Core Curriculum Revisions for Critical Thinking: A Tragedy in Five Acts (and An Alternate Ending)

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Outline:

1. Prologue

What follows here is a history of a relatively small effort to help students think better, and this by way of introducing a stand-alone critical thinking requirement for my university's Core Curriculum—its general education requirements. While presented as a tragic drama, the story isn't terribly dramatic. It has few twists or confrontations, much of the action in hindsight was predictable, and no human monsters are arrayed against the proposition that students should improve their thinking skills. But the story includes confusions, hubris, political struggle, and laziness. There is innocent ignorance. There are also well-meaning characters who champion general education. There are well-meaning philosophers who understand that philosophical study can breed improvements in thinking skills. There is a lot to learn from the story, but there's still a puzzle that nags at me: Most everyone claims to support critical thinking. Students often agree they should learn to think better. Instructors and administrators say students need more instruction, exposure, and practice at critical thinking. General education is an important place to do this. How could anything have gone wrong?

In the interests of both transparency and confession, I admit to playing a perhaps-significant role in much of this. I served on the university committee charged with overseeing Core revisions, I probably did more than anyone else to persuade the committee to include a new stand-alone critical thinking requirement, I helped write the new language for that requirement, I voted to approve it all, and as a department chair, I'm supposedly charged with encouraging improvements in critical thinking pedagogy.

If this story is a tragedy, I helped write it.

Still, unlike a real play where the script determines the tragedy, there's room in this one to alter the plot toward non-tragic paths. But we need to move beyond the Core's minimal requirements to focus on a much more complete, authentic, or "real" conception of critical thinking, and in fact on a more authentic or "real" conception of philosophy itself. Both of these involve an affective/ethical component. That this is so easy to miss is a lesson of the tragedy. A positive lesson is that we can correct course. But this can only happen if we integrate the authentic versions of critical thinking and philosophy more centrally into our own thinking and pedagogy.

2. Act I: The Need for Critical Thinking in the Core, and Dreams for Future Benefits

Prior to Fall 2017, our Core Curriculum included ample *verbiage* that critical thinking is central to general education. The Core's language claimed support for free inquiry and critical thinking, analyzing and critically evaluating language, using logical and abstract thought for problem solving, and interpreting and evaluating various forms of scientific and humanistic thought. These concepts correspond to several different senses of "critical thinking," yes, but the broad concept is surely there. Yet the Core's verbiage said little of specific skills in argument identification, analysis, evaluation, or formulation, and nothing of character traits such as rational independent-mindedness. One might excuse the former on the grounds of using sufficiently general language. At best, the latter was left either for upper-level academic experiences or it was left as a by-product to hope for given the overall general education experience.

My own take on the nature of critical thinking appears in the remaining acts, and as it helps organize some of the story, I'll give it here. I'm aware there is a literature on the nature of critical thinking, argumentation, and inquiry. I hope readers will excuse my ignorance of some of the details, and I hope readers can translate some of my distinctions and language into their own accounts. The term "critical thinking" is one of those terms in philosophy that could use a capital-letter version ("Critical Thinking") and a lowercase version ("critical thinking"). I won't use that language, because of its unwieldiness, and I actually favor a threefold division. The first, most basic level corresponds to the lowercase version. This refers to a set of basic skills in identifying and summarizing arguments, and classifying them into categories that admit of evaluation. The basic level also includes skills in identifying elements of a broader defense of a position, including distinguishing a defense of a position from considering and replying to objections. And

perhaps in a deviation from the received view (if there is one), my basic level also includes skills at drawing out the logical consequences of sets of claims (for example, *A and B*, and *If A then C*, so…), identifying missing premises or assumptions, and identifying what would undermine or strengthen an argument. In what follows, I call all of these *lower-level critical thinking skills*.

I tie what I call *higher-level critical thinking skills* to the exercise of independent rational thinking, and this would be "uppercase" Critical Thinking, if one were to use that jargon. Students exercise such skills when they have something to say and defend. Such skills include analyzing, evaluating, and formulating arguments too, and note the same verbiage as for lower-level skills. But exercising higher-level critical thinking skills exhibits independent-mindedness, and as this is an important intellectual virtue, exhibiting it marks an important difference from exercising lower-level skills. Exercising lower-level skills is mostly robotic. A student thinks more independently when she writes a paper defending a unique thesis, with the argument informed by the reading and framed against that background, and with the thesis' defense taking the form of a unique and sustained argument. The higher end of this set of skills includes skills at formulating possible objections and replies to them.

Yet exhibiting the lower- and higher-level skills is insufficient to meet a larger goal tied to developing one's person, where critical thinking isn't merely a matter of what kinds of skills one has, but instead what kind of person one is. For this larger goal, a *third, affective level* includes motivations and dispositions, or habits of mind characteristic of being a critically-minded person. Reaching this larger goal requires gaining the disposition to use the higher- and lower-level skills in broader contexts beyond a college classroom or paper assignment. It entails some instruction in the intellectual virtues of critical thinking. It entails efforts on students' parts to practice the virtues and know their value, and with the overall process intended to internalize the virtues rather than just know about them. Finally, it entails that critical thinking as a whole includes an ethical component. There is much more to say about reaching this larger, affective goal for critical thinking, and there is a literature on it, but I'll save that for my alternative to Act V.

I now return to the story about our Core Curriculum. It seemed students were completing their college experience without any appreciable gains in critical thinking skills in the basic, lower-level sense. Some test results from 2010 revealed that graduating seniors taking the ETS proficiency test scored badly at critical thinking, though there was little difference between my institution's students and those at others. Given that there were no massive curricular changes from 2010 to Fall 2017, the proficiency rates likely

changed little either. If broad critical thinking skills are essential to general education, the need for change seemed obvious.

A hope, or at least *my* hope, was that with a good push in incorporating good goals for critical thinking, to be pursued using evidence-based pedagogy, and with a high proportion of students taking the courses, AND with some strong follow-up in upper-level courses, we might see something to be proud of. In hindsight, this seems incredibly ambitious. But the step of moving to a Core with a stand-alone critical thinking requirement seemed quite possible. That stand-alone requirement would be dominated by intro-level philosophy courses. We would control those courses' content and pedagogy. We as a department could focus on refining that pedagogy given new techniques and new research. We could even conduct some research on our own. Just as nearly all students funnel through two composition courses for basic writing instruction, nearly all students could funnel through one of a set of intro-level philosophy courses for critical thinking instruction. For us, that would be either *Critical Thinking*, *Introduction to Philosophy*, *Introduction to Ethics*, or *Introduction to Logic*. Despite the skepticism that a single critical thinking course can have much effect to improve thinking skills at any of the different levels described above (especially the affective level), we still might expect *some* appreciable results given the starting points the standardized testing revealed. We might even get *great* results in a few years. Surely this was a move worth proposing.

3. Act II: The Proposal and the Language

The proposal turned out to be an easy-enough sell, for Act I's argument is compelling. Everyone claims to be in favor of helping students think better and more critically, so realizing we need more emphasis on it made for an easy decision to include it in the new Core. I recall another discussion point that turned out not to generate a lot of concern: The 1980s and 90s saw the last big push in favor of critical thinking, with a flush of new stand-alone critical thinking courses added to general education curricula, and with the APA Delphi Report (1990) helping to answer the "What is critical thinking?" question to at least some kind of broad satisfaction. That period also saw a push for "critical thinking across the curriculum," much like its cousin "writing across the curriculum," with the former aimed at achieving some goals for critical thinking without adding any new requirements. The consequence was that many, many courses turned out to claim they provided critical thinking instruction, and "We all do critical thinking" wound up expressing a nebulous concept. How? Just as "writing ability" refers to skills ranging all over Bloom's lower- and higher-level categories, "critical thinking" also refers to a wide variety of skills. Most every course has problems or issues to be considered, along with different solutions and their support, and with students asked to interpret and

evaluate something at least once during the semester. Everyone does critical thinking in some sense. But if we take the ETS empirical data seriously, the supposedly broad attention to critical thinking must not be bringing about much improvement.

It seemed we could minimize the chances of this consequence by being very clear on what critical thinking skills the new Core goal would emphasize. For instance, "problem solving" seems hopelessly broad—solving math problems would then count. The same goes for "interpreting"—summarizing a text in one's own words might then count. Even "evaluating" seems too broad, for then simply asking a student's opinion on an issue might be thought to count as evaluating something. "Inquiry" might be preferred, especially for those of a Deweyan bent or for those aiming for a more ambitious goal. But among the general professoriate, "inquiry" again seems hopelessly broad. To be fair, most *any* broad collection of skills (and habits, and character traits) would seem subject to this worry, and even now I'm not sure of right move to minimize the "We all do that" response. Everyone means well in such discussions. But do we really all "do" critical thinking instruction, in any robust sense of critical thinking, where there's also reflection on thinking skills themselves?

My view at the time (if it was only mine) was that tying the new goal to *arguments* would be best, where arguments would be construed as we philosophers define them. Then we could emphasize developing reasoning skills rather than interpreting one's feelings or making a judgment based on whatever one takes to count as evidence. With the emphasis on arguments and reasoning, the courses included under the new Core goal couldn't be just any intro level course. For instance, to pick just one basic skill, how many courses cover identifying premises and conclusions as such? Philosophy courses tend to do this, and perhaps some science courses, and perhaps courses devoted to debates and arguments in specific fields like politics, history, or art.

The question then was exactly *what* to propose by way of the goal and the language to express it. One constraint is that unlike English composition, it was unlikely the university would give our smallish department its own three-hour chunk of a Core that's restricted for various reasons to only about 40 hours. The goal would have to be broad enough to allow other fields to contribute, but narrow enough to hit skills tied to good reasoning considered as such. The language wound up stressing basic, benchmark skills in critical thinking. Higher-level skills and dispositions for inquiry and independent thinking were left for higher-level courses or for the instructor's discretion.

Acquiring such higher-level skills and virtues would be difficult to assess too, and admittedly for first courses in critical thinking it made more sense at the time to aim for a basic level. Also, basic identification skills can include quite a bit, and beyond mere

"identify the premises and the conclusion" skills too, for even entry-level students can sort arguments into categories of deductive vs. inductive, modus ponens vs. modus tollens, arguments from analogy vs. inferences to the best explanation, and so on. Students can recognize invalid argument patterns and point to what would undermine or strengthen an argument. Finally, students can also make first steps toward formulating defenses of their own views, and they should be able to do so according to some patterns of good reasoning.

The final language was this. Given as a formalized goal for critical thinking, students would be able to:

Identify arguments.
Evaluate arguments through reasoning.
Formulate arguments for a thesis.

The ambiguous word making for some traps here is of course "argument." Much as the term "critical thinking" has many different senses, there are many different senses of "argument." One then imagines claims of all kinds of entry-level courses having coverage of arguments, evaluating them, and formulating them. "What is your response to the reading?" might easily get viewed as an assignment requiring all three skills above. It *could* require all three, but it's far from guaranteed that it *would* in the sense intended. But a university can meet this concern with good assessment. If assessment reports come in with "argument" treated as a synonym for "claim," or with accounts of feelings or one's upbringing counting as reasoning or justification, then either the course in question can change, the assessments and assignments can change, or the course can be removed from the Core. With good oversight over assessment and what courses get included, it was thought that worries like this could be avoided or minimized.

With all of this in mind, the critical thinking goal went forward with the rest of the new Core's language, and the new Core was approved. We would have a stand-alone critical thinking requirement.

4. Act III: Politics and Implementation

Anyone who follows her university's curriculum development knows the issue of *turf*. Try to have a course outside of math count for a math requirement, and there's a flurry of polite complaints from the math department. Disciplines protect their turf. Or, try to have a general requirement that can be covered by a number of disciplines, and there's a rush to offer courses fulfilling that requirement. Disciplines claim turf.

I already mentioned the latter concern in my comments about the last period of interest in critical thinking, where it turned out to be true but nebulous that "we all do critical thinking." That could happen again, even with the intention of having good oversight over the new Core's implementation and assessment. There were also political and practical needs to have a variety of disciplines represented under the new critical thinking goal. Politically, one goal couldn't be the exclusive realm of philosophy—that would be too much of a concession somehow, since by extension every discipline could claim some Core turf that should be created just for them. Practically, unless our department would be awarded 3-4 new faculty positions, we couldn't cover the load with our existing faculty and enrollment caps. So others would have to help. But how many other fields would contribute, would their courses be any good at teaching critical thinking, and would we start sliding down a slippery slope to "we all do critical thinking" once again?

The initial list of courses for the critical thinking goal included four courses in philosophy, all 100-level: *Introduction to Philosophy*, *Introduction to Ethics*, *Introduction to Logic*, and *Critical Thinking*. The list also included two other courses from outside of philosophy: a communication course, *Persuasion*, and an English course, *Rhetoric and Argumentation*. One might worry we started the slide before the Core even got off the ground, but in the right hands such courses could be quite successful at meeting the goal. There also was assurance that not many sections of these other courses could or would be offered, so effectively it still seemed as if most students' paths to an undergraduate degree would run through at least one philosophy course where basic critical thinking skills would be emphasized. We still had reason for optimism.

5. Act IV: Dilution and Disintegration

Tragedy can strike suddenly, in which case everyone notices it and there's more likelihood of meeting it or changing course to avoid it. Or, it can be a slow-moving and slow-developing tragedy. The latter can come about by incremental changes that might not seem tragic in themselves. I'm seeing a tragedy of the slow-moving type unfolding now with the new Core. It includes some of the exact worries we thought we took care to avoid.

Between the final vote the implementation for Fall 2017, six other courses were added to the Core goal for critical thinking and reasoning:

CSCI 101: Introduction to the Internet and World Wide Web
CSCI 120: Introduction to Web Interface Development

ECON 201: Macroeconomics
HIST 255: Great Debates
HONR 105: Critical Methods of Inquiry
WGST 105: Introduction to LGBTQ Studies

Several of these seem thoroughly unrelated to critical thinking as construed initially. One would like to apply the principle of charity here, but courses introducing students to the internet and to web development seem hardly about critical thinking at all. Instead, they serve practical needs of the Information Technology and the Information Systems programs: With courses *somewhere* in the Core, their faculty have courses to teach outside of specialized courses in computer science, and their students have a course doing double-duty in the Core and in an academic program.[1] One doesn't imagine critical thinking being central in such courses, even if they may indeed include *some* attention to such skills.

What of the other courses? The course in macroeconomics could cover good ground in argument identification and evaluation. Whether it *would* or not, and whether reasoning skills would be central to the course, is a different question. The honors course is a higher-level version of philosophy's critical thinking course. The history course should include attention to good and bad reasoning. The women's and gender studies course surely will involve critical thinking in the sense of encouraging students to consider new ideas and the reasoning behind them. However, with all of these one wonders if students will ever hear of validity and soundness, deduction and induction, the need to consider objections, or how to recognize the difference between a text's summarizing a background debate and giving its own arguments for its thesis. I doubt there would be extensive exercises of the type where some reasoning is to be identified, support for the premises summarized, and an evaluation made of whether the premises support the conclusion or whether a premise is false. And this would only hit the first two Core skills, identification and evaluation. As for formulating an argument, "What do you think about the issue?" simply isn't enough, and it's definitely not enough if it only gets asked a few times in a course that's focused more on the vocabulary and theories of the field being studied.

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[1] I fully understand the practical motivation here. To add faculty lines to improve a department's expertise, one has to make a case based partly on enrollment needs. Having courses in the Core accomplishes this. But then we find ourselves pressured to find homes in Core requirements for entry-level courses. Can these phenomena be avoided somehow? One might broaden Core requirements further, yet that makes the learning goals nebulous. Or, one might give each program its own slice of the Core pie, but that could double the size of the Core. In between we face the "finding a home in the Core" problem. I thank one of *BP*'s reviewers for mentioning this, but I'm unclear on the right path to a solution.

So, although the initial proposal recognized the need for diversity in the Core, for both political and practical reasons, I already see *dilution* in the Core. Some courses that stretch the imagination as critical thinking courses are satisfying the requirement, and the new Core just got implemented. These seem to be courses on a topic with critical thinking as a claimed "add-on" or accompanying goal, rather than courses devoted fairly centrally to critical thinking. The critical thinking focus—the central point of the Core goal—has been diluted by more attention to other skills and content.

There is another concern. That there is such wide diversity already, from computer science to economics to history to women's and gender studies to philosophy, raises the threat of what I call *disintegration* too. It's hard to see how "critical thinking" will mean the same thing in all of these. Diversity of courses for a general set of skills like those for critical thinking seems not only good, but exemplary, for despite the hubris of "we all teach critical thinking," there should be some sense in which that's true. Many courses, one hopes, challenge students to think on their own and in rational ways transferrable to other topics. This kind of aim is actually higher and broader on the scale of critical thinking skills—if there were a sort of Bloom's taxonomy just for critical thinking—and that aim differs from the goal to *identify, evaluate, and formulate* arguments. But now to the difficulty: The ambiguous language of critical thinking can mask what's really going on, which is that exercises and content that gets called critical thinking might not be devoted to both the exercise and *study* of critical thinking at all.

Learning a flowchart for problem solving or troubleshooting isn't learning critical thinking, though it might involve learning some patterns of reasoning. Learning how to solve an algebra problem isn't either, though the abstract problem-solving skills exercised are indeed similar to those for logic and critical thinking. Learning how to do a good web search isn't learning about critical thinking (and what arguments would be identified or evaluated in this?), though admittedly it would involve some reasoning. Doing a project on a contentious issue related to a current event *could be* a good critical thinking exercise, though one might wonder how much work with actual reasoning would happen, with arguments analyzed to see if their premises are well supported and whether their premises support their conclusions. All of these might be critical thinking exercises, but there's no evidence they include the study of critical thinking *as such*. And what gets *called* critical thinking might well not be—for example, problem solving or troubleshooting from an algorithm isn't critical thinking. The more of this that occurs in Core courses under the label "critical thinking," the more of what I'm calling *disintegration* happens.

To be fair, in formulating the proposal, those who were involved in the Core revisions worried about dilution and disintegration, though we didn't call it that at the time. College and university committees would have to police the course proposals and

Core assessment to prevent or minimize the problems. We would have to be willing not just to deny proposals for new additions, but also to remove courses that proved not to fit. We had seen dilution and disintegration in the old Core too—the Core in place while we deliberated on how to improve it. In the old Core, we had a stand-alone goal ostensibly tied to writing. All involved at the time agreed that our two sequenced English composition courses needed supplementing with a third writing course, perhaps discipline-specific, perhaps not. But the goal then disintegrated into a goal of *communicating*, rather than *writing*, and it disintegrated even further by including courses that on the face of it had little to do with either one. That a course included some language of "communication" in its description, its sample syllabus, or its justification for being included, or simply that it had the votes in committees, made for a tragic disintegration of what seemed at first like a worthy goal for general education. For critical thinking, the tragedy threatened to happen again, and in the period where courses were finalized for the new Core, it looked already to be happening.

6. Act V: What's Being Missed—Rational Inquiry and Independent-Mindedness

Dilution and disintegration would be enough to make the story a tragedy. But there's more, and it speaks to a deeper problem with critical thinking instruction as it seems still to be perceived. In short, the stated Core goals leave out the most significant goods that critical thinking involves, namely the skills and dispositions to conduct rational inquiry, the disposition or character of independent-mindedness, and especially the moral awareness or affective understanding of critical thinking's value. *These* goods are what we hope college graduates and human beings everywhere to have, and these goods are what in our more reflective moments we want even our intro-level students to begin acquiring. Yet with a Core goal stated and assessed just in terms of basic skills of identifying, evaluating, and formulating arguments, there's no formal attention paid to the real prizes or goals. Even worse, with just the basic skills emphasized, we might think there's not much else to do at the basic, general education level.

True, one might point out the politics of formulating a Core goal so one department has no exclusive turf rights over it. True, one might point out that the current philosophy faculty couldn't field the new goal on its own. And true, one might point out that good basic-level critical thinking skills need instruction anyway, and higher-level goals for inquiry and independent mindedness can be emphasized more fully later. But despite all these truths, there's no formal, concerted effort at reaching the real prizes of critical thinking, and with it little focus on them as the end to which gaining the more basic skills is part of the means. Such formalities might be stated, as in the new and old

Core's claimed support for free inquiry and critical thinking, or in a syllabus' statements of objectives or larger values of a course. But to put the reply precisely, even if students complete assignments that force inquiry and critical thinking upon them, and even if they exercise the skills necessary to complete those assignments to our satisfaction, there's little evidence they gain the *dispositions* or *character* or *affective/ethical commitments* to seek reasoned, independent views on important issues. They *can* think critically, and perhaps independently, but I have little confidence that they *will* do so as a result of any intellectual virtue or life-changing experience gained in college. All of this contributes to the tragedy.

In addition to being slow moving, the tragedy is one of neglect. We might not be killing critical thinking, real inquiry, or real philosophical spirit with general education requirements that stick mostly just to low-level goals. No one introduces a philosophical issue, lays out arguments on various sides claimed to be definitive of those positions, with objections and replies introduced to each of these, and with the finish being something to the effect of, "This is the issue, the vocabulary, and the arguments you need to know for the test. That's all." (Well, some of us might indeed do this.) Instead, we might dangle the good of independent-mindedness or enlightenment before our students, then show them some interesting philosophical issues and arguments, what their arguments' strengths and weaknesses might be, and then (perhaps) we give some assignments asking students to say something themselves. It seems we assume that by a sort of osmosis or example-setting, students will be inspired to seek the character we hope for them. Unfortunately, such inspiration rarely happens.

We philosophers might even lack some virtuous truth-seeking and independent-mindedness ourselves. Given all of this, we should call our inattention to the real prizes of critical thinking what it is: neglect. We might not be killing the intellectual virtues associated with critical thinking, but we might be letting them die. Together with dilution and disintegration, the Core's low-level focus and lack of more active efforts to develop the intellectual virtues all contribute to tragic neglect. Most of us are responsible for it, myself included.

7. An Alternate Ending: Avoiding Act V, Within the Framework of Acts I-IV

There might not be a way to completely avoid the tragic outcomes of Acts IV and V. Some courses will kill the critical thinking virtues or commitments, some will neglect them or let them die, and some will wrongly equate low-level critical thinking skills with the real goals. The language of our new Core's critical thinking goal hints at the last. I'm

sure it's the same at other institutions. But we have the freedom to plan and structure our courses as we like. A course under the critical thinking goal need only be consistent with the catalog description and the Core goal's learning outcomes.

And now a hopeful point: We still have considerable room to attend to what one might call *heavy-duty* or *real critical thinking*, or critical thinking at all of the lower, higher, and affective/ethical levels. This is contrasted with *critical thinking lite*—a version of critical thinking focused mostly on lower-level skills and giving just cursory attention to the rest. There are corresponding "lite" versions of philosophy, inquiry, and enlightenment too.[2] *Enlightenment lite* would include a lot of knowledge of received theories, distinctions, and frameworks of philosophy (and other disciplines too), but with little or no moving beyond those to apply Kant's (1784) "*Sapere aude!*" or "Dare to know!" or "Have the courage to use your own understanding." Despite the Core Curriculum's language that speaks just to lower-level critical thinking skills, we still *can* attend to real critical thinking, real philosophy, real inquiry, and real or heavy-duty enlightenment. We ought to take the Core's stated goals as merely a starting point, even for general education, and we ought to attend much more earnestly to what's beyond them.

A further hypothesis adds to the hope: It might be that students don't need too many courses that are tightly focused on real critical thinking, real inquiry, and real enlightenment. But we do owe our students some classes with that focus, and philosophy already has the essence that makes it feasible. There is something to the idea that studying philosophy with earnest will have these good effects.[3] Our task should be to make those good effects more likely, to more students, and via much more of a focus on those effects.

But how can we teach real philosophy and real critical thinking? As with any complex task, we can follow the dictum of breaking it into pieces and attending to each. We have some evidence-based methods at our disposal, and we should use them. For higher-level cognitive skills and the affective domain, the empirical data are somewhat short. But it isn't as if there's nothing to go on here. What follows gives some teaching strategies (and cautions), divided roughly according to lower- or basic-level critical reading, writing, and thinking skills; higher-level skills going beyond simple analysis and

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[2] *Philosophy lite* seems common enough, unfortunately—one learns the theories, vocabulary, and so on, with perhaps some attention to logic and critical thinking at the lower-level, but there is little if any independent thinking or encouragement of character development. *Inquiry lite* mirrors some of the details of real inquiry—impartiality, independence, and seeking reasoned judgment, all motivated by the desire and courage to know—but either with little exercise of it or with little attention to instruction, motivation, and practice at the details. As mentioned before, critical thinking and inquiry can't be an add-on feature of a course. For more on all of this, including the real or heavy-duty version of enlightenment, see Z (2015) and the home page of *Against Professional Philosophy* (http://againstprofphil.org).

[3] Russell (1912, Ch. 14) is a good example of one who makes this kind of argument.

evaluation, including independent reasoning and judgment; and the affective/ethical domain of developing the intellectual virtues and the earnestness needed for long-term independent-mindedness.[4] We should integrate these from the start too: For instance, students might not care much for earnest study of valid argument forms unless there's a larger motivation. That larger motivation might be something in the affective domain—intellectual virtue, freedom of thought, knowing how to live, enlightenment, and so on.

For lower-level skills: The evidence points to several good strategies for building basic-level skills in critical reading, writing, and thinking. For argument identification, so-called "LAMP," short for "lots of *argument mapping*," seems most effective.[5] How much is a lot of mapping? That remains to be seen, but it's far more than giving token attention to some basic logic at the outset of an intro-level course. How much more? In my experience, a whole semester of having diagrams appear on quizzes, tests, and class exercises gets intro-level students *just* to the level where most of them can identify a conclusion and whether a small set of premises jointly or independently support that conclusion. I like to think I focus on argument mapping more than most, and either students find it more challenging than it looks to us, I need to spend even more time on it, or maybe I'm not effective at getting it to stick.

Related to argument diagrams or maps are *concept maps*. Like argument diagrams, concept maps show connections, but a concept map can show relations of all kinds, logical and otherwise, among most anything: terms, claims, theories, people, historical periods, definitions, examples, counterexamples, etc. A map showing relatively simple connections or a relatively small number of connections can help with lower-level reading and thinking skills. A map might relate theses and what illustrates them, a theory and its competition, the questions that sort out the starting points of a philosophical debate, etc.[6]

Moreover, one might use *templates* whenever there are patterns of related concepts, theories, or tasks students need to become acquainted with. The modus ponens pattern

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[4] It is an interesting question as to why such pedagogical questions don't get integrated more often (if at all) into teaching seminars and graduate student teaching instruction. One hypothesis is that we tend to treat critical thinking skills, especially the higher-level ones, as inculcated by osmosis or exposure to those skills' being exercised by others. But we don't acquire thinking skills and intellectual virtues simply by exposure to them. Another hypothesis is that there's innocent ignorance of the value of the affective/ethical domain when it comes to critical thinking, and there's also the thought that "teaching" doesn't even apply to the affective level. But as this section suggests, there are pedagogical techniques worth trying, and with effort we no doubt could discover more.

[5] For example, see Ortiz (2007), Harrell (2008), Cullen (2015), and Noden (2015). For reviews of the evidence overall, Abrami et al. (2008) and Abrami et al. (2014).

[6] See IHMC (n.d.) for an overview, and Novac & Cañas (2008) for a more detailed description.

If P, then Q; P; thus Q is one such template. And I would say that even though it might look like a higher-level skill, templates for what I call "larger argumentative structures" should be in the basic skills category too. One finds such structures in longer passages, whole sections of a reading, or a whole article, and I ask students to learn the template *They say…, I say…, one might object…, I reply…* One must recognize this structure in order to understand most reading in philosophy, and in fact the template is a perfectly reasonable structure to require for argumentative writing assignments. One might also use templates for assignments asking for summaries of an argument, a reading, or a section within a reading that considers possible objections.[7]

Note here that on the new Core's learning outcomes, one might craft assignments that hit all three of those outcomes without ever leaving the realm of basic skills. Picking the right argument diagram from a list of candidates satisfies the *identifying arguments* outcome. Sorting a given argument into the right option among valid and invalid argument forms, and judging correctly that the argument's being valid is good and invalid is bad, would satisfy the *evaluating arguments* outcome. Finally, crafting an argument for a thesis of the student's choice that fits the modus ponens pattern would (perhaps) count as satisfying the *formulating arguments* outcome. There's far more to do than just this.

For higher-level skills: In my view, higher-level thinking skills are skills for independent rational thinking. Exercising such skills requires students to have something to say and defend. This involves "evaluating" beyond identifying an argument as valid or invalid and judging it as "good" or "bad" accordingly. Instead, it involves, for example, arguing that an argument is unsound because a parallel argument (provided by the student) with the same structure is invalid. Other examples include critiquing a premise by giving a novel counterexample or drawing out a counterintuitive consequence. Parroting an objection seen in a reading or given in a lecture doesn't count here—that just summarizes what someone else says or what "they say" on some issue. But how can we encourage students to have something to say, or better yet, how to help students *learn how* to have something to say?

Maybe the answer is easier than it seems: Just tell them to have something to say and hold them to it. True, you can't teach artistry or creativity, and you can't teach the skill of finding objections or creating arguments. Admittedly, in an important sense critical thinking can't be taught, and no one should expect skills at real critical thinking

[7] Using templates especially seems to help with writing. See Graff & Birkenstein (2016) for more on the technique, and for more on the *They say…, I say…, one might object…, I reply…* template for argumentative writing, see my (2014).

to appear magically during a single college course. But we can still create the conditions for students to develop those skills. We can tell them that expressing their own views and defenses of them are both expected and welcome. We can make a minimal condition for an acceptable paper that it defends a thesis of its own, with its own reasoning, and with an appropriate proportion of the paper devoted to doing so. We can have multiple exercises of this type—paper assignments, essay questions on tests, and discussion questions in class—and we've probably all found that with good repetition and encouragement, students do have good things to say in philosophy classes. When students defend what they have to say, and when they formulate their own arguments, that's "formulating" in the sense really intended in the Core goal's outcomes statement.

There's a general caution here that everyone also probably knows about, and that's the tendency for all human beings to take the low road where possible. Letting students take the low road makes critical thinking instruction *look* like we're "promoting free inquiry" and "independent-mindedness" and so on, but instead we're just allowing a drama that imitates those things. What's the low road when it comes to critical thinking exercises? The low road includes parroting an objection from a reading and calling it one's own. The low road includes constructing a whole paper on the *They say…, I say…, one might object…, I reply…* template where the last three components are filled with summary work from famous philosophers arguing with one another. Finally, the low road includes *bullshitting*, whether with nefarious intent, lazy intent, or sheer desperation to finish the assignment. The bullshit here is of the Frankfurtian sort,[8] which I read as playing fast and loose with the truth. For a paper assignment, bullshitting would just be filling the space as best as possible with whatever comes to mind, and then letting the professor sort out whether anything is acceptable in it. We're all aware of the tendency to take the low road. I won't offer general suggestions for battling it, but avoiding the tragedy of Acts IV and V requires forcing a higher road on everyone taking our courses.

For the "affective and ethical" level: Developing the intellectual virtues tied to critical thinking falls under the affective domain of Bloom's taxonomy. What does the affective domain include? Following Woolford's (1979) summary of Krathwohl et al. (1973),[9] we are to imagine a process of "internalizing" a virtue by first becoming *aware* of the virtue[10] (or "attending" to it), then *committing* to practicing it (or following,

[8] Frankfurt (2005), though see also Walters (1988).

[9] For summaries of the affective domain's taxonomy of attitudes, see also Koballa (2013), Clark (2015), and Kirk (2015).

[10] One might also add awareness of various *negative* traits and influences. For instance, this seems the step to become aware of one's intellectual vices, with the aim to understand and commit to eliminating them. It is also the step to be made aware of ideological and institutional influences, and this again with the aim

complying, or "responding" to it), then *accepting* or "valuing" it (including preferring the virtue and a committing to developing it), then *integrating* that virtue into one's larger set of virtues or habits, and finally *acting* on one's own in accordance with the virtue (and, inserting an Aristotelian point, with the understanding of the virtue as a virtue). I set aside critical questions one might raise against this sequence of moral development. For my purposes, the main points are that (1) developing the intellectual virtues is distinct from learning skills like argument identification and evaluation, and (2) there's some kind of stepwise process for developing or internalizing them. This seems reasonable. Consequently, we should proceed on the view that developing intellectual virtues is unlikely to occur by osmosis from developing skills at the other levels, and we should assume that mere token attention or mention of the virtues is unlikely to inspire much development of them.

Fortunately, for philosophers who teach critical thinking, such active approaches by way of practice have been proposed. Battaly (2006) and Hamby (2014) propose a number of activities and assignments that are distinct from the focus on skills and proceed in distinct steps. Battaly formulates the process in two broad steps, with developing motivation distinct from developing the critical thinking virtues. For the first step, the chief motivation is to *seek the truth*, and accompanying (though distinct) motivations include seeking knowledge, seeking understanding, and as I would speak of it, seeking (real or heavy-duty) *enlightenment*. The second step, which can be addressed jointly with developing motivation, is to develop the intellectual virtues themselves. Battaly follows Zagzebski (1996) and Montmarquet (1993) in treating intellectual virtues like intellectual courage, open-mindedness, and fairness along the lines of Aristotle's treatment of moral virtue. That is, the critical thinking virtues lie in a mean between vices, and they can be developed with practice.

What sort of practice? Battaly gives a three-part system: First, we teachers should be exemplars of those motivated to seek truth, knowledge, wisdom, and enlightenment, and we should clearly explain the motivation. I would further suggest citing exemplars from the history of philosophy and the history of ideas. As for explaining the motivation to students, one shows students the kinds of motives, actions, and emotions characteristic of intellectual virtue. Second, Battaly suggests that students apply the knowledge of the relevant motivations, actions, and emotions to cases. Students might do this individually or as group work or projects. This acquaints students further to the virtues. Third, students should practice and report on their intellectually virtuous actions and motivations, and with enough repetition as is feasible in the course.

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of understanding and critique. Bias is another type of trait to attend to here, and this might include confirmation bias and implicit bias.

One might say a lot about specific assignments devoted to these steps, and the appropriateness of them surely would vary by ability and maturity level. There are several categories (with some of Battaly's and Hamby's exercises included—I lay no claim to any of these):

(1) *Logs and journals*—Students might "log" their own experiences of intellectually virtuous thought and behavior, perhaps for a week or weekly during the semester. Logs might include examples of non-virtuous behavior and alternative thought processes for those cases. Logs might also include reports of intellectually virtuous behavior (or not) among peers or popular local or national figures. Instructors who require journals can easily incorporate a component like this.

(2) *Activities and written assignments*—These can be stand-alone assignments or assignments accompanying more traditional papers and essay questions. Examples include:

(2.1) *Metacognitive assignments accompanying traditional papers*. Students summarize their thought processes in arriving at their papers' positions and how they chose to defend them, including the thinking regarding considering objections and replies. They also answer questions such as these: Did you show any of the intellectual virtues, and to what degree if so? How might you have thought *more* fairly or open-mindedly in defending your position?

(2.2) *Analyzing an exemplar's virtuous behavior*. Similar to a case study (see below), one analyzes a famous person's thought processes and behavior in a case exhibiting intellectual virtue.

(3) *Case studies*—These find homes most easily in ethics courses, but case studies are feasible for areas outside of ethics too. Students might outline a case's non-moral facts, identify an ethical question, identify some different answers, analyze those answers using various theoretical frameworks, and then defend an answer with further arguments incorporating respect for all the competing reasoning. Hamby recommends group case studies and defenses of positions regarding cases, and this to build respect for alternative positions and for what he calls "dialectical partners."

(4) *Role playing and quasi- or "rethought" debates*—Role playing exercises such as *Reacting to the Past*[11] can build awareness and respect for alternative positions and those who hold them, forcing students to play roles representing views and arguments different from their own. Accompanying written commentaries on the virtues and metacognition involved would build such awareness and respect further. Students might have debates, but importantly not of the traditional sort where there are winners and losers. Instead, Hamby recommends the contest (if there really is one) to be one of summarizing the opposing side's views and arguments to that side's satisfaction first, then proceeding to exchange arguments and criticism.

With some imagination and further thought[12], one can add many other techniques for teaching the critical thinking virtues. Also, and importantly, our attention to the affective domain should cut across our activities devoted to the other two levels. Even when covering basic logic, one might build in exercises concerning the intellectual virtues, and especially exercises for building motivation. But the examples given above should suffice as a start, and to give hope: One easily can provide more complete instruction and practice at critical thinking beyond the admittedly lower-level attention the new Core's critical thinking goal requires.

One might raise an objection here. Attention paid to virtues, affects, and ethical commitments, no matter what the course level, comes at the expense of other course goals like skills development and content knowledge. If the affect/ethical-oriented goals regarding intellectual virtues are supremely important, then how are we to introduce *philosophy* in our courses? As in the case of the general complaint here that we've shortchanged the attitudes and virtues philosophy teaches, the reverse complaint seems to apply too. Philosophy includes the history of philosophical ideas, theories, and arguments, and those won't be introduced adequately if the focus is on critical method and intellectual virtue.

Two responses should help alleviate this concern. First, "coverage" of philosophical "material" without any real learning isn't coverage at all, so the lesson should be to cover what reasonably can be covered where real learning can happen. The evidence suggests learning is most likely when accompanied by motivation,[13] so the extra time spent on motivation and virtue might actually fit best with maximizing learning. We

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[11] See https://reacting.barnard.edu.

[12] Barkley (2010) is a good resource. Bailin & Battersby (2016) also includes exercises. Some alternate general strategies for teaching intellectual virtue are given in Baehr (2013).

[13] See Brown, Roediger, & McDaniel (2014) and Ambrose et al. (2010).

might all have been entirely too ambitious with our content. Second, integrating development of the virtues might not take much away from content coverage, for repeated attention to the virtues over a whole course seems possible without much cost. Metacognitive assignments need not take much effort (for example, an exam "wrapper" or a paragraph on how one wrote a paper given the feedback on earlier papers). Similar short assignments devoted to character development seem possible too. What sort of balance to strike with developing the virtues remains to be seen, and admittedly again the science is short in this area.

Again, this alternate version of Act V should give hope. Even if other courses fail to attend to even the modest goals given in my own institution's Core goal statement, I would think that not only can we attend to those goals, but we can go quite far beyond them. We have the right and the duty to shape our own courses to fit what students need by way of critical thinking skills, character development, and life-changing commitments. The techniques are already discussed in the literature, and for many of us, it would only remain to make the changes to our courses. This is easier said than done, but I take my discussion here to show that doing so is quite within our reach.[14]

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