

# Does Critical Thinking and Logic Education Have a Western Bias? The Case of the Nyāya School of Classical Indian Philosophy

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*In this paper I develop a cross-cultural critique of contemporary critical thinking education in the United States, the United Kingdom, and those educational systems that adopt critical thinking education from the standard model used in the US and UK. The cross-cultural critique rests on the idea that contemporary critical thinking textbooks completely ignore contributions from non-western sources, such as those found in the African, Arabic, Buddhist, Jain, Mohist and Nyāya philosophical traditions. The exclusion of these traditions leads to the conclusion that critical thinking educators, by using standard textbooks are implicitly sending the message to their students that there are no important contributions to the study of logic and argumentation that derive from non-western sources. As a case study I offer a sustained analysis of the so-called Hindu Syllogism that derives from the Nyāya School of classical Indian philosophy. I close with a discussion of why contributions from non-western sources, such as the Hindu Syllogism, belong in a Critical Thinking course as opposed to an area studies course, such as Asian Philosophy.*

## INTRODUCTION

One question in the philosophy of education is the question concerning *education for democracy*, EDQ: How should public education enable the ethical implementation and proper functioning of democratic processes, such as voting on the basis of public and civic discourse? At least one plausible answer is that a public education should provide citizens of a political body with basic skills in public discourse, which is inclusive of critical thinking and civic debate. That is, education for democracy should have an element that enables *ethical public discourse* on topics of shared concern. This answer is grounded on two ideas. First, democratic processes, such as voting, take into account the will of the people through reflective

deliberation and the exchange of ideas on matters of public concern, such as prison reform, marriage, taxation and gun control. Second, critical thinking through civic engagement allows for the expression of individual autonomy on a matter of public concern. Call this general answer to EDQ, *the critical thinking and civic debate response*, CTCD. Two important questions the CTCD response faces are the *content question*: What exactly are critical thinking, civic debate and ethical public discourse? And the *normative question*: What are the appropriate forms, norms and intellectual virtues by which we should engage in critical thinking, civic debate and ethical public discourse?<sup>1</sup>

One way to critically enter into the content and normative question is through engagement with *public philosophy*. It is important to take note of two ways in which the term ‘public philosophy’ can be used. On the one hand ‘public philosophy’ can be used to designate the fact that a philosopher is discussing something that is in the public arena, such as an issue of social justice. This kind of public philosophy, I call, the *philosophy-to-public direction of fit*. Because in this mode of public philosophy a philosopher enters into the public arena with a *preconception* of what and how things should be discussed, with the intention of informing the public through a philosophical lens. By contrast, there is the *public-to-philosophy direction of fit* under which the public guides the philosopher to an important issue that then leads to an examination of it philosophically. Thus, we can use the *public-to-philosophy direction of fit* to critically examine the content and normative questions concerning the CTCD response. We can do this by considering some recent events involving critical thinking and civic debate. These events have been analysed and reported on by the journalist Jessica Kraft in her (2014) article in *The Atlantic*, ‘Hacking Traditional College Debate’s White Privilege Problem’. She reports:<sup>2</sup>

On March 24, 2014 at the Cross Examination Debate Association (CEDA) Championships at Indiana University, two Towson University students, Ameena Ruffin and Korey Johnson, became the first African-American women to win a national college debate tournament, for which the resolution asked whether the US president’s war powers should be restricted. Rather than address the resolution straight on, Ruffin and Johnson, along with other teams of African-Americans, attacked its premise. The more pressing issue, they argued, is how the US government is at war with poor black communities. In the final round, Ruffin and Johnson squared off against Rashid Campbell and George Lee from the University of Oklahoma, two highly accomplished African-American debaters with distinctive dreadlocks and dashikis. Over four hours, the two teams engaged in a heated discussion of concepts like “nigga authenticity” and performed hip-hop and spoken-word poetry in the traditional timed format. At one point during Lee’s rebuttal, the clock ran out but he refused to yield the floor. “Fuck the time!” he yelled. His partner Campbell, who won the top speaker award at the National Debate Tournament two weeks later, had been unfairly targeted by the police at the debate venue just days

before, and cited this experience as evidence for his case against the government's treatment of poor African-Americans.

In the 2013 championship, two men from Emporia State University, Ryan Walsh and Elijah Smith, employed a similar style and became the first African-Americans to win two national debate tournaments. Many of their arguments, based on personal memoir and rap music, completely ignored the stated resolution, and instead asserted that *the framework of collegiate debate has historically privileged straight, white, middle-class students.* (emphasis added)<sup>3</sup>

Although there are many important features that these cases bring to light, here I want to draw attention to three features that help us understand the importance of both the content question and the normative question. First, *the kind of evidence* that is appealed to does *not* just consist in objective facts, such as what the law states, and reasoning deductively or inductively from a set of premises, it also contains personal experience. Second, *the mode of engagement* used does *not* consist simply in rational argumentation through the use of the standard format of ethical theory, followed by premise, application and finally a conclusion. Rather, it includes poetry and hip-hop that takes both a reason-based approach and an emotional and musical element into play. Third, *the norm of engagement* used does *not* see deference to rules as trumping either the importance of what is talked about or the length of time one talks about it. We might summarise a caricature reaction to these students by a hypothetical critic as follows: how rude of these students to not debate the issue, to disregard the rules, and to fail to take into consideration the kinds of evidence required for public debate and discourse on matters of social and political concern. *In light of these cases and the caricature, the critical thinking and civic debate community faces an important and unexamined question: does critical thinking and civic debate education rest on an uncritical examination of its very foundation? Is the foundation perhaps insensitive to race, class, gender and non-western traditions of critical thinking and debate? Call this question the meta-critical question about critical thinking.*

The meta-critical question about critical thinking and civic debate education is extremely important to any education policy that embraces the CTCED response to EDQ. Furthermore, it is central to the project of coming to understand how public discourse is possible in a community that has diverse individuals with non-overlapping conceptions of the good life. In the next section, I present, explain, and defend the central argument leading to the conclusion that critical thinking education should include contributions from non-western sources. As a case study I present some material, well known in the classical Indian philosophical and comparative philosophy community, concerning contributions to logic and critical thinking deriving from the Nyāya tradition of orthodox Indian philosophy. My examination of these contributions aims to establish that there are things that critical thinking education can take on board from non-western traditions that are important and valuable to critical thinking and logic education. In

the third section, I present and respond to the objection that contributions to critical thinking from non-western traditions should not be taught in a *Critical Thinking* course but rather in an area studies course, such as *Asian Philosophy*.

### THE CENTRAL ARGUMENT

At present there is a social blindspot that critical thinking and debate education suffers from in the US, UK and those countries that use the standard model that originates from the US and UK. In short the blindspot is that critical thinking and debate education is insensitive to variation over what could count as *critical thinking* and *civic debate* based on an examination of non-western contributions to critical thinking and debate. The neglect of these traditions is largely due to the fact that those that work on critical thinking, logic and debate, such as members of the informal logic community are generally *not* historically informed about non-western contributions to critical thinking through engagement with those that work on Asian and comparative philosophy. Simply put, institutional separation has led to an impoverished educational package for critical thinking education for the past 100 years in which the modern university has developed. The central argument I will develop to expose the problem is as follows.

1. Critical thinking, and practice in ethical civic debate, is important to public discourse on social and political issues that citizens of a democratic body vote on when making policy decisions that concern all members of the public.
  2. The current model for critical thinking and civic debate education is dominated by a western account of informal logic, formal logic, debate rules and intellectual virtues.
  3. Critical thinking education should include contributions from non-western philosophers.
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4. Critical thinking education should be revised so as to be inclusive of contributions from non-western thinkers.

Why should we accept the premises of this argument?

#### *Premise 1*

Premise 1: Critical thinking, and practice in ethical civic debate, is important to public discourse on social and political issues that citizens of a democratic body vote on when making policy decisions that concern all members of the public.

The main objection to Premise 1 derives from the work of Michael Huemer's (2005) paper: *Is Critical Thinking Epistemically Responsible?* In this work he provides an argument against the epistemic responsibility of critical thinking. The core idea is that if one is forming a belief on an issue of public concern one ought to do so responsibly. Given that one ought to form the belief in a responsible way, one might consider different strategies

open to the person for how to form the belief. Consider the following belief forming strategies.

*Credulity*: In forming a belief a person is to canvass the opinions of a number of experts and adopt the belief held by most of them. In the best case, the person finds a poll of the experts; failing that, the person may look through several reputable sources, such as scholarly books and peer-reviewed journal articles, and identify the conclusions of the experts.

*Skepticism*: In forming a belief a person is to form no opinion on the matter; that is, the person is to withhold judgement about the issue.

*Critical Thinking*: In forming a belief a person is to gather arguments and evidence that are available on the issue, from all sides, and assess them. The person tries thereby to form some overall impression on the issue. If the person forms such an impression, then she bases her belief on it. Otherwise, the person suspends judgement.

Now, where P is a specific controversial and publicly debated issue, and  $C_bP$  is the context of belief formation for P, the central argument against the epistemic responsibility of critical thinking is the following.

1. Adopting *Critical Thinking* about P in  $C_bP$  is epistemically responsible only if *Critically Thinking* about P is the most reliable strategy from the available strategies in  $C_bP$ .
2. One ought to always use the most reliable strategy available in forming a belief about an issue of public concern.
3. *Critical Thinking* about P is not the most reliable strategy from the available strategies in  $C_bP$ .
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4. It is not the case that *Critical Thinking* about P in  $C_bP$  is epistemically responsible.

In Vaidya (2013), I offered an extensive argument against Huemer's position. That argument depends on a development of a theory of what constitutes an autonomous critical identity, and why forming a critical identity is valuable for a person. As a consequence, I will not go into a sustained response to Huemer's argument here. Rather, I will note a simple set of points that can be used to assuage the initial force of what is being argued.

First, in so far as the claim is that critical thinking about an issue is not to be preferred over taking the view of an expert on an issue it is clear that choosing who the expert is on the issue is a matter of critical thinking. In order for one to identify someone as an expert one must understand how to track through sources for the appropriate identification of experts. So, in general, *deference to experts* actually *depends* on *critical thinking*, since deference is a choice one must make. The core idea is that *one cannot outsource all cognition to an alternative source, since outsourcing is itself a decision that has to be made.*

Secondly, it is important to distinguish between the different types of issues in which deference to experts can be made. For example, there is a difference between an argument that contains a scientific conclusion, with mathematical and scientific premises, and an argument that contains moral

premises and has a moral conclusion. Given this difference, it is plausible to maintain that deference to experts in the scientific and mathematics case is not the same as deference in the moral case. While I can defer to a moral expert to tell me what a moral theory says, such as what the details of consequentialism, as opposed to deontology, are, I can't defer to a moral expert on the issue of what the correct moral conclusion is, independently of the adoption of a specific moral view. By contrast, I can defer to a scientist or a mathematician as to which conclusion to believe on the basis of the premises.

### *Premise 2*

Premise 2: The current model for critical thinking and civic debate education is dominated by a western account of informal logic, formal logic, debate rules and intellectual virtues.

The key defence I will offer for Premise 2 relies on an examination of two of the most commonly used textbooks for critical thinking in the US and UK, Patrick Hurley's *A Concise Introduction to Logic* and Lewis Vaughn's *The Power of Critical Thinking: Effective Reasoning about Ordinary and Extraordinary Claims*. The guiding idea of the argument is that if our main textbooks for teaching critical thinking and logic at the introductory level do not engage non-western philosophy, we can reasonably infer that those that use the textbook are not teaching critical thinking and logic by way of engaging non-western sources. Of course there will be those that supplement the texts, perhaps even for the very reason I am presenting here—that they lack non-western ideas. But we can safely examine and entertain the claim that I am defending *as being primarily about textbooks as opposed to variable classroom practice*. More importantly, if the textbooks are widely used, which they are, we can ask: what do they represent about critical thinking and civic debate education?

I will focus my examination of non-western contributions to critical thinking on two places in critical thinking education where adjustments can be made. The point of this presentation is to show that our main textbooks can be altered to include non-western sources in specific ways. Although there are many contributions I could discuss, for simplicity I will focus on contributions from the Nyāya School of classical Indian philosophy concerning the nature of argumentation. In future work I will discuss other cases, such as those deriving from Africana, Arabic, Jaina, and Jewish philosophy. I begin my investigation of the Nyāya by answering a basic question: Is there a distinction in Indian philosophy between different kinds of discussions that allows us to isolate out critical discourse from non-critical discourse?

### *Is there any critical thinking in Indian philosophy?*

Of course this question cannot be seriously entertained by anyone who works in Indology or Asian and Comparative Philosophy. However, for those who are not in the know, a presentation and defence of an affirmative



answer must be made. For if one is to include non-western ideas about critical thinking in a textbook that is eventually used to teach the subject, one needs to show that non-western traditions are in fact engaging in critical thinking. In order to do that we need to look at competing views of what critical thinking is, *the content question*, in order to locate critical thinking outside of the west.

In his *Not By Skill Alone: The Centrality of Character to Critical Thinking*, Harvey Siegel (1993) contrasts two views of critical thinking: the skill view and the character view. He argues that these two views are part of a central debate in critical thinking over what a *critical thinker is*. He goes on to defend the character view:

*The Skill View* holds that critical thinking is exhausted by the acquisition and proper deployment of critical thinking skills.

*The Character View* holds that critical thinking involves the acquisition and proper deployment of specific skills as well as the acquisition of specific character traits, dispositions, attitudes, and habits of mind. These components are aspects of the “critical spirit” (Siegel, 1993, 163–165).

Given this distinction, where does classical Indian philosophy fall? We have three options. Indian philosophical traditions take one or another of the views, or there is no discussion at all of either of these views. I will show that some Indian philosophical traditions make a distinction between various kinds of discussion, one of which is a critical discussion, and that there is evidence for the character view of critical thinking.

In his *The Character of Logic in India*, B. K. Matilal (1998) presents an account of different types of discussions and debates that can be found in Indian philosophy. He offers his account by turning directly to the founding father of the Nyāya school of classical Indian philosophy, Gautama Akṣapāda (2<sup>nd</sup> CE). In the *Nyāya Sūtras* Gautama draws a distinction between three kinds of discussion.

**Discussion** is the adoption of one of two opposing sides. What is adopted is analyzed in the form of the five members, and defended by the aid of any of the means of right knowledge, while its opposite is assailed by confutation, without deviation from the established tenets (Sinha, 1990, p. 19).

**Wrangling**, which aims at gaining victory, is the defense or attack of a proposition in the manner aforesaid, by quibbles, futilities, and other processes which deserve rebuke (Sinha, 1990, p. 20).

**Cavil** is a kind of wrangling, which consists in mere attacks on the opposite side (Sinha, 1990, p. 20).

Matilal maintains, on the basis of Akṣapāda’s *Nyāya Sūtras* that there are three distinct kinds of discussions. *Vāda* is an honest debate where both sides, proponent and opponent, are seeking the truth, that is, wanting to establish the right view. *Jalpa*, by contrast, is a discussion/debate in which

one tries to win by any means, fair or unfair. *Vitandā* is a discussion in which one aims to destroy or demolish the opponent no matter how. One way to explain the distinctions is as follows: (i) *vāda* is an honest debate for the purposes of finding the truth, (ii) *jalpa* is a debate aimed at victory where one propounds a thesis; (ii) *vitandā* is a debate aimed at victory, where no thesis is defended, one simply aims to demolish the view propounded by the proponent.<sup>4</sup> *The distinction between these three kinds of discussions grounds the claim that classical Indian philosophers were aware of different kinds of discussions based on the purpose of the discussion, and that critical thinking, for the purposes of finding the truth on an issue, was not at all a foreign idea.*

It is important to note that even prior to the *Nyāya Sūtras* there is discussion and differentiation of different kinds of *public discourse* and how they are to be done. In section 3.8 of the classical Indian *Handbook of Ayurveda*, the author, Acharya Caraka, says the following:

One who has acquired the knowledge (given by the authoritative text) based on various reasons and refuting the opponent's view in debates, does not get fastened by the pressure of the opponent's arguments nor does he get subdued by their arguments (Van Loon, 2002, p. 115).

And pertaining to the value of discussion with specialists he says the following:

Discussion with specialists: promotes pursuit and advancement of knowledge, provides dexterity, improves power of speaking, illumines fame, removes doubt in scriptures, if any, by repeating the topics, and it creates confidence in case there is any doubt, and brings forth new ideas. The ideas memorized in study from the teacher, will become firm when applied in (competitive) discussion (Van Loon, 2002, pp. 115–116).

And then he offers an important distinction between two different kinds of discussion, and how they should be carried out.

Discussion with specialists is of two types—*friendly* discussion and *hostile* discussion. The friendly discussion is held with one who is endowed with learning, understanding and the power of expression and contradiction, devoid of irritability, having uncensored knowledge, without jealousy, able to be convinced and convince others, enduring and adept in the art of sweet conversation. *While in discussion with such a person one should speak confidently, put questions unhesitatingly, reply to the sincere questioner with elaborateness, not be agitated with fear of defect, not be exhilarated on defeating the partner, nor boast before others, not hold fast to his solitary view due to attachment, not explain what is unknown to him, and convince the other party with politeness and be cautious in that. This is the method of friendly discussion* (Van Loon, 2002, pp. 117–118, *emphasis added*).



The passages from the *Handbook of Ayurveda*, especially the emphasised area, substantiate the idea that the character view is in play in one of the oldest recorded presentations of critical reasoning and how it is to be executed.

Furthermore, in his *Indian Logic*, Jonardon Ganeri (2004) presents a picture of argumentation and critical thinking in ancient India by turning to the classic dialogue of the Buddhist tradition: *Milinda-pañha* (*Questions for King Milinda*). Ganeri presents an important passage on discussion and critical thinking.<sup>5</sup>

- Milinda: Reverend Sir, will you discuss with me again?  
Nāgasena: If your Majesty will discuss (*vāda*) as a scholar, well, but if you will discuss as a king, no.  
Milinda: How is it that scholars discuss?  
Nāgasena: When scholars talk a matter over one with another, then there is a winding up, an unraveling, one or other is convicted of error, and he then acknowledges his mistake; distinctions are drawn, and contra-distinctions; and yet thereby they are not angered. Thus do scholars, O King, discuss.  
Milinda: And how do kings discuss?  
Nāgasena: When a king, your Majesty, discusses a matter, and he advances a point, if any one differ from him on that point, he is apt to fine him, saying “Inflict such and such a punishment upon that fellow!” Thus, your Majesty, do kings discuss.  
Milinda: Very well. It is as a scholar, not as a king, that I will discuss. (*As quoted in Ganeri, 2004, p. 17.*)

From this passage we get a further elaboration on the kind of discussion known as *vāda* that Akṣapāda distinguishes from *jalpa* and *vitandā*. More importantly, though, the passage above also introduces the reader to a very important idea about the nature of a good discussion in classical Indian philosophy. Nāgasena says:

When scholars talk a matter over one with another, then is there a winding up, an unraveling, one or other is convicted of error, and he then *acknowledges his mistake*; distinctions are drawn, and contra-distinctions; and yet thereby *they are not angered* (*as quoted in Ganeri, 2004, p. 17, emphasis added*).

One reading of this claim is that Nāgasena is pointing out that a good discussion requires not only that certain moves are made ‘a winding up’ and an ‘unraveling’, but that the persons involved in making those moves have a certain *epistemic temper*. Participants in a good debate moreover have the capacity, and exercise the capacity, to (i) *acknowledge mistakes*, and (ii) *not become angered by the consequences of where the inquiry leads*. Nāgasena’s answer to King Milinda suggests that Buddhist accounts of critical thinking also adopt the *character view* as opposed to the *skill view*. It is not enough to simply know how to ‘make moves’, ‘destroy’ or ‘demolish’ an opponent by various techniques. What is central to an honest debate is that a participant

must also have a certain attitude and character that exemplifies a specific *epistemic temper*.

If one agrees with the character view, then this simple passage from *Milinda-pañha* could be compared with other passages, such as from the *Meno*, to teach critical thinking students what critical thinking is about.<sup>6</sup>

### *The tale of two syllogisms*

But once we have introduced students to *what critical thinking is* we are often faced with having to show them how to present their ideas for the purposes of a critical discussion. This takes us to the *normative question*: what are the appropriate forms, norms and intellectual virtues by which we should engage in critical thinking and civic debate? Many contemporary introductory level textbooks, such as Hurley's *Concise Introduction to Logic* and Vaughn's *The Power of Critical Thinking* contain some section where they present and discuss how an argument should be put into, what is often called, *standard form*. The notion of a *standard form* is *normative*. It suggests that an argument has a way that it *should* be presented for the purposes of engaging someone in a dialectical inquiry. Often discussion of standard form takes place either in the context of the presentation of how to identify an argument, or in the area where Aristotelian Categorical Logic is presented. However, the presentation of what constitutes a good argument, in either Hurley or Vaughn, is *not* given comparatively by considering other traditions. For example, it is simply presupposed that there is no alternative way in which one could present an argument. In contrast to the Aristotelian picture, the Hindu Syllogism has a different structure. It was developed and debated in classical Hindu, Buddhist and Jain philosophy for centuries. What is the basic contrast between the Aristotelian Syllogism and the Hindu Syllogism?

Aristotle was the ancient Greek philosopher who first codified logic for the western tradition. Students of logic and critical thinking are often brought into the topic of the syllogism and the standard form of reasoning by the following example from Aristotle.

Major Premise: All men are mortal.

Minor Premise: Socrates is a man.

Conclusion: Socrates is mortal.

*Akṣapāda Gautama* was the founding father of the Nyāya School of philosophy. Like Aristotle he was also concerned with the proper form of how an argument should be displayed. The most commonly discussed argument in Indian philosophy deriving from his work, and perhaps even earlier, is the following:

Thesis: The hill has fire.

Reason/Mark: Because of smoke.

Rule/Examples: Wherever there is smoke, there is fire, as in a kitchen.

Application: This is such a case, i.e., the hill has smoke *pervaded* by fire.

Conclusion: Therefore it is so, i.e., the hill has fire.<sup>7</sup>

There are many differences between the two examples. Two of the most important, highlighted by Matilal (1985, pp. 6–7), are: (i) Aristotle's Syllogism is in subject-predicate form, Akṣapāda's Syllogism is in property-location form; (ii) Aristotle's study of syllogistic inference is primarily about universal and particular form propositions, Akṣapāda's study involves singular propositions in the thesis and conclusion. However, even though there are these differences, both examples have a *similar normative force*. They are both offered as a case of *good reasoning*, and they both are examples of what counts as how one should present their argument in a debate.

Given that neither Hurley nor Vaughn discuss the Hindu Syllogism, we might ask all of the following questions. Does it make sense as an argument form? Is there any benefit to teaching it? What do we gain by including it?

### *The western gaze on classical Indian logic*

To answer these questions we need to look at the history of the reception of the Hindu Syllogism and how to correct the colonialist interpretation of it.

In the study of classical Indian logic from the Anglo-European point of view it is well known that the Hindu Syllogism received a great deal of criticism and was often presented as being inferior to the Aristotelian Syllogism. Jonardon Ganeri (2001) has compiled a list of some of these critiques in his work on Indian Logic:

H.H. Price (1955)

[Western philosophy] looks outward and is concerned with Logic and with the presuppositions of scientific knowledge; [Indian philosophy] looks inward, into the 'deep yet dazzling darkness' of the mystical consciousness (*as quoted in Ganeri, 2001, p. 1*).

R. Blakely (1851)

I have a great doubt of [Indian Logical] views becoming of any value whatever in the cause of general knowledge or science, or of ever having any fair claim to be admitted as an integral part of the Catholic philosophy of mankind. It is absurd to conceive that a logic can be of any value from a people who have not a single sound philosophical principle, nor any intellectual power whatever to work out a problem connected with human nature in a manner that is at all rational or intelligent. Reasoning at least in the higher forms of it among such semi-barbarous nations, must be at its lowest ebb; [and there] does [not] seem to be any intellectual stamina, in such races of men, to impart to it more vigour and rationality. (*as quoted in, brackets added, Ganeri, 2001, p. 7*).

A. H. Ritter (1838)

One point alone appears certain, and that is, that they [the Nyāya] can lay but slight claims to accuracy of exposition. This is proved clearly enough by the form of their syllogism, which is made to consist of five instead of three parts. Two of these are manifestly superfluous, while

by the introduction of an example in the third the universality of the conclusion is vitiated (*as quoted in Ganeri, 2001, p. 9*).

#### E. Röer (1850)

That Hindu philosophy will have any great influence on the development of European philosophy and mediately of European civilization must be denied. You are compelled to think by reading the works of the Greeks, they introduce you to the process of their thoughts, and by this force you to accompany them with your own thoughts, until you arrive as it were by your own mind at the principles of their systems . . . The Hindus, on the other hand, are dogmatical. They commence synthetically with a statement of their principles, yet do not condescend to unfold the train of thought which has led to them (*as quoted in Ganeri, 2001, p. 14*).

As a consequence, of these attitudes one can see how and why it may have been acceptable to exclude Indian contributions to logic for the purposes of teaching. *The guiding idea is that if the Hindu Syllogism is actually confused and not a good form of reasoning, then we ought not to teach it in a critical thinking course.* Thus, one needs to defend the plausibility of teaching the Hindu Syllogism through a partial defence of what is valuable in it. Below I offer an account of some of the criticisms of the Hindu Syllogism, based on the work of Ganeri (1996, 2001). From there I proceed to a defence of the Hindu Syllogism through an examination of J. L. Shaw's (2010, 2016a, 2016b) work on the distinctions between inference for oneself and inference for another, and Gaṅgeśa's notion of relevance, and my own distinction between different models through which we can understand a piece of reasoning.

The criticisms of the so-called Hindu Syllogism come largely from having two important figures in western logic in mind when thinking about the Hindu Syllogism. The figures are Aristotle and Mill. The former is important for his work on the codification of deductive patterns of inference. The latter is important for his work on inductive inference. Here are some common criticisms of the Hindu Syllogism:

- (a) It is redundant, since the Thesis and Conclusion say the same thing.
- (b) It is superfluous, since the Application step is unnecessary.
- (c) It is a convoluted hybrid of two distinct types of reasoning: inductive and deductive. In particular the argument can be broken down as follows:

Deductive component:

All locations where there is smoke are locations where there is fire.  
There is smoke on the hill.

∴ There is fire on the hill.

Notice this has the same form as Aristotle's argument:

All Men are Mortal.  
Socrates is a Man.

∴ Socrates is Mortal.

Inductive component:

In a kitchen a fire is followed by smoke.

∴ In all cases fire is followed by smoke.

Given that the argument can be broken down into two independent and distinct arguments it can be argued that: (i) the good part is simply the deductive version offered by Aristotle, and (ii) the bad part is offered by Akṣapāda when the inductive component is combined with the deductive component. The inductive component joined to the deductive component is bad because a single instance is never capable of proving a universal rule. On an available western interpretation the critical question is: *why does Akṣapāda think that the observation of fire in the kitchen followed by smoke is enough to justify the claim that all locations where there is smoke are locations where there is fire?* This question can be amplified into an argument that suggests that we should not teach the Hindu Syllogism in critical thinking, since it would confuse students about the difference between inductive and deductive reasoning. Although that critique assumes that we have the right account of how to divide different kinds of reasoning, I will forgo challenging that claim and simply show how the Hindu Syllogism can be defended even with that account in place. Thus, it will be useful to decode the western gaze on the Hindu Syllogism by providing an interpretative lens that is available from within western philosophy and classical Indian philosophy.<sup>8</sup>

### *A corrective lens for the western gaze on the Hindu Syllogism*

Not all western philosophers saw classical Indian philosophy in a negative light. Some who were more careful readers of the tradition saw that something drastically different could be going on. These interpretations are largely in line with how several philosophers in the Nyāya tradition see the steps in the set up of the Hindu Syllogism. I will build a defence of the Hindu Syllogism based on some of these ideas in conjunction with the following idea. Tarka-vidyā is the science of debate. It is an open question whether we should think of the classical Indian tradition of engaging debate, logic and philosophy along the same lines as we find in Plato's presentation of philosophy as distinct from rhetoric, and Aristotle's codification of logic separately from rhetoric. In particular there is nothing in classical Indian philosophy that speaks to the issue of separating 'philosophy' from the art of persuasion. All traditions of Indian philosophy are steeped in debate, and have their own competing manuals of debate.

Following the work of J. L. Shaw (2016a) it is worth noting three points. *First*, the theory of inference in classical Indian philosophy is largely based on the idea of how to cause a specific cognition (the conclusion) to arise on the basis of steps leading to the conclusion. *Second*, a good argument is one that is free of specific kinds of defects that can block the conclusion from arising in the correct way. *Third*, it is central to understanding inference in classical Indian philosophy to pay attention to the distinction between *inference for oneself* vs. *inference for another* and the concept of relevance

as it pertains to questions and answers.<sup>9</sup> Finally, as a helpful comparative guide, we can distinguish between three models of reasoning:

In *the manipulation model* reasoning is fundamentally about manipulating a person's mind so that they believe what you want them to believe—no matter how that is brought about through reasoning. In *the veritic model* reasoning is fundamentally about finding the truth. In *the erotetic model* reasoning is fundamentally about engaging questions that arise from natural doubts or through dialectical inquiry.

Given the different models of reasoning we might ask: what base model of reasoning is at play in the western interpretation of the Hindu Syllogism? If the answer comes from philosophers and logicians from the Anglo-European tradition, it is likely to be the case that the veritic model is used, since that model is what is associated with philosophy and with the science of logic. Logic is about what *follows* from what. For example, propositional logic is about what we can conclude about the truth of a compound formula, such as  $(P \wedge Q)$ , on the basis of what the truth-value is of each of its components, such as that P is true and Q is true. However, we can look at the Hindu Syllogism from another perspective.

According to Shaw, the key ideas for a better understanding of the Hindu Syllogism are: (a) to distinguish between an inference for oneself and an inference for another; (b) to employ the erotetic model over the veritic model, and (c) to understand the erotetic model through the notions of relevance and the diversity of intellects.

According to the Nyāya each of the sentences in an inference for others is an answer to a question and each of them, except the last one, will give rise to a question. Moreover, each of them is used to generate a cognition in the hearer (Shaw, 2010, p. 45).

In an inference for others, all the five sentences are needed, because each of them is an answer to a different question and gives some new information. But in an inference for oneself all of them are not required and there is no need to use a sentence. Hence a deaf and a mute person can also have an inferential cognition (Shaw, 2010, p. 46).

And concerning the concept of relevance, Shaw notes the following:

According to Gaṅgeśa, a Navya-Nyāya philosopher, there are several types of relevance (*saṅgati*). The three important kinds for inference are: (i) justification (*upodghāta*), (ii) causing-effect (*kāryatva*), and (iii) cessation of objectionable questions (*avasara*). These three concepts of relevance are tied to an epistemic account of inference in terms of answering certain questions that arise from doubt. The steps in an inference aim to provide justification that puts an end to questions, including questions about the sequence of steps. This conception is central for understanding the classical Indian conception of dialectical reasoning. This account of relevance deals with (erotetic ordering-effects). The core idea is that by sequencing statements in a certain way relative to certain intellects we can lead one to the



conclusion we want and end questions that arise either from doubt or objections (Shaw, 2016b, pp. 286–293).

Let us look at what happens when you reinterpret the Hindu Syllogism as an inference for others under the erotetic model bearing in mind the sequencing of statements:

Question:	Answer:
What are you trying to establish? Why do you believe that?	The hill has fire. Because of smoke. (I see smoke in the distance over the hill, and that has made me wonder/doubt whether there is a fire on the hill).
Why does that establish anything?	Wherever there is smoke, there is fire, such as in a kitchen where one sees smoke and fire.
Why believe that?	Recall that in a kitchen when you are cooking there is fire followed by smoke, the smoke I see over the hill is similar to the smoke in the kitchen, which is connected to fire.
So what follows from all of this?	Therefore, the hill has fire.

According to Shaw (2016a, pp. 92–100), the correct account of the Hindu Syllogism is the following:

- (*pratijñā*): The hill has fire. (The *thesis* is an answer to a question that arises on the basis of doubt. The question is: what is to be established?)
- (*hetu*): Because of smoke. (The *reason* is an answer to the question: what signifies what is to be established? In this case smoke signifies what is to be established.)
- (*udāharaṇa*): Wherever there is smoke there is fire, like in a kitchen when one is cooking and observes fire followed by smoke. (The *rule/example* is an answer to the question: why should one consider *a* to be a signifier of *b*? In this case: why is smoke a signifier of fire? The answer is given by stating a rule along with examples.)
- (*upanaya*): The case of smoke on the hill is like the case of smoke in the kitchen. (The application step answers the question: Is the hill characterised by the particular and relevant kind of smoke?)
- (*nigamana*): The hill has fire. (The conclusion is an answer to the question: Is the fire, which is the significate of this kind of smoke, present on the hill? This is how the conclusion removes the doubt expressed in the thesis.)

Under the erotetic/inference-for-others model nothing is redundant and nothing is superfluous, the steps follow naturally from a series of questions that one would ask their interlocutor for the purposes of understanding why they believe that there is a fire on the hill. And importantly, the erotetic model does not *preclude* the discovery of truth. Rather, it aims at it through the investigation of questions. *The main point* is that one is brought into

critiquing the Hindu Syllogism as redundant and superfluous in virtue of *not* drawing a distinction between an *inference for oneself* vs. an *inference for others* as well as failing to distinguish between different models we can use to understand a representation of reasoning. Who or what is the representation for?

Furthermore, Shaw informs us that some theorists in classical Indian philosophy think of how many steps there should be in an inference for others *relative to one person's understanding of another's intellect*.<sup>10</sup> For example, some scholars point out that for a sharp intellect one might only use the third and fourth step, and for a middle intellect one might only use the third, fourth and fifth step; while for a soft intellect one should use all five steps. This kind of theory makes sense if we are focused on a *causal* account of how the conclusion is caused to be cognised in an individual. The core question being: *what does it take to correctly cause someone to cognise the conclusion in a way in which they will understand it?*

Thus, a complete understanding of the theory of cognition and the context of how the theory of argument and debate developed in India is required for understanding why exactly the steps are given. Once that is in place the initial objections go away.

Nevertheless, even if we can block the critique based on redundancy, there is still the problem associated with the example portion of the argument. Why is the inductive portion mixed with the deductive portion, given that it is not even a good argument for the major premise? The answer to this question, again, trades on which version we take into account. The way forward is again to use the distinction between an inference for oneself vs. another and the distinction between veritic vs. erotetic models of reasoning.

Consider the Inductive Veritic version:

I have observed fire followed by smoke in my kitchen.  
 ∴ Wherever there is smoke there is fire.

This version of the argument is not satisfying, since it appears to be a bad inductive argument. Arguably, one should not conclude from a single observation that two things are universally connected.

By contrast, the Analogical Erotetic version looks good.

Asha: Why do you believe that wherever there is smoke there is fire?  
 Anu: I have observed fire followed by smoke in my kitchen. Have you observed that?  
 Asha: Yes!  
 Anu: I think the case of fire followed by smoke in my kitchen is the same as what is going on over there where I see smoke on the hill.  
 Asha: Why do you think these cases are similar?  
 Anu: Well I have never seen fire without smoke nor have I ever seen smoke without fire. That is I have always observed the co-presence of smoke and fire and co-absence of smoke and fire.

In the dialogue the main point of offering the example is *not* to inductively offer support for the conclusion. Rather, the point is to offer an example that has the following properties:

- (i) The interlocutor is likely to have experienced the same thing.
- (ii) The example has the properties of the universal claim.
- (iii) One can move from the example to an understanding of why one would believe the universal claim.

We can see the force of the use of the example in the dialogue by paying attention to what would happen had the interlocutor, Asha, responded differently. Imagine the following alteration in the conversation.

Asha: Why do you believe that wherever there is smoke there is fire?

Anu: I have observed fire followed by smoke in my kitchen. Have you observed that?

Asha: No! I have never seen fire followed by smoke in my kitchen because I don't cook. So, I don't see any reason to think that there is smoke on the hill over there because there is fire on the hill in a way that is similar to what is observed in a kitchen when one is cooking.

We can interpret Anu as giving the example of the kitchen, as opposed to observing fire followed by smoke in another case, because there is a likelihood that Asha has experienced something similar that would allow her to see why Anu holds that wherever there is smoke there is fire. Now, when Asha answers in the negative, this puts Anu in the situation of having to produce another example, since the first example cannot be used to persuade or help Asha understand why one should or would believe that there is fire on the hill simply because there is smoke on the hill and wherever there is smoke there is fire.

Moreover, we should be sensitive to the difference between the following questions:

*Argument:* What is the argument?

*Knowledge:* How are the premises of the argument known?

*Persuasion:* How do I get someone to believe the conclusion?

A natural question to ask after we have identified an argument is: how are the premises known? While the tradition stemming from Aristotle forward tends to separate the identification of the argument from how the premises are known, and how we should go about convincing someone in a debate, the tradition stemming from Akṣapāda does not. The Hindu Syllogism binds the logical, epistemic and persuasive aspects of reasoning together. And in fact when we look at scientific reasoning, this is what we often see. In science we are always concerned with using induction and deduction together. The idea that an argument can be good in science independently of the knowability of the premises is anathema to scientific investigation. Thus, we can see that there are virtues to at least a comparative examination of what counts as a legitimate argument form, and that by introducing our students to what an argument is through a comparative examination we allow them to have an open mind about how discussion and argumentation can be conducted.

*Premise 3*

Premise 3: Critical thinking education should include contributions from non-western philosophers.

Even though I have argued that there are legitimate things we can teach from outside the western tradition of logic and critical thinking, it does not follow that we should include them in a course on critical thinking and logic. Thus, I will begin a defence of this premise by examining a change that has occurred in textbooks for critical thinking. I will use the change that has occurred as the basis for posing a critical question: how can we allow for one kind of change, and not another kind of change?

If we examine, for example, the 1<sup>st</sup>–10<sup>th</sup> editions of Hurley's *Concise Introduction to Logic* and compare it to the 12<sup>th</sup> edition we will see some changes with respect to explanations and problem sets, but we will also note an additional stark contrast. While the earlier editions only discuss philosophical contributions from men, such as Aristotle, Boole, Venn, Frege, Quine and Kripke, the 12<sup>th</sup> edition includes discussion of Ruth Barcan Marcus and Ada Byron Lovelace.<sup>11</sup> Why was the change made? One hypothesis is that there was external pressure on the author from either the public at large, the external reviewers, or from publishers to change the fact that they were representing critical thinking and logic as a place where only men contributed. There are two basic ideas here. First, it is wrong to present logic through the eyes of the contributions of men, if in fact women did make contributions. Second, there might be something like an *upward identity trajectory* for women in logic and critical thinking when we present it alongside the fact that women made important contributions to the field. Another way to see the second point is as follows: by not presenting the works of women in logic, teachers and the book itself reinforced, the already present idea, that logic and critical thinking is for men, and not for women (more on this in the third section). But now to the critical question: *why include women and leave out non-western thinkers?* One way to show that there is no good reason to draw a difference is simply to examine a number of responses to this question and show how each is ineffective. The responses to the question will come by way of objections to the idea of including non-western sources.

Objection 1: *Non-western thinkers do not belong in a logic and critical thinking textbook because they have no ideas that pertain to logic and critical thinking.*

Response 1: In the prior section I have defended the idea that the Nyāya School of classical Indian philosophy has important ideas that are contributions to logic and critical reasoning. So, at this point what is important to point out is that the Nyāya School is one of many traditions that could be appealed to. Contributions, to name a few, have also been made by Africana, Jain, Buddhist, Arabic and Mohist traditions.

Objection 2: *Non-western thinkers contributed ideas to logic and critical thinking, but all of their contributions are false, irrelevant, or not important.*

Response 2: In the prior section I argued that one can read the Hindu Syllogism as a confused bit of proto-logic that forms part of the general history of logic, but that this reading is not necessarily the only one available. Against the reading I offered a corrective lens internal to the western tradition, based on the distinction between veritic and erotetic models of reasoning, that can be used to show how the Hindu Syllogism makes sense. Thus, the main response is that some of our thoughts about contributions from non-western philosophers are themselves confused by imposing a singular western lens on them when we are interpreting them. More importantly, we have the following situation. In some cases we could be interpreting a contribution from a non-western thinker as being incoherent because we are using the wrong lens for interpreting what is going on. In another case, it may be that the contribution is wrong only because we assume that there is only one correct understanding of western logic, as if no one in western logic has debated what the correct account of logic is. For example, independently of the contributions of non-western thinkers there is a debate, internal to western philosophy, over whether the logical connectives should be given a classical, intuitionistic or paraconsistent interpretation. And that debate sits alongside the debate over whether logical monism or logical pluralism is correct, the debate about whether there is more than one correct account of the consequence relationship: B is a logical consequence of A. But perhaps it is too much to defend the claim that the contributions coming from non-western traditions are in fact correct or better than those found in a standard logic and critical thinking textbook. So, let's consider a stronger, and distinct objection.

Objection 3: *Logic and critical thinking textbooks should only contain information that is to the best of our knowledge true.*

Response 3: The core of the objection is that we should only include contributions from non-western thinkers once they have been defended at a higher level and shown to be superior to, or at least as good as, the ideas that are presently discussed in an introductory level book. One argument for this is by way of analogy. Just as we don't include discussion of intuitionistic logic in an introduction to logic and critical thinking course, but rather only classical logic, we need not include ideas from non-western logic. Only the best, and true ideas about logic and critical thinking should be in an introductory level book.

Of course, this objection would be powerful, if it were in fact true. That is, if it were true that logic and critical thinking textbooks only contain true theories about how to reason. Lets consider one issue found in many introductory level textbooks: the inference from a universal proposition to a particular, often discussed as *existential import*.

1. All men are mortal
- ∴ 2. Some men are mortal.

Under Aristotle's interpretation the universal claim that All As are Bs entails the particular claim that Some As are Bs, because we can only be talking about categories that contain at least one instance. However, Boole disagrees, since some universal sentences articulate essential properties of entities, or definitions of entities, which are true, without there being anything that falls under one of the categories.

1. All unicorns are single-horned creatures.
- ∴ 2. Some unicorns are single-horned creatures.

On Boole's interpretation, universal claims, such as All As are Bs, need not imply particular claims, such as Some As are Bs, because there might not be any entities that fall under one or the other of the categories. The fact that we have a *true* statement about unicorns embedded in the sentence 'All unicorns are single-horned creatures' can be very useful even if there are no unicorns. For example, we may wonder whether there are any creatures of a certain kind, and then go search for them on the basis of the statement. Surely, we can discover that there are no creatures of the relevant kind. As a consequence, we would conclude that there are no unicorns.

Thus, Boole's interpretation and Aristotle's both make sense. So, it seems reasonable to teach them. But then what is the objection to teaching the Hindu Syllogism alongside Aristotle's syllogism? The fact is: logic and critical thinking textbooks do not teach: (i) only things that are true, and (ii) things that are uncontroversial truths. For the most part they teach that which has been canonised. There is no reason a comparative presentation of the Hindu Syllogism and Aristotle's Syllogism cannot be taught in much the same way that we currently teach Aristotle's Square of Opposition comparatively with Boole's interpretation of it, where existential import fails. The fact is: even if the Hindu Syllogism is inferior to Aristotle's (*which it isn't*) we can still teach them comparatively as we already do in the case of teaching universal to particular inferences.

### Conclusion

Conclusion: Critical thinking education should be revised so as to be inclusive of contributions from non-western thinkers.

Let me conclude my presentation of the argument by clarifying the conclusion of it so as to block an immediate objection to it, as opposed to the



premises. One might simply object to the conclusion by pointing to the fact that there are textbooks available to educators that focus on cross-cultural critical thinking, or at least there are texts that are sensitive to ideas that come from outside of the western canon. For example, Wanda Teays's (1996) ground breaking *Second Thoughts: Critical Thinking from a Multicultural Perspective*, and Maureen Linker's (2015) *Intellectual Empathy: Critical Thinking for Social Justice*, are two texts that include material from non-western traditions. However, this objection to the conclusion, based on pointing to texts like Teays's and Linker's rests on a confusion between two ways in which critical thinking can be cross-culturally sensitive.

The *multicultural* approach to critical thinking takes critical thinking tools that originated in the west and applies them to the multicultural world we live in. By contrast, the *cross-cultural* approach to critical thinking aims to include tools that originated from non-western traditions into the actual curriculum of critical thinking for the purposes of *improving the set of tools* available and *being respectful* of the idea of inclusion in critical thinking. While the two approaches are distinct, they are not mutually exclusive. One could write a text that is both cross-cultural and multicultural. For example, meditation is a tool of critical thinking that derives from Hindu and Buddhist philosophy. It aims to help us gain critical self-understanding of our own mental states. It can be included in a critical thinking textbook as an example of critical thinking from outside the western canon. It is, for the most part, a non-western contribution to critical thinking.

Moreover, it should be clear that the argument offered here aims at the *cross-cultural inclusion* approach.

#### **WHERE SHOULD NON-WESTERN CONTRIBUTIONS TO LOGIC AND CRITICAL THINKING BE TAUGHT?**

Suppose now that the argument for inclusion of non-western ideas into critical thinking education is good. One critical question we can ask is the following: where should non-western ideas about critical thinking and logic be taught? One response is simply the following: of course non-western contributions to logic and critical thinking should be taught. However, they should be taught in an area studies course, such as *Asian Philosophy*. They do not belong in an introductory level course on logic and critical thinking, especially one that aims to help us understand how to critically think in the context of public policy and decision making through civic debate and public discourse.

One way to see the force of this argument is to return to Siegel's distinction between two conceptions of critical thinking:

*The Skill View* holds that critical thinking is exhausted by the acquisition and proper deployment of critical thinking skills.

*The Character View* holds that critical thinking involves the acquisition and proper deployment of specific skills as well as the acquisition of specific character traits, dispositions, attitudes, and habits of mind. These components are aspects of the 'critical spirit'.

Given that the distinction does not take into account the history of logic and critical thinking, we might introduce a further view called the *comprehensive view*:

*The Comprehensive View* holds that critical thinking involves (i) the development of the appropriate skills that are constitutive of critical thinking, (ii) along with the appropriate character traits, dispositions, attitudes, and habits of mind, which are constitutive of the ‘critical spirit’. However, it also requires (iii) that the skills/tools and the nature of the ‘critical spirit’ be derived from all traditions that have contributed to critical discourse. Finally, the view requires that at some point a critical thinker engage the meta-critical question about critical thinking. That is, that a critical thinker acquire a proper understanding and appreciation of the sources of critical discourse for the purposes of bringing harmony to all that participate in the activity.

On the basis of this distinction, the following argument can be made. At the introductory level the primary goal of a course on critical thinking and logic is to teach students thinking skills, since the skills are essential for college success, life-long learning, civic engagement and public discourse. As a consequence, the historical source from which the skills derive is not important. Rather, the skill itself is important. One way to amplify the argument’s force is to concede that it was a mistake to include references to western thinkers in the presentation of logic and critical thinking in the first place. The simple idea is that just as there is a difference between maths and the history of maths, there is a difference between logic and critical thinking, and the history of it.

This argument is powerful, since there is so much need for students to learn critical thinking skills as opposed to the mere history of the discipline. But as soon as this point is made, a key presumption is revealed: *there are no skills that can be acquired through studying non-western contributions to logic and there is nothing to be gained critically by studying logic and critical thinking from a historically informed global perspective.*

However, there is an interesting and substantial response that can be given to this point. The argument builds from the discussion in the prior section where I explored the relationship between the inclusion of women in critical thinking and logic textbooks in contrast to the absence of non-western thinkers. I will present the argument as an analogy:

1. Inclusion of women in critical thinking and logic textbooks along with women role models for critical thinking and logic education reduces *stereotype threat*.
2. The problem that women face in critical thinking and logic education is sufficiently similar to the case of minorities.
- ∴
3. Inclusion of minorities in critical thinking and logic textbooks with minority role models for critical thinking and logic education would reduce stereotype threat for minorities.

Lehan (2015), through engagement with work done by numerous scholars, offers the following account of stereotype threat.

Stereotype threat occurs when a person believes they will be judged on the basis of some group-based stereotype. *They do not need to believe the stereotype, and the stereotype need not even be prevalent in their environment.* All that is necessary to activate this particular social identity threat is that a person believes that others will treat them negatively or evaluate them unfairly on the basis of one of their social identities. For example, a woman who thinks either that ‘women are not logical’ is true or that many other people believe this to be true may find that such a belief impacts her performance on logical tasks or enjoyment of these tasks (Lehan, 2015, pp. 3–4).

Saul (2013) takes the point further in her discussion of stereotype threat and the trajectory of women in philosophy.

A female philosophy student will probably be in the minority as a woman in her department, and she’ll almost certainly be in the minority as a woman if she takes classes in the more stereotypically male areas like (for example) logic, language and metaphysics. *As she continues on to higher levels of study, the number of women will be steadily diminishing. In any class she takes other than feminist philosophy, she’s likely to encounter a syllabus that consists overwhelmingly (often exclusively) of male authors.* The people teaching most of the classes are also very likely to be male. All of these factors calling attention to low numbers of women are known to provoke stereotype threat. Since stereotype threat has its strongest effect on the most committed students, this means that the most committed women are likely to underperform (Saul, 2013, p. S. 2.1, *emphasis added*).

Saul’s point, in the emphasised text, is equally true of minority students and their upward trajectory in philosophy. The syllabi and the people teaching the courses will largely be white males.

However, there is a cure for stereotype threat. Lehan discusses methods for reducing it in introductory logic and critical thinking courses. She mentions two important strategies for stereotype reduction based on the notion of a counter-stereotype role model:

[A] successful method for reducing stereotype threat is the introduction of counter-stereotype role models. One way to do this is to introduce students to members of the stereotyped group who have done well in the area. For example, “when female students are exposed to women that have performed successfully in mathematics and science related fields, they perform better than female students who do not have examples of women with such performance” . . . One study showed that reading essays about women who are successful in math can reduce the negative effects of stereotype threat . . . “Thus, direct and indirect exposure to women that have successfully navigated the field can be enough to reduce the negative impacts of stereotype threat for female

students” . . . This suggests the importance of highlighting women in logic. “[T]he direction of [the] impact [of role model introduction] depends on the believed attainability of their success: Models of attainable success can be inspiring and self-enhancing, whereas models of unattainable success can be threatening and deflating”. In the interest of attainability, it is also extremely important to mention women currently working in logic such as Audrey Yap, Penelope Maddy, Dorothy Edgington, Susan Haack and many others conveniently listed on the Women in Logic list (Lehan, 2015, pp. 10–11).

Thus, given that the technique of including women in critical thinking textbooks, and as role models in the classroom, has successfully led to stereotype reduction for women, we can legitimately ask: would the same technique work for minorities? It seems that the relevant question to explore is: are the two cases similar enough? Are the stereotypes that women face the same as the stereotypes that minorities face? And interestingly: what about the intersectional case of minority women? Here are some important considerations.

Unlike the case of the category *woman*, the category *minority* is quite diverse with various stereotype alterations within the category. For example, do Asians face the same stereotype threat in a critical thinking and logic course that African Americans or Latin Americans face? Arguably they do not, given the model minority status that is often attributed to Asian Americans (Indians, Pakistani, Chinese, Koreans or Japanese). The difference is that teachers, in the US, don’t typically look at Asian Americans thinking that they are going to do poorly in a critical thinking or logic course as much as they think that an African American or Latin American might. But this opens up the intersectionality question: given that everyone that has a race has a gender, *could it be* that the stereotype threat that women face applies without any thought to racial differences? More specifically, do teachers operate with different implicit biases about Asian women than African American women or Latin American women? And do these gender-race interactions alter the stereotype threat?

More research needs to be done on these questions. For the purposes of what I am arguing here, I cannot answer them. What is relevant to my argument is that we look closely at the fact that there are two distinct questions in the area, one concerning performance, the other concerning retention. Suppose that Asian Americans, either male or female, generally perform well on critical thinking and logic, so that they do not face a stereotype threat the way an African American male or a Latina female might. We might say something like the following. Because of the stereotype threats that the African American and the Latin American faces they perform poorly, and their poor performance is one factor that accounts for why they do not stay in the field of philosophy. However, this cannot be the explanation in the case of Asian Americans, since there is no relevantly similar stereotype threat. Many Asian women perform extremely well on first-year courses in logic and critical thinking.

So, is there another stereotype threat that Asian Americans might face that speaks to the question: why aren't there many Asian Americans in philosophy? My view is that there is another stereotype in the area. And it operates on an axis that helps explain why most Asian Americans, as opposed to African Americans or Latin Americans focus on western philosophy as opposed to Asian philosophy. The stereotype concerns what the content of Asian philosophy is advertised to be about. We might put the point simply by saying that Asian Americans face *the mysticism stereotype*. Recall the quote from H.H. Price concerning Indian philosophy:

[Western philosophy] looks outward and is concerned with Logic and with the presuppositions of scientific knowledge; [Indian philosophy] looks inward, into the 'deep yet dazzling darkness' of the mystical consciousness (*as quoted in Ganeri, 2001, p. 1*).

And other attitudes, such as *F. Ueberweg* (1857):

Philosophy as a science could [not] originate among the Orientals, who, though susceptible of the elements of high culture, were content simply to retain them in a spirit of passive resignation (*as quoted in Ganeri, 2001, p. 13*).

The core idea is that showing interest in Asian philosophy is showing interest in something that is mystical, non-rational and not really philosophy or science. Asians are often pressured into performing well in the sciences as a sign of intelligence. Thus, studying Asian philosophy is studying Asian religion, and not studying science. Anglophone philosophy focuses on logic and reason, and the stereotype of, for example Chinese or Indian philosophy, is that it does not, but in some form is mystical –in a bad sense. Consequently, Asian students typically adopt the dominant interests of western philosophers. The idea is that to be a real philosopher one must adopt an interest in western philosophy, since that is where one finds the true origins of rationality and science. In fact one often finds that it is easier for non-Asians to show a genuine interest in Asian philosophy than it is for an Asian to show an interest, since Europeans do not face a stereotype threat when engaging Asian philosophy. Rather, they are seen as having an open-minded interest in other traditions.

As a consequence, what can be seen is that the inclusion of non-western thinkers in critical thinking and logic education isn't just about informing others that non-western thinkers have contributed to critical thinking and logic in important ways. If it were about that, it could be solved by an area studies course. Rather, it is about altering perceptions, held by westerners and non-westerners about the content of Asian philosophy. By introducing it in the context of an introduction to critical thinking and logic course we do away with the idea that there is something called Buddhist logic or Chinese logic. We introduce students to critical thinking and logic through contributions from everyone that in fact did contribute. In short:

- We can make clear that critical thinking doesn't just come from the Greco-Roman-European tradition. It is part of the human condition.

Many cultures contributed in interesting and controversial ways to what falls under the semantic range of the English phrase ‘critical thinking’.

- By introducing critical thinking through a cross-cultural lens we can reduce stereotype threat revolving around the idea that non-western cultures did not contribute to critical thinking, which is often touted as the prized reason for studying the humanities.
- We can help minority students that are interested stay in philosophy. Help the dominant group come to a better understanding of the roots of critical thinking.
- We can point out that how one person debates and discusses an issue of importance to their lives doesn’t always follow the way in which another person does. And that this kind of cross-cultural understanding is important for the possibility of meaningful public discourse, disagreement and the development of epistemic tolerance and temper—tolerance of other epistemic norms.

Finally, to return to the beginning, we cannot really answer the *education for democracy question*, EDQ:

How should public education enable the ethical implementation and proper functioning of democratic processes, such as voting on the basis of public and civic discourse?

with the *critical thinking and civic debate response*, CTCD:

Public education should provide citizens of a political body with basic skills in critical thinking, civic debate and ethical public discourse,

unless *we acknowledge what I am pointing to*:

We live in a multicultural world where it is no longer possible to say that the demographics of, for example the US and the UK, are not sufficiently diverse across Indian, Chinese, Arabic, African . . . persons of origin to leave out ideas about critical discourse and discussion emanating from these traditions. To present critical thinking as originating from the human condition, as opposed to the western condition, is to give proper place to each individual, in a diverse body of individuals, who participates in an ethical public exchange of ideas leading to an outcome that pertains to all.

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## NOTES

1. It should be noted here that the distinction between the content question and the normative question is notional. One could argue that the content question either determines the answer to the normative question or it restricts the acceptable answers to it. I am notionally separating these so as to *not* presuppose a specific answer to the question: how is the content of critical thinking related to the norms of civic debate and public discourse?
2. I take this work here to be an instance of the *public-to-philosophy direction of fit* through the aid of Kraft's work on public debate in *The Atlantic*. Her work pushed me to examine the presuppositions of what is going on in critical thinking and logic education.
3. It should be clear that in pointing to the actions of these students I am in no way endorsing their behaviour. Rather, I am using their actions as a moment for reflection on what constitutes critical thinking and what should be the norms for engaging in public discourse. Furthermore, it is important to note that there is more than one interpretation of what the students are trying to do by not engaging with the standard rules of civic debate that they were informed of prior to the competition. For example, it is possible to interpret their acts not as an engagement with an alternative model of critical thinking, but rather as an act of civil disobedience. If their act is one of civil disobedience, then it is unlikely that we can claim that they are engaging in an alternative form of critical thinking. However, regardless of the multiple interpretations, it is possible to use an interpretation of their actions as a guide to the critical question: could they be engaging in critical thinking and civic debate albeit an alternative one that may have its own merits?
4. Stephen Phillips's *Critical Thinking in Service of Knowledge: Nyāya according to the Nyāya school of Classical Indian Philosophy*, a currently unpublished presentation, has a discussion of this way of drawing the distinction.
5. In this section and the next I borrow heavily from the work of Ganeri, 1996, 2001 and 2004. While there are many controversies surrounding what actually happens in classical Indian logic, for the purposes of this paper I have decided to present a picture that shows that there are important contributions from Indian logic that can be used to teach critical thinking and logic at the introductory level. I take it that just as one can teach first-order logic while recognising that there are controversies concerning it, one can also teach portions of classical Indian logic while recognising that there are controversies concerning how to interpret it.
6. See Matilal, 1985, p. 11 for discussion of the comparative point about division between different kinds of debate in Nyāya vs. *Meno*.
7. The version I am offering of the standard example derives from the work of Jaysankar Lal Shaw in his *Nyāya on the Sources of Knowledge* (Shaw, 2016a) and conversation. In his work he has articulated a sustained analysis of how the standard example of inference is to be presented.

- Although there is a debate in Indian philosophy, historically and in contemporary commentary, on the nature of inference, this should be no barrier to teaching the inference, for if the existence of a debate were sufficient, then we would not be teaching Aristotle either.
8. It is important to note, as B K. Matilal, 1985, pp. 2–3 does, that western Indologists and philosophers are not the only people to blame when it comes to confusions about the so-called ‘Hindu Syllogism’. Matilal critiques S.C. Vidyābhūṣaṇa’s very own article Influence of Aristotle on the Development of the syllogism in Indian Logic, which appeared in the pioneering work *History of Indian Logic* published in 1920. In that article Vidyābhūṣaṇa attempts to show that there are some commonalities between ‘The Syllogism in Indian Logic’ and the ‘logical rules’ and syllogism as found in Aristotle.
  9. For a sustained presentation of the core ideas see the Inference section in Shaw, 2016a, for an excellent discussion of the relevant points.
  10. Shaw informs us that according to Srinivasa Dasa in his book *Jyāṭindramata-dīpikā* we must think of how many steps there are in a syllogism for others relative to our understanding of their intellect.
  11. For example, compare Chapters 1 & 6 of the 12th edition with Chapters 1 & 6 of the 8th edition. Both chapters are on propositional logic, but only the 12th edition contains the presentation of Ruth Barcan Marcus, p. 35, and Ada Byron Lovelace p. 353. The 8th edition does not contain either. Yet both editions contain a discussion note on the history of logic, see p. 5 in the 8th edition, and compare that to p. 5 in the 12th edition.

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