

TRANSFORMATIVE EDUCATION

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ABSTRACT. Universities aspire to offer students a transformative experience, but rarely spell out the nature of this transformation. In this essay, L. A. Paul and John Quiggin frame the successful university education as transformative in the philosophical sense. They explain the way that a successful college education can be understood as generating an individual conceptual revolution, and thus, as a transformative experience. Education can create epistemically transformative change through the process of developing critical thinking skills, leading to conceptual replacement and the discovery of new intellectual frameworks. This epistemic transformation, if deep enough, scales up into a personal transformation. After explicating the nature and structure of transformative education, Paul and Quiggin show how understanding transformation in terms of personal change and awareness of unawareness clarifies the debate over its value.

KEY WORDS. transformative experience; education; college; university; decision; change

INTRODUCTION

A transformative experience changes you epistemically and personally. It's an experience — perhaps short-lived and intense, perhaps gradual yet substantive — that brings about a profound epistemic and personal shift.

Crucially, for an experience to be transformative, it needs to involve a type of experience a person hasn't had before. When the shift is transformative in the intended sense, it involves a discovery and a change in oneself: a new kind of experience that brings an epistemic shift that's deep enough to change your core personal preferences and the nature of your lived experience. In virtue of having the new experience, you undergo an epistemic transformation that leads to a personal transformation.

There is an important type of psychological necessity here: having the experience is necessary for knowing what it is like, and so having the experience is necessary for the relevant type of epistemic shift. Without having the experience, the individual would not be transformed, that is, they would not have these new capacities or experience these changes in psychological attitudes.¹ Undergoing the

1. Frank Jackson, "What Mary Didn't Know," *Journal of Philosophy* 83, no. 5 (1986): 291–295, doi:10.2307/2026143; David Lewis, "What Experience Teaches," in *Mind and Cognition: A Reader*, ed. William Lycan (Oxford: Blackwell, 1990), 499–519; L. A. Paul, *Transformative Experience* (Oxford: Oxford University Press, 2014); and L. A. Paul, "Précis of *Transformative Experience*" and "*Transformative Experience: Replies to Richard Pettigrew, Elizabeth Barnes, and John Campbell*," both in *Philosophy and Phenomenological Research* 91, no. 3 (2015): respectively, 760–765, doi:10.1111/phpr.12249, and 794–813, doi: 10.1111/phpr.12250.

experience involves a distinctive kind of discovery and learning, and this, in turn, creates a distinctive type of epistemic transformation. The epistemic transformation expands the psychological capacities of the individual, functioning as a key that unlocks the door to a trove of additional content about the nature and character of lived experience. As such, it leads to significant changes in a person's values, beliefs, and preferences, generating a personal transformation. In this way, in virtue of having the epistemic transformation, the person changes in some deep and personally fundamental way, for example, some core personal preferences change, or their understanding of their desires, defining intrinsic properties, or values changes.

L. A. Paul develops the notion of the type of radically epistemically transformative experience that is also personally transformative as follows:

The sorts of experiences that *can* change who you are, in the sense of radically changing your point of view (rather than only slightly modifying your preferences), are experiences that are *personally transformative*. Such experiences may include experiencing a horrific physical attack, gaining a new sensory ability, having a traumatic accident, undergoing major surgery, winning an Olympic gold medal, participating in a revolution, having a religious conversion, having a child, experiencing the death of a parent, making a major scientific discovery, or experiencing the death of a child. The experience can be life-changing in that it changes what it is like for you to be you. That is, it can change your point of view, and by extension, your personal preferences, and perhaps even change the kind of person that you are or at least take yourself to be. If an experience changes you enough to substantially change your point of view, thus substantially revising your core preferences or revising how you experience being yourself, it is a personally transformative experience.²

Transformative experiences, as we will use the phrase, are strictly defined as experiences that are epistemically *and* personally transformative in this way. As we noted above, transformative experiences can have varying temporal extents: some transformative experiences are short in duration, and others may extend over many years.

Examples of transformative experiences include the gain or loss of sensory capacities, becoming a parent, living through a pandemic, losing a loved one, emigrating to a country with a radically different culture, and fighting in a war. For instance, a congenitally blind adult who gains vision through retinal surgery will have lived experiences of a type and character that they have never previously experienced. This will lead to changes in some of their core personal preferences. Similarly, a new recruit who goes off to war and has to kill enemy troops, a refugee emigrating from war-torn Syria, or a woman having her first child all have

2. Paul, *Transformative Experience*, 16 (emphasis in original).

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dramatically new types of lived experiences that can bring about deep changes in what they know and care about. Our focus in this article is on another distinctive kind of new experience: the transformative experience of going to college and receiving an education.

COMING OF AGE

Going to college confronts you with all the possibility, excitement, and risk that a transformative change can offer. It holds the promise of new places, new challenges, and a new life. When you went off to college, you can probably remember your sense of excitement about what the future would bring: the promise of having a world of ideas spread out before you, the freedom of having control over your own schedule and your own choices, the thrill of meeting new people and exploring new possibilities.

Going to college, at least in American culture, is framed as a major life event. It is a coming of age moment. It's a time of transition, often the first major step toward becoming a full-fledged, independent adult. When you get ready to go, you know it will be this kind of transition, and that's part of why it's so exciting. But another big part of the excitement comes from the way you *know* you are opening up a whole new chapter in your life, one filled with promise and challenges, but also one whose contents, in an important way, are fundamentally unknown. By moving to a place filled with promise and structured around your intellectual and personal development, by surrounding yourself with new and interesting people and ideas, you give yourself an unparalleled opportunity to grow and discover yourself and the world. You will stretch your mind in new and unexpected directions as you enter a new and exciting stage of your life. What will it be like? Who will you meet? What will you do? A part of you knows that, once you go, you can never come back. After college, your life will never be the same. The person who returns will be different. And this is another essential part of the mystery — and the excitement — of the transition. How will you change? Who will you become?

THE PURPOSE OF HIGHER EDUCATION

In modern societies, the gradual yet substantive transformative experience of developing from infancy to adulthood has generally been coextensive with participation in formal education. The distinctive sense of college as a transformative experience cultivates this gradual cognitive development and emergence of individual character, different for each student. The process is often framed in terms of drawing out or realizing preexisting characteristics through self-discovery, as opposed to fashioning new features in response to external causes. Once education is finished, people are generally treated as adults, with the expectation that they will support themselves through paid work, form households, and, in many cases, have children. While other transformative experiences — notably including that of becoming a parent — may await, transformation to adulthood is officially complete.

This way of thinking about education as part of the process of creating fully formed adults feeds into a debate about the purpose and nature of higher education.

Should college education be transformative? Does such a transformative process realize existing, latent capacities, or does it instead create distinctive new ones?

These questions have precedent. Derek Bok describes an approach, widely accepted in the United States, where the role of university educators is “to shape the environment in which their students live, in and out of the classroom, throughout four formative years.”³ The mission statement of Harvard College, where Bok was formerly President, is explicit: “The mission of Harvard College is to educate the citizens and citizen-leaders for our society. We do this through our commitment to the transformative power of a liberal arts and sciences education.”⁴ Similar phrasing, including reference to some sort of transformation, is found in many other statements of purpose from both universities and national organizations. A brief issued by the National Association of Student Personnel Administrators puts the aim of university education in similar terms: “[S]tudent affairs professionals have a particular responsibility for ensuring that institutions of higher education become true learning communities committed to providing transformative educational experiences for all students.”⁵ The approach is widely embraced by many types of U.S. educational institutions, from the Ivy League, to four-year liberal arts colleges, to flagship state universities, and others. For example, Antioch College, a small liberal arts college in Yellow Springs, Ohio, states that

Students who choose to attend Antioch College crave transformative, real-world experiences. They have an interest in collaboration and community. They want the freedom and flexibility to design an education that prepares them for active professional, political, and social engagement. They want to “win victories for humanity.”⁶

Antioch College, which closed in 2008 (due to declines in enrollment and funding) and then reopened in the fall of 2011, is at the other end of the U.S. private education spectrum from Ivy League universities. Students who choose to attend institutions like Harvard and Yale are looking for intellectual transformation, partly through instruction and partly through their campus experience. Students who choose to attend Antioch want nothing less, although the emphasis is on achieving the transformation through real-world “co-op” experiences in combination with college life.

The commitment to transformation goes beyond mere mission statements. As Douglas Yacek observes:

3. Derek Bok, *Our Underachieving Colleges: A Candid Look at How Much Students Learn and Why They Should Be Learning More* (Princeton, NJ: Princeton University Press, 2008), 60.

4. See “Mission, Vision, and History,” Harvard College, <https://college.harvard.edu/about/mission-vision-history>.

5. Richard P. Keeling, *Learning Reconsidered* (Washington, DC: National Association of Student Personnel Administrators, 2004), 29, https://www.naspa.org/images/uploads/main/Learning_Reconsidered_Report.pdf. See also Douglas C. Yacek’s discussion of this point in his article, “Should Education Be Transformative?,” *Journal of Moral Education* 49, no. 2 (2020): 266.

6. See “Admission,” Antioch College, <https://antiochcollege.edu/admission/>.

At Ohio State University, this idea has become institutional reality in the form of a newly introduced Second-Year Transformational Experience Program (STEP). Similar programs described in similar terms are in operation at Yale, University of Washington, San Francisco State University, among others.⁷

However, the idea that higher education is, and should be, some sort of transformative experience has come under challenge from two directions. On the one hand, both Derek Bok and Anne Colby and her coauthors conclude that, despite their stated aspirations, most U.S. universities and colleges fail to do more than provide instruction in particular disciplines.⁸ On the other hand, when responding to Colby and her coauthors, Stanley Fish challenges the value of aspiring to transformation in the first place, arguing that the only proper ends of the university are those that involve “the mastery of intellectual and scholarly skill.”^{9,10}

We think that transformation and its attendant conceptual change can be a crucial part of a successful college or university education. Moreover, the epistemic and personal transformations associated with high-level learning and intellectual development cannot and should not be disentangled: substantive epistemic transformation brings personal transformation. Our account of the structure of the transformative experience that colleges and universities can create in their students will allow us to assess and evaluate the possibilities for realistically effecting such transformation across the broad spectrum of educational institutions.

TRANSFORMATIVE LEARNING AS CONCEPTUAL REVOLUTION

A successful university education can transform through creating a distinctive, mentally significant kind of epistemic transformation that, in turn, creates personal transformation. As Fish’s many contributions to broader public debates illustrate, the type of epistemic development that comes with successful education is not confined to knowledge of the content of an academic discipline. The new conceptual approach will be carried over into attitudes toward social and cultural beliefs of all kinds, in a way that often implies an overall, substantive personal transformation with significant social implications.

To explicate the way that a college education can transform its students, we will develop the concepts of epistemic and personal transformation,¹¹ relate

7. Doug W. Yacek, “Transformative Education: A Philosophical Inquiry” (PhD diss., The Ohio State University, 2017), 6–7.

8. Anne Colby, Thomas Ehrlich, Elizabeth Beaumont, and Jason Stephens, *Educating Citizens: Preparing America’s Undergraduates for Lives of Moral and Civic Responsibility* (San Francisco: Jossey-Bass, 2003); and Derek Bok, *Universities in the Marketplace: The Commercialization of Higher Education* (Princeton, NJ: Princeton University Press, 2003).

9. Stanley Fish, “Aim Low,” *Chronicle of Higher Education* (May 3, 2003), <https://www.chronicle.com/article/Aim-Low/45210Fish>; and Agnes Callard, *Aspiration: The Agency of Becoming* (New York: Oxford University Press, 2018).

10. For related discussion, see Callard, *Aspiration*.

11. Paul, *Transformative Experience*.

them to an epistemic analysis of changes in awareness,¹² and then show how a transformative college education can be understood as a Kuhn-like conceptual revolution at the individual level. On this framing, transformed students discover a new way to understand themselves and the world by undergoing internal, individual conceptual revolutions that scale up into personal transformations.

EPISTEMIC TRANSFORMATION

Epistemic transformation involves a distinctive kind of change in the way we understand the world, one that comes, necessarily, from having a new kind of experience. The experience teaches us what something is like, expanding our epistemic capacities. Such change can range from minor to major. A *merely* epistemic transformation could involve a small discovery of a new kind of experience and its associated concepts that would not (ordinarily) lead to dramatic personal change. In *Transformative Experience*, Paul uses the example of tasting a durian for the first time to illustrate (mere) epistemic transformation.¹³

The durian is a very distinctive and unique tropical fruit that has a foul smell but a delicious flavor. Its taste is really like nothing else. As a result, until a person actually tastes a durian, they can't know what it's like to taste one. Evocative descriptions and metaphors can help, but they can't capture what experience teaches. Thus, when a person tastes a durian for the first time, they become acquainted with this taste, and in virtue of this they undergo an epistemically transformative experience (they discover what it's like to taste this fruit). This experience transforms them epistemically in the sense that, at least in a small way, it changes what they know and what they can imagine, increasing their stock of concepts and also increasing their abilities (for example, they can assign value to its taste, they can compare its taste to the taste of other fruits, they can imagine tasting it again the next day...). Such an experience is *merely* epistemically transformative, in that merely it changes the way a person thinks about (one small part of) the world. It does not produce any fundamental transformation of the person or of the way they understand themselves. While only a small-scale example, the discovery of the taste of durian illustrates the structure of the epistemic change that having new kinds of experiences can generate.

PERSONAL TRANSFORMATION

More significant types of epistemic transformations can bring personal transformation. A personal transformation stems from a radical epistemic transformation that scales up into a change in "who we are." Paul describes this as constituted by a change in one or more core personal preferences.¹⁴ This core change iterates out into a substantive shift in one's desires, self-awareness, belief structure, and lived experience.

12. Simon Grant and John Quiggin, "Inductive Reasoning about Unawareness," *Economic Theory* 54, no. 3 (2013): 717–755.

13. Paul, *Transformative Experience*, 15.

14. *Ibid.*, 16–17.

Consider the experience of gaining ordinary vision. Philosophers such as Descartes, Molyneux, Locke, and Berkeley have explored the question of how someone, born blind but subsequently gaining sight through surgery or treatment, might perceive the world. How is what's learned through seeing related to what we can know in other ways? A related example involves a thought experiment proposed by Frank Jackson, concerning Mary, a brilliant scientist who understands color only by description and theory, having grown up in monochrome surroundings, and then sees color when she leaves her rooms as an adult.¹⁵

Empirical evidence from real-life cases of gaining vision in adulthood is limited. In *Recovery from Early Blindness*, published in 1963, Richard Gregory and Jean Wallace suggest that there have been about fifty such cases observed since the seventeenth century.¹⁶ As O. L. Zangwill describes in his Foreword to the book:

Although it is nearly 300 years since Molyneux posed his celebrated query, interest in the problem of recovery of vision after early and long-standing blindness is of comparatively recent origin. In 1932, Dr. M. von Senden carefully reviewed the literature on the perception of space and shape in the congenitally blind before and after operation and arrived at some important conclusions. In particular, he stressed the slow, laborious and imperfect way in which the perception of form is acquired by these patients and their liability to emotional "crises" as they come to discover the true extent of their disability as sighted persons.¹⁷

In describing a patient, Gregory and Wallace say,

He certainly relied a great deal on vision, but we formed the impression that this very reliance cost him his self-respect, for he had been proud of his abilities when the handicap was obvious, but now his previous achievements seemed paltry and his present position almost foolish. He was not a man to talk freely, but was obviously depressed, and we felt that he had lost more than he had gained by recovery of sight.¹⁸

They cite similar observations by Mesmer (1777) and Beer (1783–1813).¹⁹ More recent work has noted that people who first gain sight as adults typically suffer from forms of depression and agnosia (a psychologically based inability to see despite receiving and processing visual stimuli). In contrast, those who become blind later in life and then regain their sight report much more positive experiences. This suggests that the kind of experience involved — gaining vision versus regaining vision — can be quite different, due to differences between individuals. The differences can bring different kinds of transformation.

15. Frank Jackson posed this thought experiment in his article "Epiphenomenal Qualia," *Philosophical Quarterly* 32, no. 127 (1982): 127–136, <https://doi.org/10.2307/2960077>; he later extended it in Jackson, "What Mary Didn't Know."

16. Richard Langton Gregory and Jean G. Wallace, *Recovery from Early Blindness: A Case Study* (Cambridge: Heffer and Sons, 1963).

17. *Ibid.*, 2.

18. *Ibid.*, 33.

19. *Ibid.*, 34. Gregory and Wallace drew the case studies recounted by Mesmer and Beer from Marius von Senden's *Raum- und Gestaltauffassung bei operierten Blindgeborenen vor und nach der Operation* [Space and sight; the perception of space and shape in the congenitally blind before and after operation] (Leipzig: J. A. Barth, 1932).

"KUHNIAN" CONCEPTUAL REVOLUTION

Epistemic transformation has a distinctive structure, and when it scales up into personal transformation, this involves a fundamental change in one's views of oneself and the world. Such transformation must be distinguished from ordinary epistemic change, which just involves the incorporation of new information into an existing framework for understanding. This kind of epistemic change, in its simplest form, is the acquisition of new facts such as the dates of historical events or the number facts associated with elementary arithmetic.

By contrast, the sort of epistemic transformation that comes with a transformative experience involves the acquisition of new epistemic capacities and concepts through having a new kind of experience, and the experience is necessary for the acquisition. For example, a blind person must actually have the experience of seeing in order to grasp what having vision is like. This distinguishes it from ordinary epistemic change in two ways. First, the epistemic expansion (or replacement) must be generated by the new experience (it cannot be generated by testimony or description or other linguistic means). Testimony of others about the experience is insufficient to bring about the change. Second, the transformative epistemic expansion is a radical epistemic change that involves the rejection of existing frameworks in favor of alternatives that were previously outside the individual's scope of awareness.

The examples of transformative changes discussed above (specifically, gaining ordinary vision or seeing color) involve new phenomena that are experienced directly, through our senses, and the downstream impacts of these life-changing events. These phenomenal changes iterate into the overall nature of one's lived experiences, bringing changes in beliefs, preferences, desires, and values. In other words, the transformation is caused by the change in phenomenology but isn't limited to it.

New experiences that are not merely phenomenal changes can also create transformation. Paul argues that having one's first child can be transformative, as can other new kinds of life-changing experiences.²⁰ In particular, the experience of leaving home and entering the radically different, structured environment of a college or university can be a transformative experience. Here, the new lived experience and attendant phenomenal discoveries unlock access to (or are psychologically bound up with) other types of content, including changes in beliefs, desires, and dispositions.

Formal epistemology is largely concerned with issues of ordinary epistemic change, such as the Bayesian updating of probabilistic beliefs after receiving reliable testimony concerning new facts. The starting point of this literature is a standard economic model of the perfectly rational agent, who makes optimal choices under uncertainty, taking account of all the possible consequences, their relative probabilities and the utility values attached to them. In this model, choices

20. Paul, *Transformative Experience*.

about attending college may be represented as risky investments in “human capital.” That is, the intending student hopes to acquire a set of skills and understandings that will both increase their earning capacity and allow them to build up the “cultural capital” typically possessed by members of the educated classes to which they aspire.²¹

To understand epistemic transformation in terms of formal epistemology, we need models of changing awareness in which, at any given time, people are aware of only some of the possible consequences of their actions and of the causal pathways that may produce these consequences.²² They are also unaware of possible future actions that may be available to them.

Colleges and universities are in the business of creating the sort of epistemic transformation that can lead to conceptual reframing of self and world, bringing an attendant reframing of one’s desires and possible future actions. Through the on-campus experience of the classroom, the dormitory, and the varieties of college life, students are exposed to diverse new ideas, cultures, and information. (It is the experience that is the vehicle here. It is precisely the loss of the immersive, experiential element that makes online education so much less effective and challenges the ability of the commuter campus to provide life-changing college experiences.) Through the epistemic expansion that being immersed in college life brings, students find reasons to question their beliefs about the world and their understanding of themselves. The new abilities and concepts that result create a new way of understanding and conceptualizing the framework of ordinary experience, generating a better, more sophisticated theory for prediction and planning.

This process may be likened to an individual version of the Copernican revolution in which a naïve worldview is replaced by a more sophisticated one, paralleling the Kuhnian distinction between “normal” and “revisionary” science.²³ While there has been much dispute over the accuracy of Kuhn’s work as a description of scientific progress, the idea that individual scientists undergo conceptual revolution with radical theory change seems apt. It seems hard to dispute the revolutionary nature of the epistemic transformation that would be involved by learning that the evidence of our senses, telling us that the earth is flat and that the sun moves around it, is utterly at variance with the fact that our planet is a tiny spherical speck in an unimaginably large universe.

[Imagine a] person totally inside a certain scientific world picture which is becoming burdened with more and more blatant anomalies, severe calculational difficulties, failing predictions, epicycle-laden explanations, and so forth. An alternative appears, some people are beginning

21. Pierre Bourdieu, “The Forms of Capital,” in *Handbook of Theory and Research for the Sociology of Education*, ed. John G. Richardson (Westport, CT: Greenwood, 1986), 241–258.

22. See Grant and Quiggin, “Inductive Reasoning about Unawareness”; and Edi Karni and Mary-Louise Viera, “Reverse Bayesianism: A Choice-Based Theory of Growing Awareness,” *American Economic Review* 103, no. 7 (2013): 2790–2810.

23. Thomas Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1962).

to talk about a strange new theory which makes absolutely no sense, and violates the most basic commonsensical expectations of what nature can be like. What is still classified as a satisfactory outcome? To solve the problems of course; taking some absurdity seriously certainly does not count as a solution, and even if it did one would have to be an imbecile to expect it to be vindicated by future experiments. If that person stops a moment to envisage himself converted to the strange new ideas, he sees himself in imagination stooping to irrationalism, he hears himself babbling with (*c'est le bouquet!*) an air of having explained the inexplicable.²⁴

Importantly, the framework change here involves replacing one conceptual framework with another. In the same way, a successful education does not simply refine or sharpen the worldview that the uneducated student brings to the table. Rather, it *replaces* an immature, parochial, unscientific, and ahistorical worldview with a reasoned, critical, knowledgeable perspective on society, nature, and humankind.

For example, college can bring one's first serious exposure to the full implications of Darwinian evolutionary theory. For those who were not taught the fundamentals or were reared on creationist science, the concept of natural selection is revolutionary and, if accepted, replaces a fundamental explanation for the order and sense of the diversity and successful adaptation of species in the natural world. Here, the transformation requires the experience of being immersed in an environment where such an evolutionary theory is taken as bedrock: otherwise, the student might not be conceptually open to the theory, lacking the ability to evaluate it or rejecting its value, much like someone immersed in evolutionary theory regards creationist science as fiction. This sort of intellectual conversion requires a fundamental shift in what one takes the external world to be like.

Such examples can be multiplied. Students who arrive with a conventionally patriotic view of their nation's history may meet Edward Gibbon's observation that history is "little more than the register of the crimes, follies, and misfortunes of mankind" and that their own nation has partaken in many of these crimes and follies.²⁵ Others who regard minimum wage laws as a matter of simple justice may discover that economists are deeply divided on the question of whether such policies help or harm workers.

Other kinds of transformation of intellectual frameworks can come through the creation of a deep appreciation for a new type of idea or a new academic passion. A student may discover a talent for mathematics or a love of literature, or may pursue a life-defining path of study in a new discipline. When this conceptual change is substantive, the epistemic transformation generates personal transformation.

These conceptual revolutions are transformations that can be thought of as analogous to a Kuhnian scientific revolution at the level of the individual. The student who replaces a creationist approach to nature with the concept of

24. Bas C. van Fraassen, "How Is Scientific Revolution/Conversion Possible?," *Proceedings of the American Catholic Philosophical Association* 73 (1999), 63–80, <https://doi.org/10.5840/acpaproc19997313>.

25. Edward Gibbon, *The History of the Decline and Fall of the Roman Empire*, 6 vols. (1776–1788), chap 3.

Darwinian natural selection undergoes a conceptual revolution much like the scientist who replaces a Newtonian theory with the theory of relativity, or a Ptolemaic view of the heavens with a Copernican one.

As we noted above, a student's conceptual revolution is usually not confined to the academic content of what is learned. At college, students discover many new ideas and many new types of people, culture, and activities. All of this feeds into the college experience that generates the conceptual shift.

CRITICAL THINKING

As we have been arguing, for many students, the crucial epistemic transformation associated with college education is not merely the discovery of previously unknown facts and ideas, but the replacement of one conceptual framework by another.

We might understand this replacement in terms of a set of reasoning abilities in the student that endows them with the capacity to engage in "critical thinking." As Bok observes, "[I]t is impressive to find faculty members agreeing almost unanimously that teaching students to think critically is the principal aim of undergraduate education."²⁶

That said, there is no universally accepted definition of "critical thinking." Very roughly, we can capture the ability to think critically as the idea that an individual has the ability to formulate, assess, and adopt epistemological positions different from those of society as a whole. The critical thinker has the capacity to "think for themselves" and to go beyond the mere acquisition of particular ideas and facts.

In Bok's view, critical thinking involves close examination of the logical coherence and empirical evidence supporting various propositions, and a willingness to revise beliefs in light of new evidence. He argues that development of critical reasoning involves three stages:

- i. an initial position of uncritical acceptance of received authority, in which all questions are assumed to have definite answers;
- ii. a shift to relativism (deplored by Bok as "easy" or "naïve") in which "different people have different views and ... there is no valid basis for judging the opinions of others";²⁷ and finally,
- iii. the desired goal in which some judgments are more persuasive and better reasoned than others based on available evidence, but even reasoned conclusions are provisional and subject to revision.

"Using these epistemic stages," Bok notes, "investigators have found that many entering freshmen arrive at college in a condition of 'ignorant certainty,' believing

26. Bok, *Our Underachieving Colleges*, 109.

27. *Ibid.*, 113

that most or all problems have definite answers, that ignorance may keep them from knowing the answer, but that the truth can be found by consulting the right expert."²⁸

Nicholas Burbules and Rupert Berk offer a comparison of critical thinking with a different idea, critical pedagogy. They describe the critical thinking tradition as follows:

The critical thinking tradition concerns itself primarily with criteria of epistemic adequacy: to be "critical" basically means to be more discerning in recognizing faulty arguments, hasty generalizations, assertions lacking evidence, truth claims based on unreliable authority, ambiguous or obscure concepts, and so forth.²⁹

By contrast, they say,

The critical pedagogy tradition begins from a very different starting point. It regards specific belief claims, not primarily as propositions to be assessed for their truth content, but as parts of systems of belief and action that have aggregate effects within the power structures of society. It asks first about these systems of belief and action, *who benefits?* The primary preoccupation of critical pedagogy is with social injustice and how to transform inequitable, undemocratic, or oppressive institutions and social relations.³⁰

In our terminology, the primary goal of training in critical thinking is an epistemic transformation that is not merely the acquisition of new knowledge, but the adoption of a new and better way of reasoning. Critical pedagogy takes this transformation further, by teaching the student to raise questions that many of them will not previously have considered.

The inculcation of critical thinking and critical pedagogy raises the possibility of two kinds of personal transformation. First, critical examination of ideas about oneself that were previously unquestioned may lead to the abandonment of those ideas and the adoption of opposed ideas. This transformation is the explicit objective of critical pedagogy, which is also explicit about the kinds of ideas involved. Second, the very process of becoming a "critical thinker," a "contrarian," or even a "naïve relativist" implies that one becomes a different kind of thinker from one who is a simple believer in surface appearances or who places a naïve trust in simple answers.

CASE STUDY: WESTOVER'S *EDUCATED*³¹

The case of Tara Westover is an illustrative, though extreme, example of how going to college can create a profound epistemic shift that involves conceptual restructuring and personal transformation.

28. *Ibid.*, 114.

29. Nicholas C. Burbules and Rupert Berk, "Critical Thinking and Critical Pedagogy: Relations, Differences, and Limits," in *Critical Theories in Education: Changing Terrains of Knowledge and Politics*, ed. Thomas S. Popkewitz and Lynn Fendler (New York: Routledge, 1999), 46.

30. *Ibid.*, 47 (emphasis in original).

31. Tara Westover, *Educated: A Memoir* (New York: Random House, 2018).

Born into a Mormon family that had cut itself off from the world, Westover grew up in a family that had no notion of university education as a desirable or even obtainable goal. Westover's father was a survivalist and refused to let her attend school or receive medical care. The family were devout Mormons, and Westover spent her childhood learning how to be a good Mormon wife. There was little or no access to the outside world. Her days were centered around the deranged rantings of her paranoid, delusional father and were occupied primarily with preparing for what the family believed was the inevitable attack by the government that would bring about the fiery end of the world.

Incredibly, Westover, as she reached her teenage years, realized there might be another life out there, something beyond the mountain. With the help of a local library and advice from a sympathetic brother who had already left home, she was able to find old textbooks and teach herself enough math and science to take the ACT. Claiming she was home-schooled on her application, she got into Brigham Young University. Against the strenuous objections of her family, she left the only home she'd ever known.

When she left home, she left everything and everyone she'd ever known behind. She discovered how different her home life had been from the way the rest of the world lived. She had to learn new social and cultural rules, for example, to wash her hands after using the bathroom. To throw away rotting food and to wipe dirt and scum off of surfaces where she lived. To dress more like other girls. To take medicine when she was sick. As her education revealed the world to her, she also learned about new ideas and movements. She discovered the history of the Holocaust, the civil rights movement, and slavery. She learned how to take an exam and write a paper. The more she discovered, the more she started to question the beliefs she'd constructed up in the Idaho mountains and, in turn, to question the foundations of how she understood herself and the world.

When she returned to her family, she realized that she had changed deeply. After a series of threats and a vicious beating, Westover decided to leave home permanently.³² She describes how, on one of the last nights she spent in her parents' house, she looked into the bathroom mirror and realized that she had left her old self behind:

The decisions I made after that moment were not the ones she would have made. They were the choices of a changed person, a new self. You could call this selfhood many things. Transformation. Metamorphosis. Falsity. Betrayal. I call it an education.³³

Westover's experience fits the notion of transformative self-discovery through education in crucial respects. In the very act of leaving home to attend university,

32. The transformation continued: she won a Gates scholarship and left the United States. In Cambridge, Westover discovered a whole new world of beauty and freedom. All was not smooth and easy: the culmination of her studies brought with it an intense breakdown, but, with the help of counseling and friends, she achieved emotional and physical reconstruction, along with even more radical personal transformation.

33. Westover, *Educated*, 329.

she had rejected the identity her family sought to impose on her. She must have known that her decision would imply major changes in her life, and she welcomed this fact. Yet, she clearly could not anticipate in any detail the nature of the new self that would emerge from the process of getting a college education.

In the course of her college experience, Westover developed new capacities for critical thinking and reflection, and this led to deep changes in her preferences, worldview, and self-understanding. Her naive pre-college self was replaced with an analyzing, educated self. Westover's determination to discover the new world of university life led to a conceptual revolution that, in virtue of replacing her old worldview, led to a personal revolution.

THE VALUE OF TRANSFORMATIVE EDUCATION

As we noted, the idea that universities and colleges should provide a transformative experience is widely accepted, as indicated by its prominence in mission statements and similar documents of these institutions. We interpret this as the idea that, through having the college experience and developing sophisticated critical reasoning abilities, students undergo a transformation that replaces old concepts with new concepts, exchanging their old way of understanding themselves and the world for a new way of understanding themselves and the world. The decision to attend college reflects a desire to learn and therefore, implicitly, an openness to revising one's existing understanding.

A key feature of this epistemic transformation is that the experience of university or college life causes the individual to replace and expand some core conceptual capacities, not simply to refine current concepts. This replacement structures deep changes in evaluative attitudes, beliefs, and intellectual capacities, leading to attendant changes in preferences (and self-understanding). The change of preferences and self-understanding constitutes a personal transformation, where the original, less educated self is replaced by the college-educated self. As this discussion has shown, the transformation associated with an education that succeeds in these terms involves a personal transformation that goes beyond the conceptual development we see in the transition from adolescence to adulthood.

As we interpret Bok, universities and colleges should be engaged in bringing about this sort of transformation. For Bok, the epistemic transformation comes through the development of the capacity for critical thinking and the cultivation of individual character, and this is conceptualized as a process of self-discovery. In this context, consider the following anecdote Bok shares:

More than 30 years ago, philosopher Robert Paul Wolff also urged that all vocational courses be banished from the curriculum, arguing that such instruction inevitably diverted students from a pure desire to master a subject. Only through an effort to achieve such mastery, he believed, "sharply different from both the dilettante's superficiality and the professional's career commitment, can a young man [sic] discover who he is and whom he wants to be."³⁴

34. Bok, *Our Underachieving Colleges*, 29. Here he quotes Robert Paul Wolff, *The Ideal of the University* (Boston: Beacon Press, 1969), 20.

The distinctive role that we have identified for the epistemic transformation that brings this type of self-discovery relates to the debate about the proper goals for education, since students themselves, before having undergone a transformation, may not be able to assess the value of the self-change involved. That is, there is a paradox here for the student: conceptual transformation may be required in order for the student to appropriately value the capacity for critical thinking and the other expanded abilities that a successful education can bring, and even to discover “whom he wants to be.” If so, how is the student to be motivated to decide to undertake such an expensive, arduous, and time-consuming task?

Models of bounded awareness apply here.³⁵ In such models, subjects are aware of only some of the possible consequences of their actions, and of the causal pathways that may produce these consequences. They are unaware of possible future actions that may be available to them, and of some possible future consequences. In such settings it is impossible to make optimal choices. Similarly, Paul argues that, in contexts of transformative choice, agents may be unable to assign values to future outcomes that involve transformed selves.³⁶ Nevertheless, choices must be made. Simon Grant and John Quiggin assert that it is possible to adopt heuristic methods that will, on average, lead to better choices.³⁷

In making choices about their education, students (and, in some cases, their parents) understand that they are committing to a potentially life-changing experience, but they cannot conceive what that experience will entail. In epistemic terms, this problem can be described in terms of “awareness of unawareness.” According to the analysis Grant and Quiggin present, agents may understand that their model of the world is inadequate, but they cannot formulate this understanding within that model.³⁸ Awareness of unawareness is something that can only be achieved in retrospect or from the perspective of an outside observer.

More interestingly, perhaps, in terms of educational perspective, educators have long experience of observing and, at least in their aspirations, guiding this process. Their second-person perspective allows them to understand the bounded awareness of their students and to help to expand that awareness.

This can help to explain a perplexing divide between what prospective students value and what their professors value. According to Bok, most liberal arts professors reject career preparation as a central goal of higher education, but “almost three-fourths of entering freshmen regard it as the *most* important reason for going to college.”³⁹ Bok continues:

35. See Grant and Quiggin, “Inductive Reasoning about Unawareness”; and Simon Grant and John Quiggin, “Bounded Awareness, Heuristics, and the Precautionary Principle,” *Journal of Economic Behavior and Organization* 93, no. 1 (2013): 17–31.

36. Paul, *Transformative Experience*.

37. See Grant and Quiggin, “Bounded Awareness, Heuristics, and the Precautionary Principle.”

38. See Grant and Quiggin “Inductive Reasoning about Unawareness.”

39. Bok, *Our Underachieving Colleges*, 281 (emphasis in original).

One can easily understand why students feel this way. Most of them will spend more time making a living over the next several decades than they will doing anything else. The careers they choose and the success they achieve at work will have a great deal to do with defining who they are, how satisfied they feel about their lives, and how comfortably they will live. No wonder they take their careers so seriously. The puzzle is that so few liberal arts teachers seem to agree.⁴⁰

According to Bok, colleges “shape the environment in which their students live, in and out of the classroom, throughout four formative years” and must take responsibility for their development into active citizens.⁴¹ This brings out the nontrivial strain of paternalism involved in taking the role of the educator as being to catalyze transformation.

Once we have the conceptual framework of epistemic transformation and awareness of unawareness in place, we have an explanation of the divergence between student and educator: for many students, before they have been educated, they lack the ability to prospectively assess the value of their education and the person they will become. Just as the scientist who inhabits an outdated theoretical framework will regard the revolutionary new theory as confused or obviously wrong in fundamentals, prospective students who lack a sophisticated capacity to critically evaluate may regard the goals of a liberal arts education as worthless because they lack the ability to assess its value and its impact on their future selves. Paradoxically, the ability to assess the value of a university education may arise only after such education has been provided.

This conclusion cuts against those who are skeptical about the role of education as a vehicle for the development of transformative intellectual capacities. For example, Fish, who is skeptical about the possibility that higher education should be transformative, seems to assume that such education could only be transformative if the incoming students can prospectively grasp the content and value of such education. But as we have seen, this is precisely what students may not be able to do. Failing to see that likelihood, Fish concludes that taking transformation to define higher education sets an impossible standard, arguing that the transformative project can only succeed with a self-selected student body and a clearly defined cultural goal.⁴² Institutions open to a diverse body of entering students, and without a clear definition of the desirable direction of moral and civic development that the incoming students can grasp, cannot pursue such a project.

Colby and her coauthors lament the fact that many U.S. universities and colleges, despite their ambitions, fail to do more than provide instruction in particular disciplines, but they identify twelve U.S. institutions that they regard as treating their students’ moral and civic development as central to their mission.⁴³

40. *Ibid.*, 281.

41. *Ibid.*, 60.

42. Fish, “Aim Low.”

43. Colby et al., *Educating Citizens*.

Fish, in response, points out that, of this small set of institutions, “four are religiously based, three identified strongly with a single ethnic group, one a branch of the military.”⁴⁴ He uses this detail to support his skeptical orientation, arguing that, for such institutions “the students who enter that culture can be said to have self-selected. This is not the life they are led to; it is the life they already lead and their college experience reinforces moral and civic choices they have made before matriculating.”⁴⁵

Given this orientation of many incoming students, Fish concludes that the only proper ends of the university are those that involve “the mastery of intellectual and scholarly skills.”⁴⁶ As such, for Fish, college only involves epistemic change in a narrow intellectual sense. Given that mastering intellectual and scholarly skills could bring about a dramatic change that fits our paradigm, Fish’s preferred institutional ends would seem to admit the possibility of conceptual revolution, but he fails to see this possibility. Since his assumptions overlook the conceptual paradox and do not leave room for the possibility of radical epistemic change, his definition of what is achievable, and thus desirable, for higher education is correspondingly much less ambitious.

A related concern involves the elitism of the transformative education model. In common with much discussion of U.S. higher education, Bok confines his attention to the upper tier of university education, where the standard model is that of a residential campus, often located in a college town. In this model, which also predominates in the upper tier of university education in the UK, the transformative effects of college education may work through a variety of channels. But, of course, the residential model is not universal. For example, in most European countries, and for many UK universities, universities are located close to city centers and do not provide on-campus housing. In the United States, much the same is true, at least for many urban universities (commonly referred to as “commuter campuses”) and for nearly all community colleges.

We acknowledge this element of the model. Transformative education in the most appealing sense requires significant resources, especially resources that many students may not have access to. However, it’s also worth noting that a model of higher education that dispenses with transformation, as Fish’s does, could easily be seen as tacitly endorsing reduced expectations, and thus as elitist in its own right. If the development of high-level analytic, critical thinking capacities through immersion in an intellectual community is of value, then shouldn’t this be a goal for students who receive any type of college and university education? Isn’t it worth investing in? Why should transformation be the province of prestigious research universities and selective liberal arts colleges?

44. Fish, “Aim Low.”

45. *Ibid.*

46. *Ibid.*

We recognize that the stratification of the educational system reflects the stratification of society as a whole. Many less wealthy universities and colleges do not have the resources to fully support a transformative educational experience, and their orientation reflects that. For most students at lower-tier colleges, the necessity of earning a living will be a sharper imperative than for those attending higher-status institutions, and the primary goal may be the acquisition of useful skills and occupational qualifications. Nevertheless, we think the value of transformation, even where resources are limited, should be articulated and understood, and accepted as a goal. In these circumstances, although students may not spend much of their time on campus, if they are able to achieve intellectual breadth in their studies, they will potentially be exposed to a wide range of new ideas, just as at the higher-status universities that are the focus of Bok's attention. We think, then, for the most successful students at these types of institutions, the process of learning is, or could become, an end in itself, leading to an epistemic and personal transformation that could rival that of their wealthier counterparts. The task of making such transformations possible may be more difficult when students' immersive college experience is minimal and the university has fewer resources to encourage and support transformation, but the value of this goal is no less significant.

The extreme version of this problem arises with online education, which suddenly, and unexpectedly, became the dominant mode of higher education available during the Covid-19 pandemic. With very little notice, students were ordered to stop attending classes, vacate on-campus accommodation, and follow lectures delivered through Zoom, Skype, and other online platforms. Campus life in its traditional form ceased to exist for the duration of the crisis.

To the extent (as of this writing, yet to be determined) that this shift online succeeds, the move to remote education provides a natural experiment to determine whether the transformative effects of higher education are, or are not, primarily determined by exposure to new intellectual ideas. Students are still being exposed to these new ideas, asked to think critically about them, and required to demonstrate their understanding of complex and challenging concepts (although their exposure may be less intensive). The rest of the college life experience has been more or less eliminated. Students' physical lives have been separated from the university, and they are, at best, under current circumstances, dominated by the shared experience of the social isolation of life in lockdown. How the transformative experience of the pandemic will interact with the transformative experience of higher education remains to be seen.

CONCLUSION

A successful college education can be thought of as transformative and, in particular, as something that society should use to enrich the process of transformation from adolescence into adulthood. Now that we have a clear conceptual model of what a transformative education involves and what its goals might be, we suggest that further discussion of education as transformative self-discovery is warranted. With a worked-out model of transformative education, we can assess

its benefits against its costs, make meaningful comparisons between the different types of goals that institutions of higher learning may endorse, and uncover assumptions like Fish's that implicitly overlook the role of conceptual transformation and reduce expectations for nonelite institutions.

In this article, we have argued that the primary role of education is epistemic transformation, accomplished by providing students with new ways of looking at the world and teaching them to consider and criticize assumptions they had previously taken for granted. Inevitably, for many, an epistemic transformation will involve some degree of personal transformation, to the degree that they undergo an individual-level conceptual replacement and expansion. As such, transformation and its attendant value change can be part of a truly successful college- or university-level education. In this context, a position such as the one Fish stakes out — that the transformation should be of no concern to educators and educational institutions — is untenable. Universities and colleges of all sorts should acknowledge their transformative role and support students' transformative self-change, encouraging and furthering their discovery of who they might become.