

## ARTICLE

# Action Guidance and Educating for Intellectual Virtue: A Response to Kotzee, Carter, and Siegel

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## Abstract

In their “Educating for Intellectual Virtue: A Critique from Action Guidance” Kotzee, Carter and Siegel (2019) argue against what they call the intellectual virtues (IV) approach to the primary epistemic aim of education and in favor of what they call the critical thinking (CT) approach. The IV approach says that educating for intellectual virtue is the primary epistemic aim of education. The CT approach says that it is educating for critical thinking. They argue that the exemplarist/role-modeling pedagogy of the IV approach is not sufficiently action-guiding, because it does not teach students the know-how needed to think well. This they call *the pedagogical challenge* to the IV approach. We argue that their criticism of the IV approach fails. In general, possessing an intellectual virtue requires having a corresponding critical-thinking skill set. Also, for one to exercise critical-thinking skills well it is necessary that they possess dispositional components of corresponding intellectual virtues. Accordingly, intellectual virtues can be groomed in non-exemplarist ways that seem sufficiently action-guiding. Furthermore, the pedagogical challenge for the IV approach is a challenge for the CT approach as teaching for critical-thinking dispositions seems heavily reliant on an exemplarist pedagogy and so to this extent is non-action-guiding.

## 1. Introduction

In their “Educating for Intellectual Virtue: A Critique from Action Guidance” Kotzee *et al.* (2019) argue against what they call the intellectual virtues (IV) approach to the primary epistemic aim of education and in favor of what they call the critical thinking (CT) approach. The IV approach says that educating for intellectual virtue is the primary epistemic aim of education. The CT approach says that it is educating for critical thinking. Specifically, they argue that the exemplarist/role-modeling pedagogy of the IV approach is not sufficiently action-guiding, because it does not teach students the know-how needed to think well. This they call *the pedagogical challenge* to the IV approach.

For example, inculcating intellectual virtues doesn’t teach students how to justify their beliefs or how to evaluate the cogency of arguments. However, CT pedagogy, as Kotzee, Carter and Siegel conceive of it, is sufficiently action-guiding. They take

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these considerations to favor making educating for critical thinking the primary epistemic aim of education.

We welcome Kotzee, Carter, and Siegel's juxtaposition of intellectual virtues and critical thinking in considering the epistemic aim of education. However, we believe that their criticism of the IV approach fails. Briefly, our rationale is as follows. We see two facets of the synergistic relationship between intellectual virtue and critical thinking. First, (1) in general, possessing an intellectual virtue requires having a corresponding critical-thinking skill set. Second, (2) for one to exercise critical-thinking skills well it is necessary that they possess dispositional elements of corresponding intellectual virtues. We think that together (1) and (2) deflate the pedagogical challenge Kotzee, Carter and Siegel pose for the IV approach. Thesis (1) highlights how intellectual virtues can be groomed in non-exemplarist ways that seem sufficiently action-guiding. Thesis (2) makes the pedagogical challenge for the IV approach a challenge for the CT approach as teaching for critical-thinking dispositions seems heavily reliant on an exemplarist pedagogy and so to this extent is non-action-guiding. Our criticism motivates a combined IV + CT approach to the primary epistemic aim of education. The combined approach illustrates how educating for IV and educating for CT are not competing approaches to the primary epistemic aim of education.

We begin by summarizing the case advanced by Kotzee, Carter and Siegel against the IV approach. Next, we develop the above criticism of it. We conclude the paper by advancing a pedagogical challenge to teaching good thinking, understood in a way that integrates intellectual virtue and critical-thinking skills.

## 2. Commentary on Kotzee, Carter, and Siegel

Kotzee, Carter, and Siegel (hereafter KCS) set up their central argument against the IV approach to the primary epistemic aim of education by presenting the following schema (2019: 3–4).

If A is the primary epistemic aim of education, then ORGANIZATION, VALUE MAXIMIZATION, and OBLIGATION RANKING all obtain.

- (I) ORGANIZATION: Educational activities should be organized to achieve A.
- (II) VALUE MAXIMIZATION: A is the primary epistemic education value in comparison with other competing epistemic education values that should be maximized.
- (III) : OBLIGATION RANKING: No other epistemic education value outranks the primary obligation of education efforts and institutions to foster the development of A.

One might be forgiven for thinking that there can be more than one primary epistemic aim of education. Plausibly, disciplinary knowledge and understanding is a primary epistemic aim of education. Certainly, the truth of (I) and (III) do not require that there be just one primary epistemic aim of education. Obviously, (II) does require this.<sup>1</sup> While KCS acknowledge that there may well be multiple epistemic aims in education, they claim that the tension between *educating for intellectual virtue* and *educating for*

<sup>1</sup>As will become clear below, our case for thinking that educating for intellectual virtue and educating for critical thinking are not competing epistemic aims of education motivates reformulating VALUE MAXIMIZATION to: A is a primary epistemic education value in comparison with other competing primary, epistemic education values that should be maximized.

*critical thinking* as epistemic aims presupposes that they are in competition as candidates for the primary epistemic aim of education (2019: 4 note 11).

KCS consider Baehr a champion of the intellectual approach (2019: 2). However, we can't find anywhere in print where Baehr claims that educating for intellectual virtue is the central epistemic aim of education. In fact, Baehr explicitly claims that educating for intellectual virtue is *a*, not *the* central aim of education (e.g., Baehr 2013b, 2021). The rationale he provides for this claim does not support the stronger *the*-claim. Baehr is quite explicit (e.g., 2021: Ch. 1) in acknowledging a plurality of primary epistemic aims of education, and in making the case how teaching intellectual virtue enhances the possibility of realizing disciplinary-specific pedagogical aims, which may be equally central. Accordingly, Baehr is committed to rejecting the claim that educating for critical thinking is the primary epistemic aim of education, but not because he thinks that educating for intellectual virtue plays this role. Attributing to Baehr the stronger *the*-claim fails to account for his expressed pluralism regarding the primary epistemic aims of education.<sup>2</sup>

For the sake of argument, we follow KCS in supposing that there is just one primary epistemic aim of education. KCS ask: What is A? That is, what is the primary epistemic aim of education? In response, they advance the following argument.

1. A is intellectual virtue *or-exclusive* A is critical thinking.
2. A is not intellectual virtue.

Therefore, A is critical thinking.

We understand KCS's rationales for the premises as follows. The rationale for premise 1 is three-fold. (a) *The* central epistemic aim of education is to inculcate an aptitude for *good* thinking in students. (b) There are just two plausible approaches to what good thinking is: the IV and CT approaches. The IV approach says that good thinking is good in a characterological sense; the CT approach says that it is good in the epistemological/logical sense. (c) The two approaches are mutually exclusive, because there is just one feature of thinking that makes it *intrinsically good*.<sup>3</sup> From (a) and (b), it follows that A is intellectual virtue *or* A is critical thinking. From (c), it follows that the disjunction is *exclusive*. Hence, premise 1.

KCS support premise 2 by arguing that the intellectual virtue approach fails (II) VALUE MAXIMIZATION while the critical thinking approach does not. Specifically, the inculcation of *good* thinking understood in terms of intellectual virtue should not be the primary educational value that should be maximized, because intellectual-virtue pedagogy,

<sup>2</sup>One might take Baehr's argument in his 2013b (and elsewhere) in support of his claim (1) that critical-thinking skills are part of what it takes for learners to develop intellectual virtues to suggest (2) that teaching intellectual virtues is the primary epistemic goal of education. We find this understanding of Baehr uncharitable as (2) does not follow from (1). There are two camps in the intellectual-virtue movement in education. One maintains that the central task of education is to nurture intellectual virtues in students (e.g., Richhart 2002: 2). The second maintains that this is a primary aim of education and that there isn't another aim that is more significant (e.g., Dow 2020: 279–80). We think that Baehr belongs to this second camp.

<sup>3</sup>The significance of the appeal to intrinsic value is that any candidate for a primary epistemic aim of education – one worth pursuing for its own sake – must (trivially) possess intrinsic value. Of course, this point does not show that the CT and IV approaches are mutually exclusive. For that, one needs the further assumption that there is just one feature of thinking that makes it intrinsically good. That is a substantive assumption KCS make that we later reject

unlike critical-thinking pedagogy, is not properly action-guiding. KCS call this the *pedagogical challenge* to the IV approach, which they summarize as follows.

[T]he intellectual virtues approach does not have available a suitably effective pedagogy to qualify the acquisition of intellectual virtue as the primary aim of education. This is because the pedagogic model of the intellectual virtues approach (borrowed largely from exemplarist thinking) is not properly action-guiding (2019: Abstract).

We take KCS's rationale for their claim that intellectual-virtue pedagogy is not properly action-guiding to be two-fold. First, (a) given the nature of intellectual virtues, intellectual-virtue pedagogy necessarily lacks criteria specific enough for students to use to determine whether an instance of thinking exemplifies possession of an intellectual virtue; hence the essential reliance on an exemplarist/role modeling pedagogy (e.g., 2019: 12–14). Second, (b) intellectual-virtue pedagogy is limiting in that it offers no specific guidance to help students solve intellectual challenges they face in argumentation and inquiry (e.g., 2019: 14–15). We now elaborate, starting with (a).

- (a) “Advising children to be intellectually honest, brave, or rigorous if they want to become intellectually virtuous thinkers and enjoining them to imitate exemplars does not amount to specific advice regarding how they can improve their thinking” (2019: 15). As KCS point out, this criticism of intellectual-virtue pedagogy parallels the well-known criticism that virtue-theoretic standards of right action are insufficiently directive. The injunction to do whatever a virtuous person would do is both vague and often inapplicable to ordinary, morally flawed persons like ourselves. A virtuous person wouldn't get themselves into the moral trouble we mere mortals do. And the instruction to be honest, just, compassionate, and so on does not help when the problem we face is precisely how those values should be balanced in any given situation.
- (b) “Intellectual virtue does not provide a pedagogy that helps children with the nuts and bolts of the intellectual problems they face, such as: how to evaluate *this* argument or how to solve *this* mathematical problem, how to interpret *this* poem” (2019: 15) [italics are theirs]. The force of this complaint is that educating for intellectual virtues is insufficient to provide the needed know-how to tackle intellectual tasks (e.g., identifying, analyzing, and evaluating arguments), and it is insufficient to provide understanding of the criteria and standards necessary for the evaluation of reasoning.

In contrast, the pedagogy corresponding to the CT approach has four advantages over the exemplarist/role-modeling pedagogy of the IV approach.

- (1) Systematization: the CT approach emphasizes the study of the epistemic criteria by which arguments, and reasons more generally, are evaluated. Specific criteria and principles provide a step-by-step way of explaining what good thinking is and evaluating thinking (2019: 16–17);
- (2) cognitive biases and fallacies: the CT approach is well situated *qua* study of good arguments and good reasons to use the psychological research on biases and fallacious thinking to improve students' thinking by the *explicit* identification of

- specific cognitive pitfalls to avoid, which enables action-guiding strategies for avoiding them (2019: 17);
- (3) the availability of a large and established curriculum for teaching logic and critical thinking (2019: 18); and
  - (4) the availability of a good set of tests for the assessment of good thinking as conceived by the critical thinking approach (2019: 19).

Pedagogical advantages (1) and (2) result directly from the CT-picture of good thinking, which KCS construe as follows.

thinking that passes epistemic muster in that it offers truth-directed reasons and evidence that are probatively forceful, that avoids fallacies and other mistakes in reasoning, and that is informed by a broad understanding of epistemic quality and an appreciation of the criteria in terms of which that quality is determined, both in terms of general criteria sanctioned by logic (both formal and informal), probability theory, and epistemology, and of subject-specific criteria sanctioned by particular subject areas. (2019: 15–16)

Rather than relying on role modeling or exemplars to exemplify good thinking as is required on the IV-picture of good thinking, the teacher who appeals to the CT-picture of good thinking, “can explain with precision to her students what good thinking (and bad thinking) is. Moreover, she can offer clear reasons (that are not context or person-relative) as to why that form of thinking is good or bad” (2019: 17).

The criteria for good thinking so understood is completely precise and unambiguous (e.g., it is acontextual and not relative to the idiosyncrasies of individual thinkers). This enables a corresponding pedagogy that provides concrete advice about “what moves to make and what moves to avoid in their thinking” (2019: 15), and so provides specific direction to students regarding how to think well as they engage in day-to-day intellectual problem solving (2019: 17).

Regarding (3) and (4), CT curriculum for stand-alone critical thinking classes in higher education is on display in popular critical thinking texts (e.g., Govier 2010; Copi *et al.* 2014; Sinnott-Armstrong and Fogelin 2015). According to KCS, Critical thinking pedagogy,

includes instruction in argument analysis, argument structures, argument schemes, arguments couched in both print and ordinary speech, rhetorical moves and their epistemic and other features, etc. The CT approach also emphasises the epistemology underlying CT: what a reason is, what evidence is, how these provide probative support, how the character of such support is best understood, how it relates to justification and truth, etc. (2019: 16)

To summarize the case against the IV approach, KCS claim that intellectual virtue fails VALUE MAXIMIZATION, but critical thinking does not. Their central rationale is that if A is the primary epistemic value in comparison with other competing epistemic values that should be maximized in education, then (i) there are corresponding *rules/criteria* that determine when an instance of thinking realizes the operative A-norm (s), and, relatedly, (ii) there is an established (i.e., effective) pedagogy (including assessment) for teaching such rules/criteria. Intellectual-virtue pedagogy fails (i) and (ii).

This motivates construing critical thinking instead of intellectual virtue as the primary epistemic aim of education.

Condition (i) is motivated by the desideratum of making the primary epistemic aim of education sufficiently directive as a guide for students grappling with intellectual challenges that call for good thinking to meet them. For example, does  $p$  logically follow from  $q$ ? Is hypothesis  $H$  a good explanation of phenomenon  $P$ ? If each of two 100-ticket lotteries has only one winning ticket, do you increase your chances of having a winning ticket if you buy two tickets to the same lottery rather than buying one ticket to each lottery? Teaching students the specific rules/criteria delivered by critical-thinking pedagogy needed to answer such questions is more effective than an intellectual-virtue pedagogy focused on more general advice such as *be careful*, *persevere*, *be openminded*, and *own one's intellectual limitations*. Generally, “think like an intellectually virtuous person would” does not provide sufficient guidance regarding how to engage intellectual challenges. Such general advice doesn't direct folks *how to* solve intellectual problems. Also, teaching students how to track reasons is a necessary aspect of teaching students how to be good thinkers. But this requires engendering understanding of the different criteria of reason assessment by which students judge the power, convicting force, and goodness of reasons.

Condition (ii) is motivated by the need for a pedagogy that systematizes the content of what students should be taught in teaching for good thinking. There is available a large and established curriculum for teaching logic and critical thinking. It provides a roadmap for teachers to teach good thinking rather than merely an approach or an orientation (2019: 18–19). Intellectual-virtue pedagogy is incapable of generating such a roadmap, because there can't be a set of rules or procedures to follow in order to be intellectually virtuous. Instead, all that there can be is our knowledge of the virtues and the goods they serve, together with rules of thumb and numerous good examples of intellectually virtuous thinking.

KCS summarize the pedagogical challenge for the IV approach to the primary epistemic aim education as follows.

As philosophers, advocates of the intellectual virtues approach well know how crucial the teaching of logic, broadly conceived, is in promoting good thinking. When forced to decide what to prioritize in a classroom – teaching good reasoning à la the CT approach, that is relatively clear, implementable advice that can definitely improve thinking, or (trying to) teach intellectual virtue that is context and person dependent, is at a very general level of advice, and that is not always measurably effective – are they really willing to risk giving up the former for the latter? (2019: 19)

### 3. Criticism: Questioning Premise 1

We believe that KCS are correct in maintaining (a) that teaching students how to think well requires teaching them the epistemic/logical criteria that are normative for reasoning. Furthermore, they are correct in believing (b) that such criteria are not directly addressed by intellectual-virtue pedagogy. What we question is that (a) and (b) motivate construing critical thinking instead of intellectual virtue as the primary epistemic aim of education. We believe that the significance of KCS's pedagogical challenge to determining the primary epistemic aim of education is questionable, because we don't see why educating for intellectual virtue and educating for critical thinking are *competing* epistemic aims of education.

Obviously, as suggested by KCS (2019: 4 note 11), the pedagogical challenge so summarized is significant only if (1) educators must prioritize the teaching of intellectual virtues over the teaching of critical thinking or prioritize the teaching of critical thinking over the teaching of intellectual virtue, and (2) prioritizing the teaching of intellectual virtue in education risks giving up the teaching of critical thinking. We find (1) implausible; it presents a false dichotomy. Accordingly, we don't understand the degree of risk operative in (2). In order to concretize our skepticism of (1) and (2), we develop a criticism of premise 1 of KCS's argument against the IV approach, as reconstructed above.

Recall that premise 1 says that the primary epistemic aim of education is intellectual virtue *or-exclusive* critical thinking. Also recall that we take KCS's rationale for premise 1 to be three-fold. (a) *The* central epistemic aim of education is to inculcate an aptitude for *good* thinking in students. (b) There are just two plausible approaches to what good thinking is: the IV and CT approaches. (c) The two approaches are mutually exclusive, because there is just one feature of thinking that makes it *intrinsically good*.

We reject (b) by arguing for the plausibility of a combined IV + CT approach. Such an approach, if plausible, would undercut (c). Our central idea here is to conceive of the combined approach so that the characterological and epistemological/logical senses of *good* in *good thinking* live side-by-side. In a nutshell, the combined approach, as we conceive of it, says that there are at least two normative dimensions of thinking: the characterological and epistemological/logical. If plausible, the combined approach so conceived motivates skepticism of premise 1. Intellectual virtue and critical thinking as conceived by the IV and CT approaches to the primary aim of education are not competing aims of education. IV and CT pedagogies serve the primary epistemic aim of education, which we can take, as a first-step characterization, to be good thinking.

This undercuts motivation for premise 1. The plausibility of a combined IV+ CT approach to the primary epistemic aim of education, requires clarifying how intellectual virtue and critical thinking can determine compatible normative spaces for the evaluation of thinking in a way that makes the risk mentioned in (2) (above) negligible. Recall the schema KCS use to set up their argument against what they label as the IV approach.

If A is the primary epistemic aim of education, then ORGANIZATION, VALUE MAXIMIZATION, and OBLIGATION RANKING all obtain.

- (I) ORGANIZATION: Educational activities should be organized to achieve A.
- (II) VALUE MAXIMIZATION: A is the primary education value in comparison with other competing values that should be maximized.
- (III) OBLIGATION RANKING: No other education value outranks the primary obligation of education efforts and institutions to foster the development of A.

Instead of reading A as *intellectual virtue* or *critical thinking*, let A be *good thinking*. The combined IV + CT approach says that the inculcation of good thinking is the primary epistemic aim of education and that there are at least two dimensions of good thinking: the characterological and epistemological/logical. Accordingly, educating for intellectual virtue and educating for critical thinking are not *competing* epistemic aims of education. Both serve the same aim: training students to think *well*.

Intuitively, the characterological and the epistemological/logical advance two different normative spaces for thinking. For example, we condemn thinking for being careless and for being fallacious. We praise it for being courageous and for being cogent. These

are dimensions of good thinking by virtue of generating different norms that guide thinking so that it is conducive to realizing epistemic goods (e.g., knowledge, understanding, wisdom). The critical-thinking dimension of good thinking, as KCS conceive of it in terms of epistemological/logical criteria, focuses on thinking as a product. For example, is the argument or inference cogent? Is one's judgement that  $p$  justified? The IV dimension of good thinking, however, applies to the process of thinking. For example, is the thinking leading up to a judgement that  $p$  is justified careful? Is it fair-minded? Is it autonomous?

Our primary motivation for the combined IV + CT approach is two-fold. First, [A] good thinking in the characterological sense requires good thinking in the epistemological/logical sense (echoing Baehr 2013a, 2013b). Hence, educating for intellectual virtue requires educating for critical thinking. Since KCS think that critical-thinking pedagogy is properly action-guiding, educating for intellectual virtue has a significant action-guiding component. Second, [B] good thinking in the epistemological/logical sense requires possessing at least the dispositional components of intellectual virtues. Accordingly, educating for critical thinking requires inculcating the dispositions necessary in order to educate for intellectual virtue. But then why isn't the pedagogical challenge KCS pose for the IV approach a challenge for the CT approach?

Put succinctly, we motivate the combined approach by arguing that good thinking in the characterological sense serves good thinking in the epistemological/logical sense and vice versa. Accordingly, intellectual-virtue pedagogy serves critical-thinking pedagogy and critical-thinking pedagogy serves intellectual-virtue pedagogy. We take the significance of [A] and [B] to be as follows. First, if true, they motivate the view that educating for critical thinking and educating for intellectual virtue are complementary rather than competing epistemic aims of education. Second, given [A] and [B], the significance of KCS's pedagogical challenge is questionable because educating for critical thinking goes a long way towards educating for intellectual virtue. We now turn to defense and elaboration of [A] and [B], starting with [A].

### A defense of [A]

We start by offering a baseline characterization of virtue, drawing heavily on Baehr (2016). Generally, an agent  $S$  possesses intellectual virtue  $V$  only if the following four principles hold.

*Motivational Principle (MP)*:  $S$ 's possession of  $V$  is rooted in a love of epistemic goods, e.g., knowledge, understanding, truth (Baehr 2016: 87).

*Affective principle (AP)*:  $S$  takes pleasure (or experiences other appropriate affections in relation to) the activity characteristic of  $V$  (Baehr 2016: 89).

*Competence Principle (CP)*:  $S$  is competent at the activity characteristic of  $V$  (Baehr 2016: 91).

*Judgement Principle (JP)*:  $S$  is disposed to recognize when (and to what extent, etc.) the activity characteristic of  $V$  would be epistemically appropriate (Baehr 2016: 92).

In his development of this framework of the four dimensions of intellectual virtue, Baehr denies that it provides sufficient and strictly necessary conditions for the possession of an intellectual virtue (2016: 87). Rather, it provides "a theoretical model that covers enough of the relevant cases to be explanatory, illuminating, and useful" (2016: 87).



Critical thinking skills involve the competence and judgement dimensions of an intellectual virtue. How exactly turns on the specific activity or activities associated with the intellectual virtue. To elaborate, we say some more about [CP] and [JP], starting with the first.

[CP] presupposes the idea that an intellectual virtue is associated with a cognitive activity or activities characteristic of the virtue (e.g., Zagzebski 1996; Baehr 2011: Ch. 6). This enables us to distinguish each intellectual virtue from others in terms of its associated virtue-relevant cognitive activities. Piggybacking on this, [CP] motivates, at least initially, a connection between a given intellectual virtue and competencies and skills in performing its associated activities. In short, [CP] reflects a competence model of intellectual virtue: the possession of an intellectual virtue may involve the possession of an associated skill set (Baehr 2016: 92).

Turning to [JP], Baehr argues that the possession of an intellectual virtue also requires having good reason to think that the activity characteristic of the virtue in question will be useful for achieving one's epistemic aims.

[if] possessing an intellectual virtue involves being disposed to engage in a certain sort of cognitive activity that one has good reason to think will be useful for achieving one's epistemic ends, it follows that, in addition to the motivational component just identified, intellectual virtues also have a competence and a rationality component. (Baehr 2013: 250)

The rationality dimension of an intellectual virtue (i.e., its judgement dimension) reflects the idea that the intellectually virtuous "are not merely those who love learning and knowledge; they are also skilled and intelligent in their pursuit of these ends" (Baehr 2013b: 250). If [JP] is satisfied, then S is able to reliably identify the occasions and the manner that she should deploy her V-relevant cognitive abilities towards realizing the desired epistemic good(s). For ease of reference, we label this ability associated with an intellectual virtue a recognitional ability (borrowing from Baehr 2016: 93–4). If S possesses a recognitional ability associated with intellectual virtue V, then S knows when, how much, towards whom, in what way, and so on to engage their V-relevant cognitive abilities to realize the desired epistemic good(s) (Baehr 2016: 93).

A complete defense of [A] makes the case, drawing on accounts of [CP] and [JP] (e.g., as advanced by Baehr 2013b, 2016), that for many intellectual virtues, having them requires corresponding critical-thinking competencies above some minimal threshold. We hope to sketch enough of the picture with respect to two intellectual virtues to make [A] at least initially plausible. We focus on carefulness and open-mindedness.

### *Intellectual carefulness*

Intuitively, being careful with respect to some activity X requires an understanding of what is involved in successfully Xing. For example, to fly a plane successfully involves flying safely. Accordingly, to be careful in flying a plane one must know how to fly safely and be able to pay attention to the relevant details. We wouldn't know how to be careful with respect to flying an airplane because we don't know how to safely fly a plane, and so we have no idea what specifically needs our attention when flying a plane. Hence, we don't know what exactly we need to attend to in being careful when flying a plane. Furthermore, the activities that call for carefulness are those where there is a realistic

chance of getting it wrong. Presumably, novice pilots need a greater degree of carefulness than experts even in normal flying conditions. Ordinarily, putting on our socks and sneakers isn't an occasion that calls for being careful.

What we are highlighting with this example (of flying a plane) is the general point that, intuitively, knowing how to do activity X carefully involves having some idea about what to do or avoid doing in order to do X successfully. We now apply this general point to the following narrower one: being intellectually careful in doing reason assessment requires learning good thinking as taught on the CT approach.

Intellectual carefulness is an excellence because, in part, the intellectually careful person habitually understands what she must attend to and when in order to successfully accomplish her intellectual tasks. This reflects the judgement dimension of possessing the virtue of intellectual carefulness. Consider the activity of reason assessment. For example, a virtuous reasoner R has to make a judgement about what to believe or do that is significant (e.g., getting it wrong would adversely affect many others) and non-obvious (there is a realistic possibility that R might get it wrong). These considerations trigger the judgement dimension of virtuous intellectual carefulness. The virtuous thinker R engages her recognitional ability to rightly discern this to be an occasion that calls for a *careful* search and *careful* assessment of the evidence that will result in R's judgement. Furthermore, the intellectually careful person is justified in believing that attending to the methods deployed in securing her evidence-based judgement enhances the likelihood that the resulting judgement will realize the intended epistemic good (e.g., with respect to a decision about what to believe, will enhance the likelihood that her belief is true).

Being careful in assessing reasons implies knowing what to be on the lookout for in minding one's evidence (King 2021: 69), and so implies knowing what would qualify in the operative context as evidence sufficient for justifying a belief or action. Such knowledge reflects the competence component of possessing the virtue of intellectual carefulness when engaged in reason assessment.

Accordingly, educating for critical thinking (e.g., teaching deductive and inductive logic, basic statistical reasoning) is an essential requirement in order to educate for intellectual carefulness. This is because educating for intellectual carefulness requires teaching students what specifically they must be mindful of in doing reason-assessment *carefully*. Intellectual carefulness is an excellence in part because the intellectually careful person possesses the associated recognitional ability and so knows the right questions to ask in being careful about her reason-assessment activities (e.g., am I committing the base-rate fallacy? Am I falling prey to the sunk-cost fallacy as I tend to do? Is this evidence for my conclusion compatible with a different conclusion?). Furthermore, intellectual carefulness is an excellence in part because the intellectually careful person is competent in answering such questions.

In sum, intellectual carefulness with respect to reason assessment has a cognitive component: the recognition of what requires specific attention in order to ensure that such assessment realizes some epistemic good. Furthermore, intellectual carefulness with respect to reason assessment requires competence in bringing to fruition what is needed to enhance success and mitigate error in reason assessment. Accordingly, both the competence and judgement dimensions of being virtuously intellectually careful in reason assessment presuppose a know-how commonly addressed in educating for critical thinking.

**Open-mindedness**

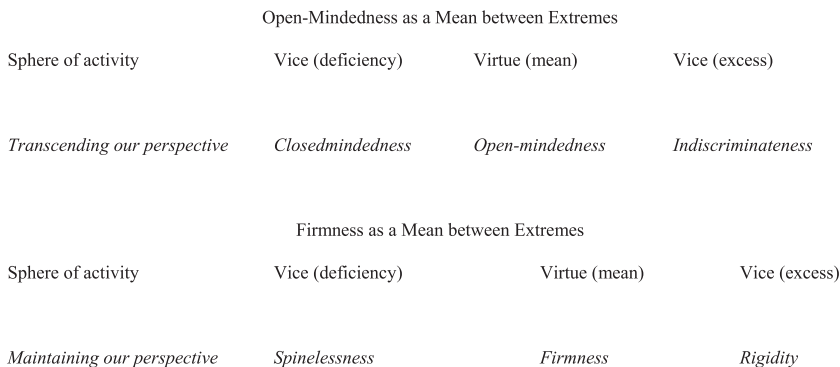
Baehr defines a virtuously open-minded person as follows. “An open-minded person is characteristically (a) willing and (within limits) able (b) to transcend a default cognitive standpoint (c) in order to take up seriously the merits of (d) a distinct cognitive standpoint” (2011: 152). Of course, being open-minded does not require a willingness and ability to seriously consider the merits of just any cognitive standpoint distinct from one’s own. Rather, it is only those that merit consideration. To possess the virtue of open-mindedness requires the ability to recognize which standpoints counter to one’s own are plausible enough to make them worth considering. This recognitional ability is grounded on being competent in reason assessment.

Borrowing from King, open-mindedness may be distinguished from indiscriminate flip-flopping by thinking of open-mindedness as requiring a competency to reasonably assess evidence (2021, p. 203). In order to distinguish between being virtuously open-minded and the vice of being intellectually indiscriminate, we must take virtuous open-mindedness to require the ability to assess in a reasonable way evidence for and against one’s views. Accordingly, the virtue of being open-minded requires a critical-thinking competence engendered by successfully educating for critical thinking. The recognitional ability associated with open-mindedness turns on being competent in reason assessment since to recognize an occasion that calls for open-mindedness requires assessing the evidence for a contrary view.

Of course, being open-minded is compatible with being robustly committed to maintaining one’s perspectives and well-confirmed beliefs. As King puts it, “[f]irm thinkers ... hold onto their well-supported beliefs unless given good reasons for revising them” (2021: 254). But then if one’s intellectual commitment to one’s belief is virtuous, one must understand what it is for a belief to be *well-supported* and what makes reasons for revising one’s beliefs *good* ones. Thus, if one’s intellectual commitment to a view is virtuous, one must be competent with respect to reason-assessment and have the corresponding know-how engendered by a successful critical-thinking education.

In sum, King usefully depicts the virtues of open-mindedness and intellectual firmness (or commitment) as means between two extremes as depicted in [Figure 1](#) (2021: 209, 214).

This conception of virtuous open-mindedness and intellectual firmness as means between two extremes turns on the thesis that the possession of these two intellectual



**Figure 1.** The virtues of open-mindedness and intellectual firmness.

virtues requires a competence in reason-assessment. Lacking such competence makes it impossible for the thinker to consistently sustain the mean in her thinking when transcending or maintaining her perspective. Moreover, it is likely that one being incompetent in reason assessment hampers one's ability to recognize the occasion for transcending or maintaining one's perspective in the face of criticism. Accordingly, educating for critical thinking as KCS conceive it (i.e., effective reason assessment)<sup>4</sup> is necessary in order to educate for the virtues of open-mindedness and firmness. We think that this argument is generalizable to many other intellectual virtues such as humility, self-confidence, curiosity, and autonomy.<sup>5</sup>

### A defense of (B)

We now turn to a defense of [B]: good thinking in the epistemological/logical sense requires possessing at least the dispositional aspects of intellectual virtues.<sup>6</sup> Our defense presupposes the idea that a person S's possession of an intellectual virtue V is manifested in S's disposition to perform cognitive acts or manifested in certain psychological characteristics associated with V due to S's love of epistemic goods. Drawing on the competence principle [CP] (above), the associated type of behavioral/psychological characteristics distinguish V from other intellectual virtues.<sup>7</sup>

For sure, certain critical-thinking skills are highly rule-governed, such as testing the validity of a categorical syllogism using the rules method. Instruction in such skills involves direct instruction in the operative rules, worked examples, and practice. Exemplarist methods are not required.<sup>8</sup>

Even so, the absence of the behavioral/psychological elements of certain intellectual virtues will make the learning and exercise of such skills difficult. Logic is hard and often technical. Students who are not habitually careful, curious, persistent often

<sup>4</sup>It's perhaps worth noting that we do not find KCS's conception of critical thinking as expressed in their paper in any way idiosyncratic.

<sup>5</sup>To emphasize, we acknowledge two senses of good thinking: epistemological/logical and the characterological. Accordingly, teaching critical thinking is necessary for teaching intellectual virtue, but teaching critical thinking is important in other ways, e.g., inculcating good thinking in the epistemological/logical sense. Our defense of (A) is compatible with not conceiving of the value of critical-thinking pedagogy merely in terms of its service to the IV approach. Again, it is vital in teaching good thinking in the epistemological/logical sense.

<sup>6</sup>As suggested above in our defense of [A], we do not take intellectual virtues to be mere dispositions. Accordingly, on our view [B] is weaker (and less controversial) than claim [C]: good thinking in the epistemological/logical sense requires possessing at least some of the intellectual virtues. Plausibly, [C] entails [B]. Certainly, [B] does not entail [C]. However, as we think we show below, [B] is strong enough to help deflate KCS's pedagogical challenge for the IV approach.

<sup>7</sup>Baehr (2016: 91–2) points out that [CP] accounts for why habituation has been considered central in the acquisition of virtues. The practice that is needed to inculcate competence in the performance of virtue-related activities induces with proper guidance settled dispositions or habits associated with the associated virtue. We illustrate below with respect to the virtues of intellectual carefulness and open-mindedness. Furthermore, we take the *Motivational Principle (MP)* to implicitly appeal to the dispositional element of virtues. Specifically, S's possession of V is *rooted* in a love of epistemic goods only if S is *disposed* to engage in virtue-relevant activity because S believes that doing so will be in helpful in S's pursuit of epistemic goods. This brings [JP] into play in the way Baehr sketches (2016: 93).

<sup>8</sup>We believe that KCS would acknowledge that while exemplarist methods are not necessary in teaching CT, a certain kind of *modeling* is necessary towards teaching the epistemic/logic criteria or rules that guide the successful exercise of CT skills.

struggle to learn the principles of truth-table or proof construction, or to apply those principles accurately. But set this aside. In some cases, dispositions play a more integral role in what is involved in having and exercising critical-thinking skills. If so, the educational aim of making students into critical thinkers cannot be achieved without also aiming to impart those dispositions and without use of the methods this involves, such as exemplarist methods. We now elaborate.

The deployment of critical thinking skills is necessarily purposeful (e.g., see Facione 1990: 2, 5; Davies 2015: 45; Ennis 1991: 6). The likelihood that involved skills will be deployed well, i.e., the intended aim will be realized in accordance with the operative epistemic/logic criteria, turns on the possession of associated critical-thinking dispositions. For example, Dewey (1933: 16) highlights the importance of intellectual persistence to reflective thinking. One must be disposed to intellectually persevere in the face of the perplexity or mental difficulty that triggers one's reflective thinking so that the stages of the subsequent inquiry can be played out culminating in the formation of a reasonable judgement (e.g., one must be disposed to resist the temptation to alleviate perplexity-induced mental anxiety by prematurely arriving at a conclusion before sufficient evidence is gathered).

Many of these so called critical-thinking dispositions are included in the behavioral/psychological elements of associated intellectual virtues. Accordingly, educating for critical thinking educates for intellectual virtue to the extent that critical thinking pedagogy must groom critical thinking dispositions necessary for inculcating associated virtues. We first illustrate using the relationship between reason-assessment – a critical thinking skill – and the virtues of intellectual carefulness and open-mindedness. We then make some more general remarks.

### *Intellectual carefulness*

Being a careful person involves being disposed to give attention to what you are doing with the aim of not only avoiding an accident, or making a mistake, but also with the aim of being successful. Cognitive carefulness involves the active monitoring of your activity with the intention of insuring that is successful. It is widely acknowledged in the critical thinking literature that critical thinking is essentially self-regulating or self-correcting (among many others, Facione 1990: 10–11; Lipman 2003: 218–19; Paul 1993: 91) where this is understood to involve metacognitive competencies in monitoring first-order thinking (e.g., see Kuhn 1999: 17–18; Van Gelder 2005: 44; Martinez 2006: 696; Mulnix 2013: 465; Davies 2015: 53–4). Looking for evidence to determine whether Beth is at home is first-order thinking. Thinking about whether your belief that Beth's car is in the driveway warrants believing that Beth is at home is second-order thinking. Kuhn identifies three second-order competencies that she takes to be essential to critical thinking (1999: 18). Two of them are metastrategic and metacognitive competencies (1999: 18–21).

Meta-strategic competency concerns the capacity to select thinking strategies that are effective in realizing one's intended aim in conformity with operative standards, and the capacity to monitor the application of such strategies. With respect to a given cognitive task, it is knowing how to think in order to best successfully complete it. In tackling a variety of thinking tasks, we sometimes deploy meta-strategic, i.e., how-to, cues to guide our thinking process.

For example, critical-thinking checklists are useful in providing students with meta-strategic guidance for their thinking in decision-making and problem solving.

For example, Ennis (1991: 20) uses the acronym FRISCO for his checklist to guide the deployment of critical thinking skills in deciding what to do or believe.

1. Identify the FOCUS: the main point or main problem.
2. Identify and evaluate the relevant REASONS.
3. Judge the INFERENCES.
4. Attend to the SITUATION: aspects of the setting, which provide meaning and rules.
5. Obtain and maintain CLARITY in what is said.
6. Make an OVERVIEW of what you have discovered, decided, considered, learned and inferred.

In sum, thinking strategically about one's thinking is one way of thinking carefully. Plausibly, the competence dimension of being a virtuous careful thinker involves a capacity to appraise and rework thinking strategies in engaging intellectual tasks. For example, the rhetorical moves that worked in rationally persuading Professor Jones, may not work in rationally persuading Uncle Ernie. Accordingly, such a careful thinker is disposed to be metastrategic with respect to one's thinking when called for. That is, such a thinker knows when going meta-strategic is called for and on such occasions habitually steps back mentally, "to appraise and rework plans by asking questions such as, what am I trying to accomplish? What are the most promising pathways? Is my strategy working?" (Martinez 2006: 697).

*Meta-cognitive competency* involves understanding one's own knowledge state. That is, being aware of what one knows and how one knows it. Think about being asked if you can name the first 10 U.S. presidents in order. You either can do so or you cannot. But your honest answer to the question might be yes or no in either case. That is, you can be accurate or inaccurate in your appraisal of your own knowledge. Metacognitive competence implies knowing the extent of one's own ignorance. That is, it implies having a high degree of Socratic wisdom. Plausibly, being a careful thinker requires being attuned to what one knows and how one knows it. For example, quickly judging an interlocutor's argument as invalid without considering whether it is enthymematic seems careless. So too does judging that  $p$  and  $q$  is more probable than  $q$  when one has been schooled on the conjunction fallacy. Plausibly, a thinker that possesses the virtue of intellectual carefulness is disposed to appropriately exercise her metacognitive competency on the occasions that call for her to think carefully.<sup>9</sup>

To summarize, being good at reason assessment requires being disposed to appropriately exercise metastrategic and metacognitive competencies above some minimal threshold. Plausibly, these dispositions are included in the behavioral/psychological elements of the virtue intellectual carefulness. Accordingly, to train students to be good at searching for and assessing reasons for belief or actions we must inculcate dispositions necessary for possessing the virtue of intellectual carefulness.

### *Open-mindedness*

Competency in reason-assessment on a Bayesian model, requires understanding the concept of *total evidence*. Loosely, according to this model one has good reasons for

<sup>9</sup>It is worth noting that the discussion here shows, not only how intellectual carefulness involves elements of critical thinking, but also how *intellectual humility* does the same. "Knowing one's ignorance" or intellectual limitations is a standard way of thinking about the crux of the virtue of intellectual humility. Thanks to a reviewer for this observation.

believing  $p$  only if one's reasons for  $p$ , collectively outweigh one's reasons against believing  $p$ . Accordingly, competency in reason-assessment requires the disposition to accurately assess pros and cons, which involves the cognitive ability to appropriately transcend default cognitive standpoints. So, being good at reason assessment requires the cognitive ability to appropriately transcend default cognitive standpoints and the disposition to appropriately exercise this ability when called for in gathering evidence. Plausibly, this cognitive ability and corresponding disposition concern the competence dimension of the virtue of intellectual open-mindedness, and so are *behavioral/psychological* elements of the virtue.

This concludes our discussion of [A] and [B]. We now summarize their significance, starting with [A]. Using the intellectual virtues of carefulness and open-mindedness we have illustrated how thesis [A] suggests that intellectual-virtue pedagogy is “action-guiding” to the extent that it includes critical-thinking pedagogy, and the latter is, according to KCS, action-guiding. Practicing critical-thinking skills and developing an understanding of the corresponding epistemic/logical critical dimension of good thinking inculcates the dispositional and cognitive components of intellectual virtues, which are essential components of educating for intellectual virtue.

Appealing to carefulness and open-mindedness, we have illustrated how [B] suggests that KCS's pedagogical challenge for the IV-approach is a challenge for the CT approach. Competency in reason-assessment requires having corresponding critical thinking dispositions that must be inculcated to educate for intellectual virtues (e.g., carefulness, open-mindedness). However, the needed pedagogy for inculcating these dispositions doesn't seem action-guiding in the sense intended by KCS. Rather, they must be inculcated by means of *practice* in doing reason-assessment and in doing other critical-thinking activities (e.g., argument reconstruction, interpretation). Furthermore, an *exemplarist/role-modeling* pedagogy seems critical here. Plausibly, KCS's pedagogical challenge for the IV approach is a challenge for the CT approach.

One might reject this claim by arguing that the development of the relevant dispositions comes quite naturally as a result of critical-thinking pedagogy. Granting that the identified dispositions, which are components of the corresponding intellectual virtues, are associated with critical-thinking skills, they *needn't* be groomed by exemplarist means. They may be inculcated by practicing the associated critical-thinking skills in accordance with critical-thinking pedagogy as conceived by KCS. Accordingly, the pedagogical challenge for the CT approach may be averted contrary to what we claim. We think this response is problematic because it misconstrues the process of habituation necessary in inculcating the dispositions associated with critical-thinking skills. We now elaborate by drawing on the literature on educating for intellectual virtue, which suggests that *exemplarist/role-modeling* pedagogy is critical in inculcating critical-thinking dispositions.

Good intellectual character is habituated (see Montmarquet 1993: 27, 31; Zagzebski 1996: 150–1; both are proponents of the responsibilist approach to intellectual virtues, which we favor). Hence the need to inculcate the dispositional components of intellectual virtue in teaching intellectual virtue. What is the process of habituation in teaching intellectual virtues? We follow those who hold that it necessarily involves practice and the imitation of exemplars (e.g., see Degenhardt 1998; Paul 2000; Sadler 2004; Battaly 2006; for influential discussion of habituation in the context of moral virtues, see Sherman 1989). According to Battaly, “[h]abituation is widely thought to involve some combination of imitation and practice on the part of the student and explanation and argument on the part of the exemplar” (2006: 204). Exemplars do more than serve

as models to be imitated. As Battaly notes, exemplars must provide explanations of their behavior, which students can then use to intelligently improve their own attempts at approximating that behavior. In short, according to Battaly habituation involves practice and imitation on the part of the student, and some amount of lecturing and explanatory guidance by or about the exemplar.

We have claimed that the disposition to go metacognitive when appropriate in reason assessment and the disposition to appropriately transcend one's cognitive standpoint in evidence gathering are elements of the intellectual virtues of carefulness and open-mindedness, respectively. Imitation of exemplars is necessary (but not sufficient) to inculcate these critical-thinking dispositions. Of course, much more needs to be said to give an account of the process of habituation germane to inculcating these and other critical-thinking dispositions. What we are pointing to here is that habituation is not a matter of mindless repetition, i.e., is not merely a matter of simply repeating the very same activities over and over again. It involves not only practice but intelligent imitation of exemplars (e.g., instructors, historical or contemporary figures). On our view, this problematizes the claim that the development of the relevant characterological dispositions comes quite naturally as a result of a critical-thinking pedagogy understood as excluding an essential exemplarist dimension to developing the relevant critical-thinking dispositions. Accordingly, we think that the CT approach does face the pedagogical challenge KCS pose for the IV approach.

Another way to see that the pedagogical challenge posed for the IV approach is a challenge for the CT approach starts from the view commonly held in the critical-thinking literature that possessing critical thinking skills does not, by itself, make one a critical thinker. One must also have certain commitments, attitudes or habits of mind that dispose a critical thinker to think in ways that pass epistemic muster (Dewey 1933: 33–4; Siegel 1988: 39–42; Ennis 1996: 165ff; Bailin *et al.* 1999: 289–90; Paul and Elder 2008: 15, 21; Facione 2011: 10–14; Davies 2015: 55–7; see Fischer 2019 for a good review of well-known characterizations of critical thinking, starting with Dewey (1933), that include habits of mind, intellectual dispositions, or character traits). Passmore (1967: 197) characterizes the possession of these dispositions or character traits as having a “critical spirit”. The attitudes and habits of mind constituting the “critical spirit” have been characterized in a variety of ways (for a summary and useful illustration see Bailin *et al.* 1999: 294–7). Siegel summarizes the critical spirit as follows.

The critical spirit component includes a cluster of attitudes, dispositions, and character traits, many of which could equally well be thought of as intellectual virtues. Among them are (1) the dispositions to seek reasons and evidence, to demand reasons and justifications for claims advanced, to query and, when appropriate, to investigate proffered but unsubstantiated claims, and to engage in open-minded and fair-minded reason assessment; (2) a willingness and inclination to conform belief, judgment, and action to epistemic principle, especially those concerning the proper normative evaluation of reasons and evidence; (3) a cluster of related attitudes and character traits, including a rejection of partiality and arbitrariness, a commitment to the objective evaluation of relevant evidence and to the sympathetic and impartial consideration of interests, and the valuing of good reasoning, intellectual honesty, justice to evidence, objectivity of judgment, and impartiality with respect to epistemic evaluation generally, even when it runs counter to self-interest; and (4) habits of mind consonant with all these. They overlap in complex ways, and I do not presume any sharp distinctions among the mentioned attitudes,



dispositions, character traits, and habits of mind. The critical spirit involves, fundamentally, caring about reasons and their quality, reasoning, and living a life in which they play a fundamental role. (Siegel 2017: 96)

The pedagogy of critical thinking, conceived in terms of reason assessment and critical spirit components focuses on the development of the individual. Following Davies (2015: 44), we call this *the individual dimension of critical thinking*.<sup>10</sup> It is tempting to appeal to the language of intellectual virtue to characterize the individual dimension of critical thinking. For example, it is tempting to appeal to intellectual virtues understood as character attributes such as curiosity, open-mindedness, attentiveness, and intellectual carefulness, autonomy and humility to develop (1)–(4).<sup>11</sup> Given the individual dimension of critical thinking, doesn't a role modeling/exemplarist pedagogy have a significant role to play in inculcating the critical spirit, which essentially is "caring about reasons and their quality, reasoning, and living a life in which they play a fundamental role"? Seems so to us.

KCS state that, "advocates of [the CT] approach more or less uniformly regard it as involving both skills/abilities and a complex of dispositions, habits of mind and character traits" (2019: 20–1, fn. 35). We take this complex to include qualities such as open-mindedness and curiosity. It is worth emphasizing two points. First, it follows from this assertion that a complete education on a CT approach would *itself* include instruction cultivating this complex of dispositions, habits of mind, and character traits. Second, KCS nowhere address how the non-exemplarist, critical-thinking pedagogy they advance is supposed to support the learning of this complex and its inculcation in students. Evidently, either that learning emerges as a lucky side-effect of critical-thinking pedagogy, or some other pedagogy is required to complete the CT approach.

Again, we think that the most plausible alternative candidate for teaching dispositions, habits of mind, and character traits that we know of involves the use of exemplarist methods. However, these methods are subject to the pedagogical challenge. Hence, any appeal to these methods would infect the CT approach with the pedagogical challenge.

If we take the aim of critical-thinking pedagogy to develop students into critical thinkers and grant that being a critical thinker requires having the critical spirit, then critical-thinking pedagogy must teach what it is to live a life in which caring about reasons and reasoning plays a fundamental role. However, there is no systematization of relevant content derived from logical rules/criteria that teachers can use to convey what it is to live a life in which caring about reasons and reasoning plays a fundamental role. Even if there is a roadmap for teachers to use in teaching reason assessment, only an approach or an orientation is available for teaching the critical spirit. To date, the best such approach/orientation matches well that described in the extensive work on teaching for intellectual virtue.

<sup>10</sup>Echoing Baehr (2013b: 251). "On the one hand, a good education ought to be rigorous: it ought to be demanding, stretch student thinking, and provide more than a short-term or superficial grasp of the material. On the other hand, a good education should also be personal: it should be attentive to and demonstrate care for who students are (e.g., their fundamental beliefs and values) and for the persons they are becoming."

<sup>11</sup>Siegel (2017) explicitly resists doing this. Other theorists explicitly acknowledge the centrality of intellectual virtues to critical thinking. For example, "[T]he intellectual virtues central to critical thinking are: Intellectual Humility, Intellectual Courage, Intellectual Empathy, Intellectual Autonomy, Intellectual Integrity, Intellectual Perseverance, Confidence in Reason, and Fairmindedness" (Paul and Elder 2008: 15).

In teaching students to be critical thinkers, we can issue a rule, “Do not mistake your feelings for reasons.” But this is not particularly action-guiding. We may give the rule more substance by thinking about common sources of bias and cognitive bias, such as conflicts of interest. But here again it will not always be transparent when one of these obtains, nor will every occasion of mistaking feelings for reasons be a conflict of interest or cognitive bias. Whether a person is habitually aware of whether some such bias is at work (in us or others) involves the type of person they are and not merely the epistemological/logical criteria they know. People who do not care to seek and give reasons, who are closed-minded and threatened by the appearance of counterevidence, who have little regard for the opinions of others, or who are simply bored quickly by reasoned inquiry, all will be less able to stay attuned to a precise issue and the concerns that are relevant (and irrelevant) to addressing it.

A capacity to stay focused on the specific issue in an argumentative exchange is an important ability of a critical thinker (Ennis 1991: 8, 12). To lay our cards on the table, skilled attunement to a precise issue and relevant reasons is regulated by intellectual virtues such as curiosity, fair-mindedness, sincerity, intellectual courage, open-mindedness, and intellectual humility. Teaching these virtues is therefore necessary for fully educating this skill (assuming that students do not already have them). Teaching them will, to be sure, involve instruction in principles such as relevance fallacies and cognitive biases. But naming and defining those principles is not sufficient for teaching students the ability to apply or think accordingly, nor will those principles cover every case. For that, one needs the intellectual virtues. Study of examples will be needed for students to get the feel for the occasions that can call upon the principles and the virtues, such as dialogues involving instances of intellectual unfairness next to instances of fair-mindedness, or of intellectual humility next to instances of arrogance (e.g., see Bailin and Battersby 2016: 19–21). And then some practice will be needed using methods such as role playing, debating, or undertaking a task that threatens to tap into underlying vice. In this way methods needed for teaching intellectual virtue contribute quite directly and essentially to the goal of teaching students to be critical thinkers.

KCS consider a combined, IV + CT, approach, but question whether it is amenable to the picture of good thinking adopted by the proponent of the IV approach.

The IV approach could *accept* the logical account of what good thinking is, but insist that that account only makes sense of good reasoning and not of good reasoning and good intellectual motivation fused *together* in that important characterological state we call ‘intellectual virtue’. (2019: 20) [Italics are the authors]

Note that this conception of the combined approach is not the one advanced here as it doesn’t countenance two dimensions of *good* thinking. What KCS propose instead is a combined IV + CT approach that adopts the univocal sense of *good thinking* endorsed by the CT approach, adding that good thinking so understood must be properly motivated as this is determined by virtuous characteristics of the thinker. This vision of a combined approach is reflected by KCS’s criticism of the IV proponent’s adoption of it.

Advocates of the IV approach should not be too quick to opt for this approach ... it comes with a challenge that goes to the heart of the IV conception of good thinking and approaches how to teach it. Recall that on the Aristotelean picture ... there can be no precise rules for teaching good thinking. Accepting that the

principles of logic do unambiguously settle what good thinking is and settles this universally (not relatively) clashes with that first very important neo-Aristotelian assumption about the relativity of the intellectual virtues. Moreover, accepting that one can teach someone how to think well by direct instruction in the principles of logic and epistemology also clashes with the Aristotelian assumption that becoming virtuous requires practice. (2019: 20)

The problem KCS point to is that the IV advocate's acceptance of this way of "combining the two approaches" forces her to give up two essential features of the IV-picture of what constitutes good thinking: its relativity, and its requiring practice. However, the combined approach proposed here does not conflict with the relativity of the intellectual virtues because it says that logic/epistemic criteria determine just one of two dimensions of good thinking. The intellectual-virtue dimension of good thinking makes *good thinking* in this sense relative and requiring practice.

KCS remark that, "[t]he point is that incorporating the critical thinking picture into the intellectual virtues picture will change the IV picture of what good thinking is and how we become capable of it (2019: 20). Yes and No. "Yes" in that the IV picture of what good thinking is, like the CT picture, advances a univocal notion of what makes thinking good, while the combined approach proposed here does not. "No" in the sense that the combined approach, as presented here, does not say that one can teach someone how to think well by direct instruction in the principles of logic and epistemology without also inculcating virtues by means of the required practice. What we are pointing to here is that KCS do not acknowledge a combined approach according to which there is more than one dimension to good thinking.

The CT approach emphasises the study of epistemic criteria by which arguments specifically, and *reasons* more generally, are evaluated. [1] It is hard to see anything more fundamental to the determination of good thinking. [2] Instances of intellectually virtuous thinking, if they are indeed good, will be so only because their quality satisfies such criteria. (2019: 17) [Numbers are ours]

Certainly, [2] does not follow from [1]. The combined approach, as advanced here, makes no claim as regards to which of IV and CT is more fundamental to *good thinking*. Certainly, the synergistic relation between IV and CT we sketch above makes it hard to establish any such claim. We may think that each is equally fundamental to the determination of good thinking. Of course, this is incompatible with [2].

In sum, the central thesis of the combined IV + CT approach as we conceive of it is: thinking can be good in characterological *and* logic/epistemic senses, neither derived from the other. The pedagogical import of this epistemic thesis turns on there being a synergistic relationship between intellectual virtues and critical thinking as we have illustrated above. This relationship grounds the importance of both intellectual virtue and critical thinking to students' attainment of epistemic goods, and motivates an integrative pedagogy in grooming good thinking. KCS remark that "[t]he dispute about what the aim of education is only makes sense if one aim is more important than another and can outrank another aim when it comes to allocation of scarce educational resources" (2019: 4, note 11). The pedagogical import of the combined IV + CT approach suggests that such a dispute does not make sense.

#### 4. Conclusion

We conclude by making two related points. First, the development of an integrative IV and CT pedagogy is a pedagogical challenge for the combined IV + CT approach to the primary epistemic aim of education. An integrated IV + CT pedagogy is sadly missing from the typical stand-alone critical thinking class in higher education if the top-selling critical-thinking texts count as evidence for what is being taught in such classes. Second, it is widely accepted that, “[w]hen we take it upon ourselves to educate students so as to foster critical thinking, we are committing ourselves to nothing less than the development of a certain sort of person” (Siegel 1988: 41). Accordingly, the associated pedagogy will have to include exemplarist/role-modeling elements and require lesson plans for student-practice in order to inculcate the necessary dispositions. Therefore, educating for critical thinking will not be as straightforwardly action-guiding as Kotzee, Carter, and Siegel have claimed.

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