues-based institutional rule recognizes fairness as being important. Identifying a concern *is a way* to support a concern.

One modest way this virtues-based institutional rule can allow for considerations of fairness to be supported is by relying on the notion of a virtuous student. A virtuous student would consider fairness to be a relevant consideration. A pattern of inequity in the distribution of these enhancements is a relevant consideration for a virtuous student because his concern is not only about whether or not he is permitted to use an enhancement but also about how using this enhancement reflects on the sort of person he is. A virtuous student might choose not to use an enhancement because his use reinforces a pattern of inequity. Moreover, fairness could be understood in a context besides a pattern of an inequity to access and instead as a consideration about material resources. A virtuous student is not going to use enhancements if his use of an enhancement deprives another student that needed this psychotropic pharmaceutical as treatment for a condition or disorder. The following example illustrates the manner in which a virtues-based

institutional rule could incorporate concerns of fairness and use them to govern and guide real, non-virtuous, students.

Imagine Edith and Teresa are not only roommates but also in the same Wittgenstein class. Edith and Teresa prepare for an exam and both use cognitive enhancers. The difference is that Edith uses hers for enhancement and Teresa uses hers for treatment of a condition or disorder. Although both just ran out of their cognitive enhancers, they are preparing to get their prescriptions filled. However, because of a recent shortage, Edith and Teresa find out that their local pharmacy does not have enough cognitive enhancers in stock for both prescriptions to be refilled. Since this situation involves the use of cognitive enhancers and Edith is using them for enhancement, she adopts the ethical outlook of a virtuous student.

Were Edith to get her prescription filled, she would neither have cheated nor done anything impermissible. But by adopting the ethical outlook of a virtuous student, she makes fairness relevant in her given situation. A virtuous person would, at a minimum, consider the lack of material resources in her assessment and in following this virtues-based institutional rule, so would Edith. This virtues-based institutional rule acknowledges and supports concerns of fairness regarding the use of enhancements in academia.

For those who think that a student who uses a cognitive enhancer is not cheating, the challenge in valuing education solely for instrumental benefits misrepresents all the reasons that it is valued. However, although this argument was incorrect in expressing the value of enhancement solely in instrumental terms, a central concern for this argument is articulating the value of these cognitive enhancers in improving well-being for humanity.

By this I mean that enhancements, even those that only provide moderate augmentation such as cognitive enhancers, could make all of our lives better. By definition, enhancement is something good. Improving our capacities of focus and concentration, generally speaking, is a good thing. Beyond the walls of academic institutions, particularly in the United States and other developed nations, improving one's capacities of focus and concentration specifically for education is instrumentally beneficial and good for its own sake.

Administrators, staff, faculty, and institutional rules and policies should not overlook the significance of permitting students to use enhancements because augmenting students' capacities of focus and concentration, even if only moderately, could likely result in assisting the development of intellectual capacities and understanding. Advances in technologies, broadly ranging from faster computers to Internet access to recent discoveries in neuroscience to child development regarding learning, have already been shown to be tremendously beneficial to students in academia.⁹⁰ The greater enrollment of students currently in academia shows that advances in technologies can be beneficial for students. The benefits of cognitive enhancers for students if they augment capacities of focus and concentration, even if moderately, would likely be great.

This virtues-based institutional rule accounts for this concern because a virtuous student knows that in certain situations, these cognitive enhancers can assist them. This

⁹⁰ Case in point: it has been established, with twenty years of testing and documentation, that I am learning disabled to the point that I have legal protection under the Americans with Disabilities Act. In fact, not only is the level of severity of my phonological learning disability rather rare, but the level of academic achievement is quite unique. That I have made it this far is a credit to technological advances; computers and software; institutional changes in educational programs in middle school, high school, and undergraduate studies; and advances in neuroscience. Sadly, this credit has to be tampered because I cannot credit a single university or department in my post-undergraduate career that was accepting and understanding of the difficulties of this disability. This, at least to me, is an indication that academia has quite a ways to go to meet the needs of disabled students.

virtues-based approach allows for the consequences—in this case the benefits—of using enhancements to be a consideration for a virtuous student. For reasons of making the topic manageable, this project has explicated the relevancy of consequences only in a limited way. Nonetheless, that cognitive enhancers could result in better goods, services, and scientific discoveries would be a relevant consideration, even for an ideal virtuous student. Consider that depending on the relevant information in a given situation, a virtuous student might choose to use a cognitive enhancer because the consequences of doing so are of such a magnitude. The virtues-based approach and institutional rule do not hold that consequences should not be a relevant consideration, only that it is not consequences alone that would be considered by a virtuous person. Thus, this virtues-based approach and institutional rule supports concerns about improving well-being by making the consequences a significant consideration in respect to using enhancements.

Therefore, by starting with a re-examination of the question of cheating, it is clear that under existing academic institutional rules and policies, the use of cognitive enhancers is not cheating and, as long as they are legally obtained, is permissible. This virtues-based approach and institutional rule is not only consistent with existing rules and policies regarding the use of cognitive enhancers but provides two benefits if implemented in current academic institutions. First, it provides a better justification for the permissibility of using cognitive enhancers, and, second, it acknowledges and supports concerns about fairness and improving well-being.

5.4 The Virtuous Approach Towards Cognitive Enhancers

According to Aristotle, a “discussion will be adequate if it has as much clearness as the subject matter admits of” (NE 1.3 1094^{b12-13}). The discussion of enhancement in

academia—focusing on the subject matter of permissibility, cheating, and what the institutional rules should be—is not only ambiguous and complex but one we should resist simplifying. Not only is education something that is good both instrumentally and for its own sake; the ideals of human excellence are as well. J. B. Schneid holds that,

[V]irtue is natural to humans, not in the sense that it need be learned or that it is easy to acquire, but in the sense that virtuous agents individually, as well as the community they compose, benefit from virtue. This fact indicates our social nature. Living alone, and living without virtue, are both harmful to us. (Schneid 1997, 178)

Considering the value of education and virtues, it is reasonable to want students in academia to possess certain virtues. Were these students to use cognitive enhancers, it would be for reasons of self-improvement, or seeking understanding and accurate beliefs. Whether or not a student could develop these virtues is important. The assessment of a person or their actions is not complete if the person's motivation and character are not included as relevant considerations. It seems that the assessment of student use of enhancements in academia should be no different. Whether this virtues-based approach is correct or not, any future investigation into enhancement in academia must at some point examine the motivations and character of students.

This virtues-based approach and institutional rule does not always bring clarity and simplicity or, in fact, settle all matters pertaining to enhancement in academia. Yet what this research project has shown is that in respect to issues of enhancement, we should navigate a middle path. We need a path that goes between broad acceptance or rejection, unreflective reception or acquiescence of student use of enhancement in academia. In this research project, I have suggested that the ideals of human excellence or virtues approach

offers not only interesting and unique insights but also a way that compromises between extreme positions regarding student use of cognitive enhancers.

5.5 The Virtuous Approach Towards Neuroenhancement

This research project focused rather narrowly on the issue of student use of cognitive enhancements in academia. Attention was centered on the psychotropic pharmaceuticals that augment a person or their capacities of focus and concentration. However, pharmaceuticals are also used as enhancements for a person's memory and moral capacities. Some pharmaceuticals such as 3,4-methylenedioxy-N-methylamphetamine (MDMA) and propranolol have been shown to be memory attenuating (Cukor, et al. 2009; Lanni, et al. 2008).⁹¹ Oxytocin and vasopressin have been shown to increase attachment bonding between mammals. In some circumstances, it has been suggested that propranolol suppresses implicit racial bias (Terbeck, et al. 2012; Keverne and Curley 2004; Savulescu and Sandberg 2008).

Discussion about the ethical application and limitations of these pharmaceuticals (broadly referred to as *neuroenhancements*) has generated many interesting and differing positions. Even if one were roughly to group positions in respect to whether they think neuroenhancements should be permitted or prohibited, there is a wide range of positions. For those who think that neuroenhancements are permissible, their position is usually grounded in reasons relating to the benefits these pharmaceuticals offer. Some such as Julian Savulescu, Anders Sandberg, and Guy Kahane argue, according to their welfarist approach, that if these neuroenhancements increase the chances of a person leading the

⁹¹ Mentanine has been used in Germany for nearly 25 years to treat memory loss in the elderly and Alzheimer's disease, but it has not been tested on persons whose memory is functioning proficiently (Lipton 2006).

good life, they should be made available (Savulescu, Sandberg and Kahane 2011; Kahane and Savulescu 2009). Others such as Thomas Douglas (2008) argue that augmenting a person's moral capacities via neuroenhancement is no different from and possibly better than traditional methods such as education for developing an individual's moral capacities. Going a step further, Ingmar Persson and Julian Savulescu (2008) argue that society has a moral imperative to focus on developing and making available moral neuroenhancements to improve the character of humanity.

For those who think that neuroenhancements are impermissible, their positions are usually grounded on reasons relating to pharmaceutical manipulation of the human condition. Some such as Michael Sandel (2007) argue that the use of neuroenhancements is a sign of human hubris because it illustrates a refusal to accept certain limitations in our abilities. Others such as Francis Fukuyama (2002) go one step further and argue that neuroenhancement poses the greatest threat to humanity because in manipulating ourselves, there is a chance that humanity will lose the properties that make us unique.

In regard to these memory and moral neuroenhancements, I have only provided positions on opposite ends of the permissibility spectrum.⁹² Yet any attempt to understand the role, application, and limitations of neuroenhancement is going to be confounded by three problems: complexity, philosophical overextension, and the potential for biases in explanation.

As neuroscience progresses, its research and discoveries provide a rich but complex picture of the human brain. Recent empirical studies and research challenge fundamental notions about our lives, such as human volition. Consider personal self-control, the

⁹² In respect to moral enhancements, some such as John Harris and Chris Zarpentine contend that we should not be so certain that pharmaceuticals would work better than traditional methods of moral development (Harris 2011; Zarpentine 2012).

ability to refrain from certain behavior. In what is referred to as ego-depletion, a person refraining from one kind of action, such as not eating a cookie or keeping a straight face while watching a funny video, has a marked decreased ability for self-control in other situations, such as grip strength or problem-solving (Baumeister, et al. 1998; Baumeister 2002; Schmeichel and Baumeister 2004; Vohs and Heatherton 2000). While it is not controversial to think that self-control is often dependent on social situations, what is surprising is that self-control is only a finite resource and, in some cases, not simply a matter of one's own volition. In addition, there are certain psychiatric conditions such as Tourette's syndrome, Anorexia Nervosa, and some instances of Borderline personality disorder that result in compulsive desires building up and, crudely put, overriding an individual's volition. What is interesting is the broad range of compulsive actions, not simply behaviors, that occurs: experiencing a tic, desiring to not eat, and deliberately ingesting sharp objects (Leckman, King and Cohen 1999; Klein 2012; Kwok, Matorin and Kahn 2012; Campbell and Aulisio 2012; Henderson 2005).

My point is not to argue that people lack free will (although we might) but rather to illustrate that neuroscience has shown that many fundamental notions about the human experience, such as volitional control, are complex and unable to be neatly categorized.

The second problem is that philosophers have a tendency to overextend the claims that recent research and advances in neuroscience support. For example, consider Joshua Greene and Jonathan Haidt's work on the neuroscience of moral judgment. Greene relies on fMRIs of participants when they are providing answers to moral dilemmas (Trolley and Footbridge cases), and Haidt has examined students' responses to moral violations from across different cultures and educational levels (Greene, et al. 2001; Greene 2003;

Haidt, Koller and Dias 1993; Haidt 2003; Schnall, et al. 2008). Both Green and Haidt have argued as the basis of their research on the neuroscience of moral judgment, what Neil Levy refers to as the *deflationary account of morality* (Levy 2007). By Haidt and Greene's accounts, morality is reducible to intuition, which in turn is only an affective, not rational, response that is the result of biological and evolutionary hardwiring. If moral judgments are based upon intuitions, which are emotional and part of evolutionary hardwiring, then it is not evident that they track morally relevant features in the world. If this is the case, then theories of morality that are rationally based, such as deontology or those of Kant, or theories that hold that there can be reflective equilibrium between theory and intuition, such as those of Rawls, seem to be unjustified. If a person's moral intuitions are merely the product of evolutionary hardwiring, then deontologists or Kantian thinkers cannot hold that morality and moral judgment are fundamentally reason-based. If a person's moral intuitions are merely the product of evolutionary hardwiring, then it seems there cannot be, as Rawls (1999) claims, reflective equilibrium between our theories and intuitions. For Greene and Haidt, a deflationary account of morality holds that being moral is merely a part of our evolutionary hardwiring.

Nevertheless, while Greene and Haidt's work shows that intuitions are often the result of biological and evolutionary hardwiring and affect moral judgments, it is not clear how this research supports Greene and Haidt's conclusions about morality and moral theories. Kahane and Shackel argue that Greene has methodological flaws that result in his work not sufficiently appreciating the "step from philosophical discourse to the ascription of belief to lay persons" (Kahane and Shackel 2010, 580). Neil Levy (2007) contends that

neuroscience has shown that intuitions, even if emotional and not rational, are relevant considerations that guide decisions and moral judgments.

While I remain neutral on this debate about the neuroscience of moral judgment and moral theory, I believe that Greene and Haidt's work is indicative of an overextension of neuroscience to support conclusions, particularly philosophical conclusions. It is not yet clear that Greene and Haidt's research shows that deontological or Kant's moral theory is not justified or that intuitions or theory cannot achieve reflective equilibrium.

The final problem, which combines complexity and philosophical overextension, is what I refer to as *the potential for biases in explanation*. It has been shown that even when presented with a good explanation that uses no neuroscience research and a bad explanation that relies on irrelevant neuroscience research, persons prefer the bad neuroscience explanation (Weisberg, et al. 2008). This is not surprising since people commonly prefer certain types of explanations despite a type of explanation being fundamentally flawed when used to explain a particular thing (Keil 2006). What is troubling is that people are more likely to exonerate a person's behavior and actions if they are explained in respect to physiological causes such as the neurology of the brain than if they are explained in respect to psychological causes (Monterosso, Royzman and Schwartz 2005). Monterosso, Royzman and Schwartz (2005, 2012) refer to this phenomenon as *naïve dualism*, the idea that in the human brain, psychological and physiological causes are categorically distinct. Stephen J. Morse (2005) contends that this is a significant problem when neuroscience mechanistic explanations (physiological

causes) are given credit over reason-giving explanations (psychological causes) when assessing legal responsibility.⁹³

All three of these problems are present to some degree when attempting to understand the ethics, role, application, and limitations of neuroenhancements. Our current understanding of neurology shows that we barely understand human cognition let alone our cognitive, memory, or moral capacities.⁹⁴ The role that our executive function and memory play in cognition and a pharmaceutical's effect on these capacities and cognition will be complicated. Moreover, caution is needed when assessing a pharmaceutical's affect on a person or on their cognitive, memory, or moral capacities so as to not overextend this evidence when being applied for (or against) particular philosophical positions.

In an assessment of the ethics of neuroenhancement, there is a great potential for one to present a biased explanation. When using empirical evidence about the effects of pharmaceuticals on a person's cognitive, memory, and—in particular—moral capacities, it is easy to rely on neuroscience mechanistic explanations (physiological causes) rather

⁹³ There is another problem, and this concerns the role of clinicians (medical professionals) and advances in neuroscience and neuroenhancement, in particular issues centering on patients' responsibility and care. I suggest but do not argue here for adapting Eran Klein's framework of strong neuroskepticism as a way for clinicians to approach handling such issues (Klein 2011). In respect to neuroenhancement, Jayne C. Lucke (2012) contends that there is a need to study the attitudes of students, parents, and medical professionals about the use of cognitive enhancers to make the proper and appropriate guidelines and policies. Not only do I endorse Lucke's proposal, but I have already taken preliminary steps in this direction. My study with Robert E. Enck, M.D., and John Bossaer, Pharm.D. (2013), was the first study to examine the attitudes of those training to be medical professionals and only the second study to examine the attitudes of those working in the medical profession about cognitive enhancers. At the University of Texas MD Anderson, I am currently conducting an attitudinal survey that examines medical professionals' attitudes concerning cognitive enhancers, the treatment-enhancement distinction, and off-label prescribing practices. This study's findings will have interesting implications for developing institutional rules and policies for medical professionals about cognitive enhancers, but it also is likely to facilitate the use of cognitive enhancers on chemotherapy-related cognitive dysfunction, crudely referred to as "chemo brain" (Boykoff, Moieni and Subramanian 2009; Hede 2008; Raffa, et al. 2006).

⁹⁴ To illustrate, consider Capgras Delusions, a condition or disorder in which a person believes that their loved one or family have been killed and replaced by aliens, robots, or imposters (Ellis and Lewis 2001). This condition or disorder is the result of an impairment, injury, or disease to the brain's facial recognition system.

than reason-giving explanations (psychological causes). This is because of the complexity of our lives; in other words, there are good reasons for and against a person using neuroenhancements. Consider, on one hand, that altering a person's memories in some situations or assisting people in building more attachment to others or suppressing implicit racism would benefit people's lives and are good reasons for using neuroenhancements. However, on the other hand, it is important to note that pharmaceutically induced attachment is not the same thing as attachment that occurs from love or respect, and chemically suppressing implicit racism or promoting moral behavior seems to bypass difficult matters of personal responsibility and are good reasons against using neuroenhancements.

I suggest that at least one reason for applying the ideals of human excellence or virtues approach to neuroenhancement is that it adequately handles these three problems. The approach handles these problems by focusing less on biomedical technologies, medical procedures, and neuroscience and instead focusing more on the motivations and character of persons. This approach is consistent with other philosophical positions and is at least one element of the normative account of enhancement. Moreover, this approach centers on reason-giving explanations, focusing on motivation and character, and contends that there are good reasons both for and against the use of neuroenhancements in a given situation.

In detail, this ideals of human excellence or virtues approach holds that biomedical technologies and medical procedures can only go so far in enhancing a person or their capacities. This approach does not overestimate recent research and advances by arguing that by taking an enhancement, a person will be smarter or more morally good. Instead of

starting with questions about pharmaceuticals augmenting our capacities or applying the most recent research and advances in neuroscience, the ideals of human excellence or virtues approach begins by examining a person's motivation and character. What are the appropriate reasons for using these neuroenhancements, and how does using them reflect on a person's character? There is value in examining our motivations and character regardless of whether or not one does so in order to use a pharmaceutical.

If we cannot determine the appropriate motivations for using these neuroenhancements, then one needs to ask about the reasons an ideal virtuous person would have for using these pharmaceuticals. It is reasonable to hold that in a given situation, a virtuous person would assess all the information in her circumstances and the relevant considerations and then act accordingly for the right reasons when using a neuroenhancement. The virtuous person, even if an ideal, illustrates that depending on the information and relevant considerations in a given situation, there are good reasons for and against using a neuroenhancement.

If people do not have the correct motivations for using neuroenhancement, then the next step is to consider changing certain institutional rules to re-structure and develop the proper motivations and character of people in respect to using these neuroenhancements. If certain institutional rules are changed, then it seems that a person could come to use neuroenhancements that attenuate their memory, strengthen their bonds of attachment, or suppress implicit racial bias *for the right reasons as a matter of character*. Therefore, as with cognitive enhancers in academia, concerns about the use of neuroenhancements are, in fact, concerns about motivation and character.

Whether it is about the use of cognitive enhancers in academia or neuroenhancements, the ideals of human excellence or virtues matter. All too often, discussions regarding the permissibility of biomedical technologies and medical procedures have focused too narrowly on consequences and rules being the only relevant considerations. Yet as Mo Tzu points out,

Whoever criticizes others must have some alternative to offer them. To criticize and yet offer no alternative is like trying to stop flood with flood or put out fire with fire. It will surely have no effect. (M. Tzu 1963, 39-40)

Therefore, while still retaining consequences and rules as relevant considerations, I offered in this research project a way for motivation and character also to be included. Moreover, I provide a way for the permissibility of using biomedical technologies and medical procedures for enhancement to be grounded in the ideals of human excellence as well as a way of linking an individual's use of enhancements to his or her motivation and character.

This ideals of human excellence or virtues approach is only one approach toward the ethics of enhancement, but it merits serious consideration because it offers interesting and unique insights and helps to explain at least one element of a normative account of enhancement. Although biomedical technologies and medical procedures will continue to progress parallel with issues of permissibility, the significance of a person's motivation and character remains fundamental in the ethics of enhancement.

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