

## THE VIRTUES OF CRITICAL THINKERS

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A Thesis Submitted to the School of Graduate Studies in Partial Fulfillment of the  
Requirements for the Degree of Doctor of Philosophy

McMaster University Doctor of Philosophy (2014) Hamilton, Ontario  
(Philosophy)

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SUPERVISOR: Professor David L. Hitchcock. NUMBER OF PAGES: viii, 182

## ABSTRACT

Critical thinking is an educational ideal with an accumulating canon of scholarship, but conceptualizing it has nevertheless remained contentious. One important issue concerns how critical thinking involves an interplay between cognitive abilities and associated character traits, dispositions, and motivations. I call these and other aspects of the critical thinker “critical thinking virtues”, taking them to be intellectual excellences of character, cultivated by people who tend to aim towards making reasoned judgments about what to do or believe. The central virtue that motivates any critical thinker to engage her skills in critical thinking I call “willingness to inquire”, connecting the character of the person to the skills she must use consistently to be a critical thinker. Willingness to inquire is the virtue that ranges over the application of all critical thinking skills, a basic motivational drive guiding a person towards the educational ideal. Other critical thinking virtues, such as open-mindedness, fairness, and respect for dialectical partners, also facilitate the appropriate application of critical thinking skills in a process of inquiry. Pedagogues should therefore seek not only to instruct for skills, but also to explicitly mention and instruct for the virtues as well. I conclude by offering curricular recommendations in this regard.

## ACKNOWLEDGEMENTS

I would like to acknowledge Dr. Mark Vorobej and Dr. Allen Pearson for their support and valuable input as members of my thesis committee. I would also like to acknowledge my external reader, Dr. Peter Facione, for his critical and helpful feedback, and Dr. Ralph Johnson, who also provided me with insightful critique.

My special thanks and acknowledgement go to my supervisor and mentor, Dr. David Hitchcock, whose professionalism, candid criticism, and attention to detail made it possible for me to complete this thesis. His support has been invaluable throughout this process, and impossible to overstate.

Finally, I would like not only to acknowledge but also to dedicate this work to my parents Mara Witzling and William Hamby, to whom I owe everything, and to my wife Kasia and my daughter Zosia, for whom I would do it all over again.

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## DECLARATION OF ACADEMIC ACHIEVEMENT

The following is a declaration that the research in this document has been completed by Benjamin Hamby



“What makes a man a sophist is not his abilities but his choices.”  
~Aristotle, *Rhetoric* 1355b8-1355b22

## INTRODUCTION

### 0.1 PRELIMINARY REMARKS

For more than a century, and especially over the past five decades, the concept of critical thinking has become a widespread pedagogical ideal in North American post-secondary education, and increasingly in secondary and primary education as well. According to Jones & Ratcliff (1993), more than 800 colleges and universities in the United States “offer a course in critical thinking in some form” (p. 15). Twenty years later it is safe to say, simply by glancing at department websites across academic institutions, that critical thinking has retained and even increased its popularity, to the point of sloganeering: educators and administrators continue to stress critical thinking as a laudable educational outcome for students at the post-secondary level, sometimes without any attempt at articulating what the ideal is. The popularity of the idea of critical thinking, even if that idea is not well understood, has been fuelled at least in part by the growing demand from businesses that their employees be critical thinkers (Taylor, 2010).

The roots of the pedagogical ideal in the 20<sup>th</sup> and now 21<sup>st</sup> century come from John Dewey, whose influential book *How We Think* (1910, 1933) articulated an approach to the process of reflective thinking aiming towards the resolution of

“felt difficulties”, and established the importance of active problem-solving, scientific inquiry, and the associated intellectual attitudes and habits of mind, what I call “critical thinking virtues”, that are required for a truly educated and thoughtful citizen in a democratic society. Dewey is acknowledged as the progenitor of the contemporary critical thinking movement, and his thoughts on inquiry and the critical thinking virtues are still widely referenced today, more than a century after he formulated them.

Another early voice in critical thinking theory was Edward Glaser. His influential doctoral dissertation, *An Experiment in the Development of Critical Thinking* (1941), inquired into the theoretical concept and empirical assessment of critical thinking, and was associated with the Watson-Glaser critical thinking test, a widely used testing instrument for college-aged students that is still used today, offered by reputable educational publishers like Pearson. Glaser’s test set the stage for future efforts at critical thinking test design, and like Dewey stressed the habits of mind necessary to think critically by labelling that quality of the person the “spirit of inquiry”.

In addition, Matthew Lipmann (1991/2003), Israel Scheffler (1960, 1976), John Passmore (1969, 1980), and Alfred North Whitehead (1929) are among a chorus of powerful voices who were interested in the educational ideal of the reflecting, inquisitive, thoughtful, and rational person, and who also stressed the

character of the person as being important to the ends of critical reflection. Passmore is an example of this continued understanding, taking a cue from Dewey and Glaser. He thought that the critical thinker is a person who is both willing and able to apply her cognitive resources to the ends of critical thought, calling the collection of personal qualities necessary for a person to be a critical thinker “the critical spirit”.

In 1962 Robert Ennis wrote and published in the *Harvard Educational Review* what has become a foundation of critical thinking theory and advocacy, an article entitled “A concept of critical thinking: A proposed basis of research in the teaching and evaluation of critical thinking”. Ennis has since revised and expanded his conception of critical thinking, and has established himself as arguably the foremost scholar on critical thinking theory and assessment, still actively researching in the field. His definition of critical thinking as “reasonable, reflective thinking focused on deciding what to believe or do”, though not immune from criticism, has remained a powerful and lasting formulation of the educational ideal that has found and continues to find many supporters. Ennis conceives of critical thinking as consisting of skills and dispositions. Without caring to get things right, without a tendency to seek alternatives and be open to them, and without other relevant dispositions such as the overarching inclination

to think critically, the critical abilities a person has will never be sufficient for her to be a critical thinker.

New influential voices beginning in the 1980's, such as Harvey Siegel (1988, 1997), Richard Paul (1989, 1992), and Peter Facione (2000), have helped to grow the movement of scholarship, advocacy and pedagogical practice of educating for critical thinking today. Siegel and Paul also stress the character of the critical thinker as of paramount importance, with Siegel following Passmore in referring to the critical spirit and Paul claiming that a skilled thinker who is nevertheless unreflectively socio- and culture-centric, or otherwise biased, is a critical thinker only in a "weak sense".

Facione's Delphi report (Facione 1990) is an expert consensus statement detailing a conceptualization of critical thinking, along with recommendations for pedagogical implementation. The consensus panel also found that the critical thinker of necessity possesses certain "habits of mind" which enable her to put her cognitive skills to appropriate use. Facione has since continued his research into critical thinking assessment, and heads a private company, Insight Assessment, whose mission is to provide high quality testing instruments for critical thinking. One of Insight Assessment's tests is a "critical thinking dispositions inventory", one of the few testing instruments that attempts to measure the extent to which various critical thinking virtues are present in a person's thinking.

In addition, new critical thinking textbooks continue to be published to satisfy the popularity of standalone critical thinking courses; many of these are the result of a culmination of scholarship and pedagogy that has now covered more than a century since Dewey's notion of the critical thinker in *How We Think*. Bailin and Battersby (2010) is one such notable textbook that stresses critical inquiry, and, following Glaser (1941), "the spirit of inquiry", aligning with the common trend of stressing the critical thinking virtues that must accompany the process of inquiry that constitutes critical thinking.

Even the most notable exception to this widespread agreement regarding critical thinking virtues, Missimer (1990, 1995), who suggests that all it takes to think critically are the skills of critical thinking, concedes a minimalist character view when she says "that the only [character] trait necessary [to be a critical thinker] is a disposition to think critically" (1990, p. 149). In this way, despite her contention to the contrary, Missimer acknowledges that to be a critical thinker it takes more than just ability: it takes a certain willingness, or in Missimer's words, "enthusiasm", to apply those abilities in purposeful acts that appropriately aim towards the ends of critical thinking.

The current scholarship and institutional acceptance of the ideal of critical thinking, and many textbooks that today are used to further it, are indebted to these important voices from the history of ideas and from contemporary

scholarship that have examined what it means to think critically and to be a critical thinker. While different thinkers speak of the critical thinking virtues in different ways, there is a consensus that they are a necessary part of the ideal of the critical thinker, the kind of thinkers we want our students to be in school, and in their personal lives as members of our democratic society.

## 0.2 THE CONNECTION BETWEEN SKILLS AND VIRTUES

However, while the importance of the educational ideal of critical thinking has steadily gained currency, with an accumulating canon of scholarship at its foundation, conceptualizing it has nevertheless remained contentious in various ways, despite efforts such as Facione’s Delphi report, and despite the consensus that critical thinking involves skills and dispositions, and that the critical thinker must manifest both. One source of contention concerns just how critical thinking involves the interplay of cognitive abilities with character traits, dispositions, and motivations. According to Facione, “[w]hat might be described as an over-emphasis on skills has been countered recently by a rebirth of interest in the dispositional side of thinking” (Facione, 2000, p. 62). This rebirth, however, has produced various accounts that are all in some way plausible, but which also differ in their details in sometimes incompatible ways. Paul, for instance, thinks

that a thinker who possesses few of the critical thinking virtues might still be a critical thinker, albeit one in a weak sense. But for Siegel, a thinker who does not manifest the critical spirit cannot really be said to be a critical thinker.

In addition, even while many acknowledge the importance of the character traits that the critical thinker must possess, debates concerning which skills matter most and how best to instruct and test for them maintain a certain priority in critical thinking theory, and the motivational, affective, and dispositional side of critical thinking is comparatively neglected. According to William Hare, who is a notable exception to this rule: “[p]erhaps because skills can be more easily measured than attitudes, and because they are perceived as practical and directly useful, discussion of critical thinking often deals exclusively with skills and techniques” (Hare, 1999, p. 90).

I understand critical thinking virtues to be cultivated excellences of character that are productive of the ends of critical thinking. I argue that these excellences manifest themselves in a critical thinker who has the motivational drive to seek reasoned judgment. This central virtue guides a thinker to engage in critical thinking, connecting the character of the person to the skills she must use to consistently think critically and thus be a critical thinker. Rather than thinking that there is a separate motivational component for every virtue, as Battaly (2008) argues following Zagzebski (1996), I claim that there is a central motivating



virtue that covers all other virtues, but more importantly, all other skills. That central motivating virtue I call “willingness to inquire”, and argue that it is the cardinal critical thinking virtue that ranges over the application of any critical thinking skill and over any other critical thinking virtue.

Other critical thinking virtues facilitate the appropriate application of critical thinking skills and background knowledge in purposive cognitive acts, in a process of careful thinking about issues that aims towards critical cognitive achievements, the final cognitive achievement being reasoned judgment. The cardinal critical thinking virtue of the willingness to inquire, however, is the baseline virtue that any person must possess if she is to engage in purposeful thinking that carefully aims towards judgment by employing certain critical thinking skills in virtuous ways. The upshot of this thesis is that the critical thinking skills that a person uses in critical inquiry are related to the virtues that a critical thinker should possess if she is to be the kind of person who consistently and aptly thinks critically. Critical thinking instruction should teach students how to apply critical thinking skills in virtuous ways, in an attempt to help them learn how to go through the process of carefully thinking about an issue in order to come to a reasoned judgment, what Bailin and Battersby (2010) call “critical inquiry”.

### 0.3 SUMMARY OF CHAPTERS

In Chapter 1, I argue for the educational ideal of the critical thinker, claiming that it is a laudable goal that has deep philosophical and pedagogical roots. I note the common practice among theorists and textbook authors of critical thinking of associating critical thinking with Socrates and the Socratic spirit of inquiry. Linking critical thinking to the concept of the ancient ideal of the Socratic philosopher contributes in modern times to a defensible conception of the critical thinker because it grounds that ideal firmly in the character of the person. Since part of the goal of teaching critical thinking is to grow a more thoughtful citizenry, attending to the character of our students inspired by the figure of Socrates is vitally important to achieve that goal. The strong agent-centered approach to inquiry that Socrates exemplified, seeking wisdom and understanding in his communicative interactions with others, examining his life and thereby making it worth living, sets the standard for what we mean when we talk of the thinking person who reflects on her decisions and beliefs in an intellectually virtuous way.

Stressing the character of the person as a necessary part of what it means to be a person who consistently engages in critical thinking is not unique to the ancient Socratic conception, though, and we need not simply equate it with the

ideal of the virtuous philosopher. For the modern conception of the liberally educated person, in the spirit of John Henry Newman, taking his cue from Augustine and the classical conception of a liberal education (Topping, 2010, p. 380), also mirrors what today we mean by the critical thinker, in that what matters about education and learning and thinking for Newman is developing intellectual character, not just traditional disciplinary “knowledge”, typically learned by rote. Newman’s notion of the liberally educated person takes its cue in part from the Socratic ideal, in that it too stresses the character of the person; this stress on character carries over to our conception of the ideal critical thinker.

Similarly, John Dewey (1910, 1933), who is widely recognized as the progenitor of contemporary critical thinking theory and instruction, also stressed the character of the critical thinker when he argued that educating students to be thoughtful participants in their democratic society, contributing to a culture that values meaningful political participation from its individual citizens, involved not only knowledge, but attitudes and habits of mind, relevant affective dispositions that when combined with ideas would animate them into meaningful action. On the campuses of today’s 21<sup>st</sup> century colleges and universities in North America, we see more than ever the need to teach our students how to think about the knowledge they gain in their classrooms. Students today need to learn not just about the problems that they face, but how solutions to our cultural and societal

and scientific problems can be addressed. In a word, students need to be encouraged to be the kind of people who value addressing these questions, and who address them with virtuous habits of mind such as intellectual honesty and humility, critical thinking virtues that contribute towards intellectual achievements by the way they guide the use of skills towards those ends.

I conclude the first chapter by briefly showcasing some popular conceptualizations of critical thinking that, despite their differences, all share a common stress on the character of the critical thinker. The educational ideal of critical thinking is laudable because it is rooted in the wisdom of the history of ideas in the figure of Socrates, because it is influenced by the laudable goal of a liberal education, and because it has practical significance for our participatory democracy, our scientific progress, and the politically liberal ideals North American institutions continuously strive, but often fail, to live up to. Critical thinking, which is a higher order thinking, is not consistently achieved merely by employing a skill or a set of skills, nor by rote learning: it is a way of approaching inquiry with right character so that those skills and that knowledge are put to the most appropriate use in efforts aiming at reasoned judgment. A critical thinker is not just a skilled thinker with stores of background knowledge, but a virtuous intellectual who puts on the mantle of the Socratic spirit, the liberally educated person, and the inquisitive citizen in her efforts to reach reasoned judgments

about what she believes and does. Contemporary articulations of the ideal of critical thinking offer a resounding and legitimate call to cultivate excellences of intellectual character in addition to knowledge and intellectual skills.

After establishing critical thinking as a laudable educational ideal that should stress the character of the person in addition to skills and knowledge, I move on to Chapter 2, wherein I argue for the definition of critical thinking offered by Bailin and Battersby (2010). Their definition of critical thinking as the “careful examination of an issue in order to come to a reasoned judgment” is a defensible definition because it accords with the purpose and goals of having the concept of critical thinking, because it is a normative definition that prescribes the way a person should think if she is to be a critical thinker, and because it accords with the criteria Johnson (1996) claims should be met by any definition of critical thinking. I conclude Chapter 2 by offering some reflections on the importance of distinguishing between critical thinking skills and virtues, a widespread and acknowledged distinction among critical thinking theorists.

In Chapter 3, I locate the general character trait that would tend to confound and prevent the skilled thinking process that is critical inquiry. I find that the general confounding character trait preventing a person from being a critical thinker is a lack of motivation to seek reasoned judgment, or a motivation to seek something other than a reasoned judgment. Since a lack of motivation is

the contrary of willingness, which in turn is the quality of valuing and being motivated and disposed to behave a certain way, then, whatever critical thinking skills are employed in critical inquiry, they must be willingly employed. Since the wrong motivation (such as the cognitive bias of “motivated inference”—inferring a pre-conceived conclusion even in light of confounding evidence) will also tend to work against a reasoned judgment, the motivation to carefully examine an issue in an effort to reach a reasoned judgment, what I call the “willingness to inquire”, is the critical thinking virtue that should guide all skilled thinking in the person who is an excellent critical thinker. Willingness to inquire is therefore a more primary critical thinking virtue than charity, open-mindedness, valuing fallacious-free reasoning, or the other virtues I describe later, in Chapter 4, because without the motivation to employ the skills that aim toward reasoned judgment, it is impossible to be the kind of person who characteristically employs her skills towards that end.

In Chapter 4, I consider in particular a range of the skills that facilitate achieving reasoned judgment through a process of critical inquiry. I find that specific critical thinking skills have associated confounding critical thinking character traits, which will tend to impede their appropriate manifestation. These confounding traits indicate the critical thinking virtues that are associated with critical thinking skills. For example, since the skill of paraphrasing a text involves

accurately restating another author's ideas in different words, while neither adding to nor subtracting from the meaning of the original ideas, the confounding traits associated with the skill of paraphrasing are those that would lead to inaccurate paraphrasing by someone who in principle can paraphrase skilfully. Some confounding character traits, which are sometimes species of moral failings, such as dishonesty and maliciousness, would tend to work to impede a skilful paraphrase by contributing to its inaccuracy. Since paraphrasing, to be done skilfully, must above all be done accurately, then the associated critical thinking virtues of the skill of paraphrasing would be honesty, carefulness, and non-maleficence: the contraries of the critical thinking vices above.

In Chapter 5 I articulate a number of classroom interventions and designs that I suggest will help to foster the critical thinking virtues, and in Chapter 6 I similarly articulate and defend a number of assignments which I claim will likewise do the same. I conclude this thesis with some reflections on the significance of my arguments, and suggest ways my claims in this thesis might be validated in the future through pre- and post-testing of critical thinking classes that utilize a curriculum explicitly designed to foster the virtues.

#### 0.4 CONCLUDING REMARKS

In sum, my thesis provides a systematic theoretical account of the critical thinking virtues, linking them to associated critical thinking skills that are employed in the process of critical inquiry that aims towards and facilitates reasoned judgment, and that are together constitutive of the critical thinker. This thesis can hopefully provide a kind of pedagogical road map of theory and practice for critical thinking instructors who wish to give explicit attention to the critical thinking virtues in their classrooms.



## 1 THE EDUCATIONAL IDEAL OF THE CRITICAL THINKER

Critical Thinking theory experienced a boom in the 1980's, and while the high water mark of theoretical activity may have since receded, the popularity of critical thinking as an educational ideal has not diminished. Scholars disagree on the details, but there has emerged a canon of literature, and an established narrative of how we have gotten to this point. Throughout it all, the concept of the intellectual character of the critical thinker has played an important role. The narrative I trace begins with Socrates. It moves on to John Dewey and Edward Glaser, and later to John Passmore, Robert Ennis, Richard Paul, Harvey Siegel, and Sharon Bailin. Of course there are more than eight important thinkers in this movement, and how such a list could be added to can be debated. But just as the educational ideal of the critical thinker is widespread, so too is the recognition that such a thinker is an ideal sort of person, and that tradition arguably begins with the iconic figure in the roots of western thought itself: Socrates.

In the Western philosophical tradition the figure of Socrates has long been the archetype of the true philosopher: the ideal thinker who actively, independently, and self-critically examines beliefs in light of the best evidence and arguments for holding them; the person who values knowledge and who relentlessly pursues truth, while honestly recognizing his or her own ignorance;

the teacher who is also the perpetual student and a role model of exemplary inquiry; the virtuous lover of wisdom who cares less about riches and power and the body and who cares above all else to cultivate the excellences of the intellect; the gadfly of unreflective society, challenging others to justify their claims, to be virtuous inquirers, and not to claim to know what they do not know. Socrates, the ideal and true philosopher, is set apart in the history of ideas because he was not only skilled in argument, but because he *valued* it so highly, so much so that he was willing literally to die for philosophical ideals of truth and justice and goodness. If there is a bit of the melodramatic in this picture of Socrates, this is all for the good, because his intellectual *passion, relentlessness, curiosity, and impartiality*, in short, these and all the other virtues he manifested in his intellectual approach, set him apart as a thinker of the most laudable sort, and represents an almost storybook ideal of true philosophical *character*.

The Socratic ideal represents not only the ideal character of the true *philosopher* from antiquity through modernity to contemporary times, but a species of it is also the ideal of the person whom today we call a critical thinker. “Critical thinking” is an expression coined in the early 20<sup>th</sup> century, but the Socratic attitude has lived on and been valued in the Western history of ideas for millennia. In a self-aware, methodical, and intellectually virtuous way, Socrates led his dialogical partners in exercises that disproved their theses through their

own admissions. By thus indicating the tremendously deep and complicated ideas that were at play, Socrates exemplified the need to approach those ideas carefully, tenaciously, with argumentative skill, and with an open-minded sense of fallibility. Similarly, though the critical thinker does not seek to merely refute, the critical thinker does, like Socrates, strive to be a certain sort of *intellectual person*, who does not always trust the first and quickest answer, follows reasoning where it leads, is humbly aware of his or her own fallibility, industriously and fairly probing claims and arguments, all the while seeking to be the best intellectual person he or she can be.

But in the history of ideas in the west, Socrates is only one beginning of the inspiration for the character of the critical thinker. As William Hare (1998) notes regarding the historical sources of the ideal of critical thinking, such a history “would include references to Mill on keeping one's mind open to criticism, Kant on thinking for oneself, Hume on proportioning belief to the evidence, Descartes on the need to assess, not simply to be acquainted with, the views of other philosophers, and on through the history of philosophy to its origins, in the western tradition at least, in the Socratic emphasis on the examined life” (p. 39). So the roots of critical thinking are found in this history that holds in such high esteem the figure of Socrates, along with many of the greatest thinkers in the history of ideas with their introspective, intellectually virtuous philosophical

character. Again, the list could be expanded to include many other thinkers who have contributed to this ideal, but what Socrates and others show us is that philosophical character is no less important than philosophical ability or skill in the task we set ourselves to be better inquirers.

This is especially true when one considers the Socratic ideal as part of the inspiration for the pedagogical ideal of the liberally educated person, and the democratic ideal of the thoughtful and well-informed citizen. The former is an ideal whose increase in popularity was in great measure due to John Henry Newman (1801-1890), and the latter is an ideal due in great measure to John Dewey (1859-1952). In *The Idea of a University* (1852) Newman claimed that a university education should seek to be an intellectually liberating education, one that builds the active intellectual character of its students, its greatest value being in the cultivation of intellectual excellences as opposed to mere specialized knowledge learned by rote. In addition to instilling valuable disciplinary knowledge, a liberal education, according to Newman, develops in students “[a] habit of mind . . . which lasts through life, of which the attributes are, freedom, equitableness, calmness, moderation, and wisdom; or what in a former Discourse I have ventured to call a philosophical habit (p. 102).” So the Socratic ideal of developing virtuous intellectual habits of mind is alive and well in Newman’s

pedagogical ideal formulated over two thousand years later (cf. Hale, 2008, pp. 27-34).

Dewey echoed Newman, embracing a Socratic spirit that stood behind his theory of liberal education. Dewey argued that, especially in a democratic society, passive exposure to traditional school subjects was not enough to make one an educated person. Dewey claimed that a truly educated person should be what he called among other things a “reflective” thinker, someone who is willing and able to think in an active, independent way, noticing problems that call for solutions, carefully considering the various candidates for solutions to those problems, and reasoning through conclusions to examine how different solutions and the support for them stack up against one another. Only such educated people could adequately fulfill the role of a democratic citizen, who cares about social problems, and who works to solve them while tentatively withholding judgment until all the relevant evidence is examined. In other words, Dewey stressed the importance of education for democracy, the importance of inquiry for education, and the importance of attitudes for inquiry. It was therefore the educated citizen with the right attitudes and habits of mind who would be most able to contribute positively to democratic society, and who was most adept at coming to decisions based on reflective contemplation.

It was the post-Dewey world of educational reform that saw continued explicit mention of critical thinking as the guiding educational goal of Edward Glaser, who co-developed the influential Watson-Glaser Critical Thinking Test (1941). Glaser's research dissertation, *An Experiment in the Development of Critical Thinking* (1941/1972) provided much of the theoretical underpinning of this assessment tool, and elemental in the conception of critical thinking found within that research was a Deweyan-inspired definition that explicitly mentions the character of the critical thinker in addition to the knowledge and skills of such a person.

But Glaser was not alone in explicitly speaking of the educational ideal of critical thinking, and in the second half of the twentieth century the ideal began gaining traction in Robert Ennis' "A concept of critical thinking: A proposed basis of research in the teaching and evaluation of critical thinking" (1962), John Passmore's "On teaching to be critical" (1967), and Israel Scheffler's *Reason and Teaching* (1976), all of which stressed a strong agent-centered view of what it means to teach people to think. These theorists included in their conceptions of critical thinking the by-then time-honoured idea advocated explicitly by Dewey and Newman, and found in the Socratic ideal, that a truly educated person not only has various intellectual abilities, but is motivated to use those abilities appropriately, and to act and believe on the basis of them. In other words, these

more contemporary thinkers stressed the importance of character in thinking critically, again in the Socratic spirit. Passmore (1967), for instance, explicitly called attention to the need to differentiate critical skills from what he called “the critical spirit”: a person who is a critical thinker not only possesses knowledge, but is also apt to employ that knowledge in intellectually virtuous ways. The critical thinker is not just a thinker with certain abilities, but is a certain kind of person. Compare, too, the Socratic stress on intellectual virtues with Glaser’s definition of critical thinking that sees it as “a composite of attitudes, knowledge and skills”, clearly indicating the importance of character. Finally, though Ennis did not explicitly include in his original list of 12 critical thinking “aspects” the specific dispositional elements one finds in his later conceptions, Ennis later reformulated his original 1962 conception to explicitly include the dispositional side of thinking critically (e.g. Ennis 1987, 1996, 2002). For Ennis, a critical thinker is a decision-maker and belief-holder who skilfully and virtuously thinks things through to come to reasonable and reflective conclusions about what to do or believe.

Hare summarizes the recent attempts in the last century to define critical thinking in terms of skills and dispositions by saying that “[o]ne can readily see how the critical thinker needs skills and relevant critical principles if these dispositions are to be displayed; but a commitment to critical thinking also

requires the presence of certain attitudes” (Hare, 1999, p. 90). But something has been lost in the last three decades of inquiry into critical thinking, he claims, where,

[p]erhaps because skills can be more easily measured than attitudes, and because they are perceived as practical and directly useful, discussion of critical thinking often deals exclusively with skills and techniques. One sees this, for example, when critical thinking is equated with informal logic; critical thinking and critical thinking skills become virtually synonymous. A distortion results here, because skills need to be combined with certain attitudes and virtues. (1999, p. 90)

Hare also stresses the spirit of Socratic inquiry as open-mindedness, the virtue that is associated with the Socratic spirit of following reasoning wherever it leads (Hare, 1997).

Those who discuss the ideal of the critical thinker that Socrates has inspired have long argued that a thinker must possess knowledge along with the skills that enable one to work with that knowledge. But there has also been the recognition that one must have the right virtues that make her the kind of person who characteristically employs those abilities in the appropriate manner. So too do contemporary theorists embrace this dual component aspect of critical thinking and the kind of person a critical thinker is. If sophists are the intellectual villains, than Socrates is the heroic anti-sophist, and in the spirit of the contemporary critical thinking theorist Richard Paul (1981, 1984), so too is the true (or in Paul’s



language, the “strong sense”) critical thinker: a virtuous inquirer who in her disagreements with others wants to get it right as opposed to winning at all costs; a person who is aware of her own ignorance and biases, who is open to new knowledge and different perspectives; a person who values knowledge and truth intrinsically instead of valuing them only for how they can create material benefit; a person who is self-critical, curious, and willing to question her own knowledge claims, assumptions, and cherished beliefs; a person who uses intellectual tools to seek wisdom and understanding. For Paul, the Socratic spirit represents “the educational power of rational dialogue focused on questions of significance in an atmosphere of mutual support and cooperation” (1984, p. 63).

Another influential voice in critical thinking scholarship is Harvey Siegel (1988, 1997), who borrows Passmore’s language and calls for a two-part conceptualization of critical thinking, whereby there is a “critical spirit” component (based on the character of the person), and a “reason-assessment” component (based on epistemological principles of reason evaluation). A person who is a critical thinker is someone who is appropriately *moved* to seek reasons for her actions and beliefs, and who is further moved to act and believe on the basis of those reasons.

Finally, in their recent textbook, Bailin and Battersby (2010) articulate a definition of critical thinking that recognizes the necessity of the “spirit of

inquiry”: that panoply of character traits, values, dispositions, and attitudes that are required for a person to go through the “process of carefully examining an issue in order to reach a reasoned judgment.” In the next chapter I will elaborate upon their definition and defend it as my operating definition in this thesis.

## 2 BAILIN AND BATTERSBY’S DEFINITION

### 2.1 INTRODUCTION

Throughout this thesis I will be using as my operative definition of critical thinking a formulation borrowed from Bailin and Battersby (2010) in their recent critical thinking textbook. I have elsewhere argued (Hamby, 2013) that their textbook is superior to many, in part because theirs is a superior conceptualization, defining critical thinking as “critical inquiry”, or the interpretive and evaluative “process of carefully examining an issue in order to come to a reasoned judgment” (p. 4). This definition is satisfactory for a number of reasons. First, it is a normative definition, setting a defensible standard for what counts as ideal critical thinking, answering the question of how one should think if one is to think critically. For Bailin and Battersby, this means attending to detailed “guidelines for inquiry”, which refer to standards of interpretation and evaluation that stress the importance of context, alternative arguments, and dialectic. Second, it is a definition that fulfills the purpose of having and using the concept of critical thinking, as an educational and democratic ideal. Bailin and Battersby reinforce with their conception of critical thinking the educational ideal as it relates to citizenship and personal choice in a democratic society: people

having the intellectual resources to make reasoned choices about what to do and what to believe. Third, their definition stresses the *process* of thinking critically (a careful examination of an issue), which aims towards the *product* of critical thinking (reasoned judgment). In this way Bailin and Battersby avoid confusing the means of critical thinking with its end. In addition, their definition has the benefit of being current, concise, and backed by important scholarship. Finally, as I argue below, it mostly satisfies the criteria that Johnson (1996) says a definition of critical thinking should meet. For these reasons it is a defensible conceptualization of critical thinking.

Importantly, Bailin and Battersby also stress the value of the critical thinking virtues, which they collectively call “the spirit of inquiry”. In this way they stress the near-universal approach of thinking about critical thinking from the agent’s perspective: the individual, along with all her relevant character traits that contribute to critical thinking, is of paramount importance in Bailin and Battersby’s conception. Unlike Bailin and Battersby, however, I avoid referring to the “spirit” of a critical thinker when I refer to the character of such a person and the panoply of virtues she possesses, for one, because thinking of a person’s character is less mysterious-sounding than speaking of her spirit. Furthermore, being the kind of person who seeks reasoned judgment is intimately connected to being the kind of person who is willing to learn and use the skills that are required

for reasoned judgment, as I show below, in Chapter 4. Referring to this type of critical thinking personality, to this appreciation for the probative power of reason, and to this motivation to learn how to be a critical thinker as a “spirit of inquiry” makes some sense metaphorically, but since the phenomenon we are speaking of is literally speaking a person’s character, with all its interrelated motivations, values, desires, and other affective states that are properly considered stable aspects of a person’s character, I will prefer to speak of the critical thinking virtues. So, while my discussion of the critical thinking virtues will take a cue from Bailin and Battersby, it will also represent an important addition to their conception, whereby I situate the virtues in relation to critical thinking skills. At the end of this chapter, I conclude with some reflections on why virtues are not skills, setting up my discussion of the critical thinking virtues. Before doing so, however, I will proceed to justify Bailin and Battersby’s definition in greater depth.

## 2.2 A JUSTIFICATION OF CRITICAL INQUIRY AS CRITICAL THINKING

First, Bailin and Battersby’s definition sets out the way a person should be thinking if her thinking is to count as being critical. A proper conception of critical thinking should be prescriptive in this sense because we are interested in

what it takes to think critically, and in communicating those standards to our students in order to help them become better critical thinkers. Bailin and Battersby's definition thus sets down an ideal for what critical thinking is (what sorts of thinking count as critical thinking) and who the critical thinker is (what sort of person counts as a critical thinker). If a person's thinking falls below these standards, then she is not doing a good job of thinking critically (pp. 4-10), and if a person does this consistently enough, or if she consistently fails to exhibit important critical thinking virtues, or instead consistently exhibits bias, fallacious thinking, or other "obstacles to inquiry" (pp. 199-202), she should not be considered a critical thinker (pp. 14-15).

Bailin and Battersby give specific "guidelines for inquiry" that should be followed in any process that seeks reasoned judgment through a careful examination of an issue. These guiding questions orient an inquirer to the considerations that are relevant to reaching a reasoned judgment. On Bailin and Battersby's conception, in failing to respect these guidelines for inquiry, the proper process of reaching reasoned judgment would not be engaged in, and critical thinking would fail to occur. These guidelines provide a justification for Bailin and Battersby's conceptualization of critical thinking because they offer a sound direction for querying what is being inquired into. Bailin and Battersby thus claim that any inquirer should ask: 1) What is the issue? 2) What kinds of

claims or judgments are at issue? 3) What are the relevant reasons and arguments on various sides of the issue? 4) What is the context of the issue? And 5) how do we comparatively evaluate the various reasons and arguments to reach a reasoned judgment? (pp. 19-48 *passim*). By using these questions as a guide to inquiry, Bailin and Battersby offer a systematic, though not algorithmic, approach to reasoning about controversial issues that are amenable to critical inquiry.

Take the first guiding question for any inquiry, according to Bailin and Battersby: What is the issue? Identifying the controversial question that is at stake is a fundamental aspect of a critical inquiry. Without that important focusing and orienting question, inquiry cannot proceed beyond an initial familiarization with a topic, for lack of a guiding reason to inquire. Making sure that a prospective inquiry is focused on a controversial question, which is stated precisely and neutrally, is necessary for inquiry to proceed (pp. 122-124). The skills of issue identification and formulation are therefore important for any critical thinker to have, and should be part of any defensible conceptualization of critical thinking.

Take next the question of what judgments are at issue. Knowing the different kinds of judgments that are at stake in an issue is important because different criteria should be used to make different kinds of judgments: a factual judgment should be made according to criteria different than those relevant to a moral judgment. Identifying the types of sub-questions involved in investigating

an issue can help to focus attention on what evidence or arguments are relevant to addressing each of them. The skill involved in recognizing different types of judgments then is important for a process of critical inquiry to proceed.

Next, Bailin and Battersby propose as a guiding question: what are the relevant reasons and arguments on various sides of the issue? Skilfully identifying relevant reasons and arguments on the different sides of an issue is necessary because without those reasons and arguments positions on the issue at question will not be provided with the justificatory support necessary for a reasoned judgment. Without that support, the end of critical thinking will not be reached. Bailin and Battersby make clear that there are potentially many different arguments and reasons on many different sides of any issue. This is important because skilfully recognizing the variety of conflicting positions that might exist on any issue helps to build awareness of the variety of justificatory positions that will compete against one another in the process of evaluating them.

The final guiding questions that Bailin and Battersby suggest for the process of critical inquiry to proceed are the questions: what is the context, and how do we go about comparatively evaluating the various reasons and arguments to reach reasoned judgment? This last question breaks down into three components: 1) a prima facie evaluation of each argument in which one checks for fallacies, 2) an evaluation of each argument in the light of other evidence and



arguments, and 3) a synthesizing of the arguments for various positions as evaluated independently.

These guidelines are important because no issue occurs in isolation: there is always an historical context, and a past debate that is composed of competing reasons and arguments. Being aware of that history and those arguments provides a much needed perspective on the issue in question, without which a person will not be able to appropriately examine an issue to come to reasoned judgment about what to do or believe. Finally, the question of comparatively evaluating the various reasons and arguments is the crux of making a reasoned judgment. Once all relevant arguments and reasons have been assembled, the skill of weighing them against one another in order to make a comparative evaluation must be exercised if a reasoned judgment is to be reached. In this way Bailin and Battersby offer one defensible and systematic, though not linear or formulaic, normative approach to critical inquiry, offering standards a thinker should meet if her thinking is to count as being critical.

Secondly, in addition to offering a defensible normative conception of critical thinking, Bailin and Battersby's definition is tailored in such a way that if a person follows their prescriptions for how to think critically and be a critical thinker, the purpose of having the concept of critical thinking is fulfilled. Part of the purpose of holding critical thinking as an educational ideal is that student

autonomy is respected (Siegel, 1988), that citizens are more enlightened and thoughtful decision makers as it pertains to their democratic participation (Dewey, 1910), and that their lives will be richer and fuller if they think critically as part of their everyday way of being in the world (Paul, 1992). The importance of critical thinking in people's lives can be seen by the various ways a person's life can fail to be rich and fulfilling should they not be critical thinkers in the way that Bailin and Battersby define it. A person who does not step back from decisions and beliefs to thoroughly and carefully inquire into the reasons why such decisions should be acted upon or such beliefs should be held is the kind of person who will tend to make bad decisions and hold poorly justified beliefs, or at least be at risk of doing so. This is bad for democracy because courses of action will be undertaken that are not optimal for other people affected by those beliefs and decisions, and this is bad for a person's life because the beliefs she holds and decisions she makes will be at risk of not being the most justified beliefs and best actions she could make, whereas there would be less risk if she went through the proper process. Bad actions and bad beliefs make for sub-optimal outcomes in society and in an individual's life. Bailin and Battersby's take on critical thinking thus fulfills the purpose of having and using the concept: the improvement of people's lives as participating members of a democracy and as thoughtful believers and doers in general.

Not only do Bailin and Battersby offer a defensible normative conception of critical thinking that helps to explain why we have and use the concept, but their definition also accords with other popular extant definitions. In addition, it accords with the criteria Johnson says any definition of critical thinking should meet. In 1992 Ralph Johnson responded to the proliferation of definitions of critical thinking in a critical way. He claimed that there was enough disagreement and confusion regarding some conceptualizations that it was worth ceasing work on new ones until some major problems were addressed. One common question Johnson argued any conceptualization of critical thinking should address is to what extent critical thinking is *critical*. This word, after all, must pull some conceptual weight, and if it does not do so defensibly, it is no kind of conception of critical thinking.

This is one aspect of Bailin and Battersby's definition that immediately makes it attractive: the "critical" in "critical thinking" and "critical inquiry" refers in part to the exercise of careful judgment, using criteria (p. 4 and *passim*), and in part stepping back in a reflective, questioning process that queries the evidence and information that contributes to reasoned judgment. This is to be distinguished from the use of "critical" to modify thinking to mean important thinking, or thinking given over to critique in a negative way. And it is clear that these latter senses are not the ones in which Bailin and Battersby's definition of critical

thinking should be understood. Since Bailin and Battersby explicitly say that critical thinking is a process of thinking aiming towards judgment, they are obviously using “critical” in a common and clear way, and one that is in line with the civic and pedagogical ideals that the roots of critical thinking theory emerge from, as I showed in Chapter 1.

Bailin and Battersby go further in explaining how the term “critical” operates in their understanding of critical thinking, by claiming that a reasoned judgment is reached through “critical evaluation”, or the use of “criteria which identify the relevant considerations providing the basis for making a judgment” (p. 5). Their textbook is an exposition of these criteria and how to apply them to thinking about issues that aim towards reasoned judgment. So the first criterion Johnson says a definition should satisfy is met by Bailin and Battersby’s definition. The criteria that make for an appropriate evaluation of information and arguments, the process of stepping back from an initial judgment to think more reflectively about the evidence that supports that view, and reasoned judgment as the ultimate aim of any process of reflective thinking, are relevant meanings of the word “critical” in Bailin and Battersby’s conceptualization of critical thinking.

Another issue Johnson brought to the fore was what he called “the network problem”, which is the fact that “critical thinking” is often used as a cognate term for “reasoning”, “rationality”, “problem-solving” and other

concepts. Johnson argued that reducing critical thinking to rationality or to other ideas was problematic: these terms designate related, but not synonymous concepts. Only through a full-blown theory of reasoning will all such terms find their conceptual space to occupy in relation to one another, according to him. At the very least, if critical thinking is claimed to be coextensive with some other concept then this should be argued for, not left implicit in the conception of critical thinking. Johnson makes a strong case that problem solving and critical thinking, for instance, are very different concepts that should nevertheless be thought of as related in important ways.

On this front Bailin and Battersby avoid explicitly equating critical thinking with problem solving, despite the similarity of their conception of an issue with the standard conception of a problem. But their definition still might not avoid the charge of succumbing to the network problem. The reason is that, as mentioned above, they equate critical thinking with “critical inquiry”, and by critical inquiry they mean a process of reaching a reasoned judgment through the careful examination of an issue according to relevant criteria. So their definition seems to equate critical thinking with inquiry. Johnson himself (2009) distinguishes the inquiry that is the theory of argumentation from critical thinking, which he says “is, in the first instance, a kind of activity, or mental practice.” By this we might take Johnson’s view to be congruent with Bailin and Battersby, in

that, whereas informal logic is *an* inquiry (into the theory behind the uses of argumentation), critical thinking *is* inquiry, in the general sense of the mental practice that is involved when any inquiry is undertaken. But Johnson (2012) also specifically disparages the tendency to equate critical thinking with reflective judgment. So this might speak against the idea that critical inquiry and critical thinking are synonymous. However, thinking of critical thinking merely as reflective judgment is an oversimplification, and really a misstatement of what theorists are after when they refer to Dewey (1910) describing critical thinking as reflective judgment. For instance, Johnson asserts that John Dewey never referred to critical thinking, *per se*, but only to reflective judgment. This is false, however (Dewey, 1910, p. 83), as Dewey referred to both critical thinking and reflective thinking, and since he spent no time in that text making a careful distinction between the two, it is reasonable to assume he took them to be synonymous concepts. In addition, Johnson takes Fisher (2001, pp. 2-3) to be saying critical thinking is not reflective judgment, but this is erroneous too, as Fisher was neither condoning nor disparaging conceiving of critical thinking in this way, only noting that this was the very influential way Dewey formulated it. While Johnson might be right that many thinkers link critical thinking with reflective thinking with judgment as the outcome, it is not a vicious *conflation* if some rationale is provided for why the connection is being made. Part of that rationale includes a

reference to Dewey, but it also includes arguments from theorists, some of whom I cited in the Introduction and Chapter 1 of this thesis, such as Facione (1990) and Ennis (1996), giving good reasons to think that linking reflective thinking to critical thinking is justified, even if Johnson is right that “it is far from evident that they are the same thing, and/or that Dewey would have regarded them as synonymous” (p. 8).

But Bailin and Battersby do not just equate critical thinking with reflective thinking, even if they think that critical thinking can only proceed if a person steps back from an initial judgment to reflect on the evidence that supports or detracts from it. Furthermore, critical thinking as critical inquiry is not merely “judgment” *per se* for Bailin and Battersby. They make clear that critical thinking is an *activity* (a process) that *aims towards* judgment. In this way they keep the product of critical thinking distinct from the process through which that end is achieved. In addition, it is not the end of mere judgment that the activity of critical thinking aims towards, but rather *reasoned* judgment, that is, judgment reached through the evaluation of information and arguments according to appropriate criteria. Finally, it is not mere inquiry that Bailin and Battersby equate with critical thinking, but *critical* inquiry. One can inquire into something without inquiring into it critically (according to proper criteria, and done in a self-monitored way). In this way Bailin and Battersby satisfy Johnson’s requirement

that a definition not merely equate critical thinking with another concept or concepts without justification.

Johnson further claimed that the extant definitions of critical thinking were problematic in part because there are so many of them, with so many differences. It is not clear, then, that all these various definitions are pointing to the same phenomenon, as they sometimes are so different that it seems they are describing different things. Having said that, there are more or less mainstream conceptions of critical thinking, and even with its novel aspects, Bailin and Battersby's definition fits squarely in the mainstream tradition of focusing on the process of critical evaluation (a kind of skilled thinking) that aims towards judgment. This is at this point a somewhat received notion in critical thinking theory: that critical thinking is a process that aims towards judgments based on criteria of reason assessment. It can be seen in Ennis' popular definition of critical thinking as "reasonable, reflective thinking focused on deciding what to believe or do" (Ennis, 1996), which many take to be authoritative, and it is also very close to the conception formulated by Facione's Delphi consensus report, which said that critical thinking is "purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as the explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based" (Facione, 1990). Johnson



(2012) claims that the report is not a consensus at all, since roughly one-quarter of the 42 respondents did not concur with the majority on the definition of critical thinking. He also defends Fisher and Scriven's critique (1997) of the Delphi report, which argues that the definition is overly broad. However, Fisher and Scriven themselves say that "critical thinking is a kind of evaluative thinking . . . which is particularly concerned with the quality of reasoning or argument that is presented in support of a belief or a course of action" (p. 14). This is in line with the mainstream view, and echoes Ennis in its stress on belief and action reached through a process of evaluative thinking. In this respect it is also has much in common with Bailin and Battersby's conception.

Johnson argued that whatever definitions are generated are stipulative, and that they should be evaluated according to some of the critical questions I have posed above, questions that challenge and attempt to address the problematic aspects of the definitions as they are compared to other definitions. Some theorists still view the concept of critical thinking as one that is in open season, and conceptualizations and textbooks on the subject continue to be written with no consensus on just what it is that is being discussed, despite some theoretical consensus. This is a problem, but it is important to note that while Bailin and Battersby's text does represent another in a long line of products, as I have argued

elsewhere (Hamby, 2013), it is nevertheless a superior product that offers many advantages and is in line with recent scholarship.

For these reasons my approach in this thesis is not to generate a novel definition of critical thinking, but to propose as a baseline conception Bailin and Battersby's definition, which as I argued above can be seen to be congruent with Johnson's criteria for an acceptable definition, that shares a common thread with other extant definitions, and that is a normative definition, fulfilling the point of having and using the concept of critical thinking. In sum, I take critical thinking to be *the process of carefully examining an issue in order to come to a reasoned judgment*. The end of reasoned judgment, usually about what to do or believe, is the aim of critical thinking. The person who goes through that process whenever it is appropriate and reaches reasoned judgment consistently, as a thoroughgoing part of her character, is the person whom we should call a critical thinker. This is the conception of the critical thinker I will use in what follows.

### 2.3 CRITICAL THINKING SKILLS

As I argued in the Introduction and Chapter 1, critical thinking is an educational ideal, and the excellent critical thinker is a person who has background knowledge, intellectual abilities, and a particular kind of intellectual character,

and who consistently and competently puts that knowledge and those skills to use in a process of critical inquiry, carefully examining an issue aiming towards reasoned judgment. The critical thinker is thus the kind of person who uses her knowledge and skills in appropriate ways, given the ends of critical thinking. This agent-centered notion of critical thinking as critical inquiry is one I have borrowed from Bailin and Battersby (2010), and which I defended above.

In this final section, which accompanies that defence, I will briefly elaborate on what I take critical thinking skills to be, and how they are different from virtues. To be skilled in critical inquiry is to have mastered an activity, learned through practice, which is required to consistently go through a process of thinking aimed at reasoned judgments. By conceiving of critical thinking skills in this way I follow the consensus found in Facione (1990), in thinking that critical thinking skills are like any other kind of skill, in that they are special kinds of purposeful abilities “to engage in an activity, process, or procedure” (p. 14), aiming towards certain ends. So, for example, proficiency in the skills of saxophone playing is productive of saxophone music; proficiency in the skills of an athletic position on a team sport is productive of team cohesion in an effort to win; and proficiency in the skills of firing a rifle is productive of hitting the target. In general, then, a skill is an improvable ability to do something aiming towards some end. Critical thinking skills are similarly proficiencies of cognition that are

productive of reasoned judgment, and in this way critical thinking skills are “achievement concepts” (cf. Bailin, et al. p. 270): we know someone has a critical thinking skill if she is consistently able to achieve the end that the skill contributes to achieving. For instance, on an exam a student might be asked to determine whether an argument is deductively valid. A student who is reliably able to get the correct answer to such questions would demonstrate her ability to identify valid inferences. Critical thinking skills such as argument interpretation, analysis, and evaluation, paraphrasing, and fallacy identification, are all productive of reasoned judgment in a process of critical inquiry, and are all abilities that can be improved upon through practice.

This notion of skill is also consistent with the idea of a “thinking skill” found outside of the critical thinking context. In educational efforts to teach transferable thinking skills, as opposed to emphasizing factual or strictly content knowledge of a subject learned by rote, proponents of the “thinking skills movement” attempted a shift in pedagogical focus. Major theorists such as Feuerstein (1980), de Bono (1970), and Blagg, et al.(1993), were influential in promoting programs of study that emphasized such thinking skills that would transfer across subject domains, arguing that the need to educate from a thinking skills perspective was driven by the ever changing kinds of skills required to meaningfully participate in society, in addition to the need not just to acquire

information but to meaningfully digest it, processing and questioning it to better understand it (Wellington, 2006, pp. 152-154). Their thinking, shared with the critical thinking theorists, was also that learning thinking skills would better prepare students for meaningful lives in work and democratic citizenship.

What makes critical thinking skills special, differentiating them from other skills, is that they are abilities that contribute specifically to the process of critical inquiry, and to producing its ends, which are reasoned judgments. In this way a critical thinking skill is an “intellectual resource” (cf. Bailin, et al., 1999, pp. 286, 290, and *passim*) that critical thinkers use for special intellectual ends. This is not to suggest that skills are reified processes that if pursued in algorithmic ways lead to certain outcomes. But it is to claim that skills are abilities to engage in purposeful cognitive activities that contribute to a person reaching reasoned judgment.

Thinking of a skill as an intellectual resource differentiates it from a virtue in the following way: whereas a resource can be utilized (or neglected) by a person, *being resourceful* and using whatever resources one can find that are relevant to the task at hand is not a matter of ability, but a matter of attitude and orientation. The major difference here between a skill and virtue is that a skill is an ability a person has, and a virtue a characteristic a person has, or more properly speaking, the way a person *is*.

In much of the critical thinking literature the concept of skill is taken for granted, and the project has been to articulate which tasks in particular a person should be able to perform to a high degree of proficiency on an exam if we are to measure her ability to think critically. The hope would be that people who do well on an exam are the kind of people who would also be able to think critically in “real-life” situations where their skills could be put to similar use. In the thinking skills movement, as well, there is no ultimate consensus on exactly which skills are most important and should be instructed and tested for. As Wellington (2006) says, “no two lists, provided by advocates of a thinking skills approach, appear to be the same” (p. 152). Nor do we lack for lists of skills that critical thinking theorists have supplied and that are tested for. *That* good thinking (as opposed to good factual recall) and *that* critical thinking (as opposed to thinking not guided towards inquiry and reasoned judgment) involves skills that a person should be able to perform is agreed, but as to *which* skills are most important, one can find many different answers, with many different compilations of the kinds of skilled thinking activities that are claimed to be necessary for good thinking in general, or for critical thinking in particular.

But while we may debate which skills are most important for critical thinking, and thus for people who wish to be critical thinkers, no one argues against the idea that there are various special procedures and principles that

contribute to a person being proficient in producing certain intellectual ends such as reasoned judgment, or other good intellectual products: in fact most theorists are agreed that skills are necessary for a person to be successful in achieving those ends. A programmatic approach to critical thinking thus stresses skills. While Halpern (1998) might be putting the case too strongly, for surely it is not just any desirable outcome a critical thinker aims towards through the use of her skills, she expresses a common feature of critical thinking conceptualizations when she says that “the term critical thinking refers to the use of those cognitive skills or strategies that increase the probability of a desirable outcome” (p. 450).

Take Ennis (1991), who has a list of 12 major “abilities”, including: focusing on questions; analyzing arguments; making value judgments; attributing unstated assumptions, and judging observation reports. Now take again the Delphi Report, which articulates six major skills: interpretation, analysis, evaluation, inference, explanation, and self-regulation, each with a set of sub-skills (Facione, 1990). Finally, take the influential doctoral thesis written by Glaser (1941), which includes a list of critical thinking skills based on his conceptualization that is heavily influenced by Dewey’s equation of reflective thinking with scientific problem-solving. The skills Glaser lists include the ability to recognize problems; to find workable means for meeting those problems; to gather and marshal

pertinent information; to recognize unstated assumptions and values; and to comprehend and use language with accuracy, clarity, and discrimination.

While these skills from each theorist’s conceptualization represent important aspects of what it takes to be a critical thinker under the conception in which the skill is found, I am also claiming that taken together each category of skill as I have grouped them below represents the kind of generally applicable type of skill any person should have if she is a critical thinker. These various formulations of the skills necessary for critical thinking, while different, have commonalities that make them congruent with one another, and it is these commonalities that tie the various conceptions of critical thinking together into a clear exposition of what counts as a skill, as opposed to a virtue. These can best be represented in the following table, which takes those selected skills from each conceptualization that can be plausibly grouped together, indicating a common approach to thinking about the abilities a critical thinker should have.

Table 1 <i>Commonalities between critical thinking skill-sets of major conceptualizations</i>			
<b>Commonality of Skill</b>	<b>Selected Problem Solving Skills from Glaser’s Conceptualization</b>	<b>Selected Skills and Sub-skills from Facione’s Consensus Statement</b>	<b>Selected Abilities from Ennis’ Conceptualization</b>



(Problem/argument/issue) Identification	Ability to recognize problems	Analysis --Identifying and analyzing arguments	Formulating what is at issue
Skills of Evaluation	To render accurate judgments about specific things and qualities in everyday life	Evaluation --Assessing claims --Assessing arguments	Judge deductions and inductions
Generating and examining Alternatives	To find workable <i>means</i> for meeting problems (emphasis added)	Conjecturing alternatives (part of inference)	Suppositional thinking (a kind of metacognition): Consider and reason from premises, reasons, assumptions, positions, and <i>other propositions with which they disagree or about which they are in doubt</i> , without letting the disagreement or doubt interfere with their thinking
Skills of Inference	--To draw warranted conclusions and generalizations	Inference --Drawing conclusions	Identifying and making inferences,
Recognizing unstated assumptions	To recognize unstated assumptions and values;	Analysis additional unexpressed elements of reasoning, such as intermediary conclusions, unstated assumptions or presuppositions	Identify unstated assumptions

Skills of Clarification and Accurate Interpretation	To comprehend and use language with accuracy, clarity, and discrimination;	Interpretation --Categorization --Clarifying meaning	Clarifying meanings of terms and statements,
Skills of Meta-cognition	To reconstruct one's patterns of beliefs on the basis of wider experience	Self-regulation --Self-examination --Self correction	To integrate the other abilities & dispositions in making/defending a position

At first glance it might seem that there are some skills I have grouped together that do not fit with one another as well as other groupings. Since the other groupings, such as the skill of recognizing unstated assumptions, seem to be on the face of them related due to each theorist's use of the same explicit language, I will not bother to defend my grouping of these together. But for the three categories of problem/issue/argument identification, recognizing alternatives, and metacognition, I will briefly proceed to justify why I have grouped the skills from the different theorists together under these labels. My aim here is to illustrate how there is enough similarity in the different skills various theorists name to indicate that each theorist is operating on the same basic assumption that certain transferable abilities are necessary for a person to be a critical thinker, and that these abilities are something different than the virtues a person must also have to be a critical thinker.

First, take what I am claiming to be the generalizable critical thinking skill of *identification*: recognizing when something encountered is susceptible to

critical scrutiny. Whether this skill regards the recognition of an argument with some specific claim as ostensibly being supported by others (as in Facione's conception), or regards a problem that needs to be solved (as in Glaser's conception), or regards a formulation of what is at issue under consideration for belief or action (as in Ennis' conception), what the *identification* of an argument/problem/issue has in common is a person's ability to see before her some complexity that is deserving of critical reflection. Identifying an issue or problem or argument is the first step to critically inquiring into it, so the ability to identify complex situations deserving of reflection is thus a core competency if one is to critically analyze such things. Unpacking these skills further, skills of argument identification would include the ability to recognize premises, conclusions, and inferential links; skills of problem identification would include the ability to properly identify problematic situations in group and individual contexts; skills of issue identification would include the ability to expand or narrow the scope of what is being investigated depending on the situation. Each of the theorists above has thus articulated a skill that involves a person's ability to apprehend a situation deserving of critical scrutiny in some way. This common ability of identification ties the conceptions together by recognizing that a foundational skill of any process of critical thinking (however that is defined) involves a person's ability to perceive when something calls for critical scrutiny,

properly identifying what is problematic, at issue, or being argued. This is why grouping Facione’s skill of “identifying and analyzing arguments” under “identification” makes sense: identifying an argument in order to analyze and eventually evaluate it is analogous to identifying a problem to be solved, or to formulating an issue in an attempt to inquire into it.

Second, take what I am claiming to be the theory-general skill of recognizing alternatives. This is an ability some theorists, such as Hatcher and Spencer (2000) and Missimer (2004, p. 11), include explicitly in their definition of critical thinking, but it is widely regarded as a fundamental skill in almost any extant conception. Still, it seems that Ennis’ “suppositional thinking” is different than Glaser’s or Facione’s articulation of the necessary ability to think of and examine alternative perspectives on what is under consideration. Ennis explicitly calls suppositional thinking a skill of metacognition, so it could very well be grouped under that heading as well, but I have chosen to group it under what I am calling the general ability to generate and examine alternatives. This makes sense in light of the portion of Ennis’ articulation of the skill he has in mind that I have italicized above: the ability Ennis has in mind is “suppositional” because the person who engages in that activity “supposes” for the sake of critical scrutiny a view *other than her* own. Clearly, to think of a view or “other proposition” opposed to one’s own preferred way of thinking is to think of an *alternative*

which one is in doubt about, and to think about and evaluate the alternative in such a way that your doubt does not interfere with the proper evaluation of those other considerations. In this way Ennis' metacognitive skill of suppositional thinking is intimately related to the general skill of generating and evaluating alternatives, a skill which is recognized by other extant conceptions.

Finally, take what I am claiming are various skills of metacognition. Metacognition is a higher order way of thinking *about* one's thinking that can take various forms. Facione's definition of critical thinking can most broadly be characterized as the "human cognitive process. . .of purposeful, self-regulatory judgment" (Facione and Giancarlo, 2001, p. 30), a major skill contributing to the achievement of this process being the metacognitive skill of "self regulation" which includes the sub skills of self-evaluation and self-correction. For Facione's consensus statement, to be a critical thinker is in part to be able to critically appraise one's own thinking in the proper way (pp. 10-11). Without the ability to self-critique and self-correct, a person cannot properly be considered a critical thinker. For Glaser, too, "reconstruct[ing] one's patterns of beliefs on the basis of wider experience" is an important skill. Glaser here points to the ability a critical thinker should have of understanding her own thinking in light of her other beliefs. Take now Ennis, whose skill of "integrat[ing] the other abilities and dispositions in making and defending a position" seems not to be metacognitive in

the same way as these two others, in the sense that integrating other skills might happen without a person thinking about their thinking. But it is metacognitive in this sense: that to *consciously* integrate the skills in appropriate ways is to engage in a purposeful activity which one needs to plan and carry out in a careful process. As such, the organizing and marshalling and deploying of the various skills that are required for critical thinking does, under Ennis' conception, involve a higher order thinking that plans and executes such skilled processes. So Ennis' complex higher-order ability to collectively use a variety of skills in conjunction with one another is a skill that requires someone to think about how they go about thinking about something: it is a metacognitive skill.

Whether we end up accepting these theorists' conceptualizations of critical thinking as definitive is not the point. Nor is it important for every common skill in every conception to be named and grouped together. Nor is it ultimately important for the illustrations of how various different theories have certain skill-types in common to be immune from criticism on the exactness of those commonalities. For these lists of skills, and the definitions and full theories that accompany them, do represent some of the most important and authoritative attempts at a thoroughgoing theory of critical thinking, and though we might find much to critique in them, as many of the authors of rival conceptions have done, the similarities they have regarding the skills they name for critical thinking are

worth noting. While Ennis (1991) conceives of critical thinking as “reasonable, reflective thinking that focused on deciding what to believe or do” (p. 6), while Facione’s consensus statement (1990) conceives of it as “purposeful, self-regulatory judgment” (p. 2), while Glaser defines it in Deweyan terms as “a persistent effort to examine any belief or supposed form of knowledge in the light of the evidence that supports it and the further conclusions to which it tends,” and while Bailin and Battersby call it “the careful examination of an issue in order to reach a reasoned judgment”, what all these conceptions have in common is that they require a person to use their intellectual abilities to the most adept degree as reflective believers and doers. It is this adeptness of thought in the processes that are required to reach reasoned judgments, this skilled thinking, that sets a critical thinker apart from other thinkers in an important way. But as we will see in the next chapter, having an ability is not enough.

### 3 WILLINGNESS TO INQUIRE

For any skilled activity a person could engage in, sheer technical ability is never enough for a person actually to engage in that activity. For a person might have an ability to do something, but without a corresponding inclination to do it, that ability will not be employed towards achieving its ends, whatever those ends happen to be. This is true for skilled thinking activities that contribute to a process of critical inquiry aiming towards reasoned judgment, just as it is for other skilled activities that achieve other ends: for example, if a musician is to be an excellent performer, she must be technically adept at playing her instrument—but she also must actively want to perform, having the *confidence* to showcase herself on stage; for an athlete to be an excellent competitor, she must have the skills and conditioning required of her position, but without the *passion* and *perseverance* to play through the pain of extreme physical exertion, her skills will never be used when they are most needed by her team; for a Marine to be fully trained and combat-ready she must be skilled in the use of a rifle, but without the *motivation to kill* her enemy and the *selflessness* to follow orders even at the cost of her own well-being, she will not be a well-trained Marine that will fulfill her duties in combat. In these and all other skilled activities, more is required than the sheer ability to perform some task to some end. What is required in addition is a certain



commitment to, and willing engagement in, that activity: those personal qualities that drive a person to employ her skills appropriately, aiming towards the ends that are proper to them. Without those qualities, a person with ability will not be the kind of person who consistently and competently employs that ability: a musician without confidence will be no kind of performer, an athlete without passion and perseverance will be no kind of competitor, and a Marine without selfless obedience and bellicosity will be no kind of warrior. The bases of consistently and competently produced skilled activity, which would lead us to identify the character of the person with that activity, are therefore those excellences of a person's character that move her to the production of that activity's ends.

Some writers (e.g. Doris, 2010, 2002) have argued for "situationism", the idea that context dictates how a person will behave and that "virtue", understood as a firm aspect of a person's character that does not vary over different situations, is less of a factor than commonly supposed. Doris says, for instance, that "social psychologists have *repeatedly* found that the difference between good conduct and bad appears to reside in the situation more than in the person" (Doris, 2010, p. 357). But there are problems with concluding on the basis of findings in social psychology research, such as the Milgram shock experiments (Milgram, 1963) and the Zimbardo prison experiment (Zimbardo, et al., 1973), that virtue is

mostly absent in people. We should be wary of attempts to stress that situations dictate how a person will behave, dominating over the influence of a person's character. First, Doris is speaking of the moral virtues, arguing against the notion that a person will characteristically behave in the right way across a variety of different situations. But even if research suggests that in some "local" situations people do not behave in a morally characteristic way, this does not mean they do not have "global" moral characteristics. Behaviour that we see in special circumstances might prove an exception to the rule. But even if people *do not* have robust global moral characteristics, the absence of such moral characteristics in most people who think they have them need not imply that there is an absence of other global character traits that are not moral traits. So, even if there is no such thing as moral virtue, this need not mean there is no such thing as cognitive or intellectual virtue.

Second, Doris does not claim that there is no such thing as (moral) virtue, only that it is not as common as people assume. If we extend this line of thinking to the critical thinking virtues, we see that this is not a devastating criticism. Since critical thinking is an educational ideal (cf. Siegel, 1988, pp. 48-61), we recognize that someone can fall along a continuum: from being no kind of critical thinker, to being a poor critical thinker, to being a competent or an excellent critical thinker. Critical thinking thus is an ideal to aim towards, one which on my conception

requires robust character traits. If such character traits turn out to be rare, this just means that becoming a critical thinker approaching the ideal will be difficult, not that it will be impossible.

Third, no one denies that situations play some role in whether a person behaves in a characteristic manner. Milgram (1963) showed in his experiments, for instance, that a person who thought herself compassionate might nevertheless fail to behave compassionately in a situation where an authority figure was coercing her to behave without compassion. In the Milgram experiments, obedience can thus be seen to be a personality trait that proved stronger than compassion. However, this does not necessarily show that the people who behaved without compassion did so because they were not compassionate; instead, it might just as easily suggest that these people were more obedient than compassionate, or at least that they were people who could (sometimes) be strongly influenced by other factors other than compassion: in the Milgram experiments, what at most seems to be shown is that one character trait trumped another in that situation, not that there were no general character traits, and that the situation resulted in behaviour in a deterministic sense. In these ways the situationist critique of moral virtue fails to persuade that virtue is less important than is commonly assumed, and fails to represent a devastating critique of the character traits that I claim are such an integral part of being a critical thinker.

Furthermore, the common error-tendencies of thinking that cognitive scientists have documented confirm the idea that people are susceptible to errors in their reasoning in predictable ways. To the degree that a person is consistently susceptible to these cognitive biases that color her inference-making, such a person is characteristically biased, and will characteristically make bad inferences. Someone who is characteristically biased clearly will not qualify as a critical thinker approaching the ideal because to consistently make bad inferences is counterproductive to reaching a reasoned judgment on an issue. This is not to say that someone who is characteristically biased might not on occasion engage in inquiry appropriately, being metacognitively aware of her bias and attempting to and succeeding (at least to some degree) in self-correcting for it (Maynes, 2013, pp. 344-345). For instance “motivation” is the term that cognitive psychologists use to describe the error tendency a person may have to retain a false belief even in the face of evidence that countervails it (2013, pp. 344-345). A person who is characteristically motivated to reach a conclusion that accords with her desires is thus the kind of person who will tend to not think critically, and should not be considered a critical thinker. This failure of good inference making, whether failing in the service of critical inquiry or not, is rightly considered a character trait that confounds critical thinking, especially if it is a firm enough part of a person’s character. This would be the case if a person happened to be motivated

to reach a particular conclusion while at the same time failing to take into account countervailing evidence. These reflections on psychological error-tendencies are meant to illustrate the unproblematic and intuitively acceptable claim that people can be characteristically biased in their thinking. Such characteristic bias is clearly an intellectual shortcoming, so long as one values the truth highly. For someone who showcases such intellectually bad behaviour on a regular basis it makes sense to say of her that she has a kind of bad intellectual character. In some contexts a person may not behave in an intellectually vicious way, but this is not to say they are not in general an intellectually vicious person. In this way, characteristic virtuous intellectual behaviour as well as characteristic vicious intellectual behaviour are both safeguarded from the situationist critique of virtue.

Even though being a skilled thinker is a necessary condition for being a critical thinker, then, it is not a sufficient condition for being a critical thinker. A person who is skilled but who is improperly motivated in her thinking will not be a critical thinker. Critical thinking is furthermore an educational ideal born of egalitarian principles: the critical thinker, as citizen, must develop certain abilities that have the potential to contribute to social participation, but she must also be inclined to use those skills in the service of such participation. One important reason, among others, why we educate students in critical thinking is so that they will become more thoughtful members of society who constructively participate

in the democratic process, or at least have a thoughtful and informed awareness of their own citizenship and their place in society. Imparting the skills for them to do so but neglecting to address their motivation to do so therefore runs the risk of graduating students who know about democracy, and could potentially be participants in democratic decision making, with a strong social self-awareness, but who will not actually become such participants because of an absence of the attitudes, values, goals, and dispositions that motivate and help to manifest such behaviour consistently in their lives as democratic citizens. Or, paraphrasing C.S. Lewis (1944/2009), we run the risk of nurturing more clever devils: students who are not simply apathetic, neglecting to use their skills from want of the proper inclination, but students who choose to use them in the wrong ways, for the wrong purposes. In such cases we would be failing to educate for critical thinking, however well students might do on assessments of skill, and however much they might employ those skills for purposes other than meaningful and constructive democratic participation and awareness. The skilled activity of critical thinking, therefore, requires virtue in addition to skills: focusing just on technical abilities misses the strong agent-centered approach that critical thinking borrows from the Socratic conception of the good inquirer and that has been passed down as a central aspect of good thinkers from antiquity through to contemporary times, as I argued in the Introduction and Chapter 1. It misses the purpose of having and

using the concept of critical thinking because it neglects to foster people who are truly critical thinkers. Without a strong volitional component born of the proper values and attitudes, critical thinking skills will never be enough for the sorts of thinkers we want our children to become in our society: self-aware, reflective thinkers who value the probative power of reason, who sincerely desire to reach judgments that are based on a well-reasoned process of thinking, and whose able participation in democratic society reflects those values and commitments.

Critical inquiry as Bailin and Battersby define it (see Chapter 2) moves beyond the traditional democratically inspired idea of critical thinking, encompassing any properly criteria-based process of reflective thinking that aims towards reasoned judgment, whether it is part of a participatory effort in democratic living or not. And in their definition they stress the importance of “the spirit of inquiry”: that mix of attitudes and other personal characteristics that are required for a person to be a critical inquirer. So, even though contemporary conceptions of critical thinking like Bailin and Battersby’s are inspired by earlier conceptions such as Dewey’s that stress the kind of thinkers citizens should be in a democracy, their definition moves beyond this conception and includes the kinds of thinkers we want to educate people to be in their lives in general, regardless of their democratic participation and the significance this has for society. And even though the contemporary conception of critical thinking, as

reflected in Bailin and Battersby's definition, has broadened to include reflective judgment-making on issues of all kinds, the same point regarding skills and virtues can be made for this expanded definition of critical thinking in the context of education: we fail in our educational efforts if the students we graduate are skilled at critical inquiry but never or only rarely use those skills in their lives outside the classroom when it is appropriate for them to do so. Therefore, a critical thinker will not just be skilled, but will also have a certain character, possessing and manifesting what I call the critical thinking virtues: those cultivated excellences of a person's intellectual character that generally guide and reinforce the appropriate use of her critical thinking skills in efforts at critical inquiry. They are those firm aspects of a critical thinker's intellectual character that include motivations, values, dispositions, goals, and other habits of mind that are in part productive of reasoned judgment, in the interpretive and evaluative process of critical inquiry.

There are many reasons why critical thinking virtues are necessary for someone to be a critical thinker, appropriately using her skills in efforts at critical inquiry. First, a person can be a highly skilled thinker yet not aim towards reasoned judgment when she employs her skills, either neglectfully, accidentally, or more overtly. To illustrate the ways a person might fail in these regards, imagine someone *neglecting* to employ her skills in an effort other than to reach a



reasoned judgment, by making a snap judgment, when she knows she ought to be seeking a reasoned judgment instead. Such would be the case if a person decided to buy a car based on a single criterion, when she knows there are other relevant criteria she should take into consideration. Next, imagine a person *accidentally* employing her skills in an effort to reach a reasoned judgment, when she erroneously decides that a reasoned judgment is not called for. Such would be the case if a person decided to buy a car but mistakenly thought that there was only a single criterion she should take into consideration. Finally, imagine a person more *overtly* employing her skills in an effort other than to reach a reasoned judgment, when she consciously ignores the prospect of making a reasoned judgment altogether and decides instead to make a decision based on a pre-conceived notion. Such motivated decision making would be the case if a person decided to buy a car and discounted the relevant considerations another person offered to aid in that decision, because those considerations conflicted with a conclusion the person had already reached. In these ways a person might be skilled, but would fail at critical inquiry because she does not seek out reasoned judgment, employing her skills appropriately to that end.

Another reason why the critical thinking virtues are necessary for a person to be a thoroughgoing critical thinker is that a person can be a skilled thinker aiming towards reasoned judgment yet never be disposed or only rarely be

disposed to employ those skills in that effort. For example, a person who consistently recognizes when a reasoned judgment is called for might nevertheless be consistently unwilling to make the effort that is required to go through a process of critical inquiry. In such a case a person has ability, and has a certain minimal desire to reach a reasoned judgment, yet is prevented from actually going through that process because of a deficiency in the industriousness and tenacity that is required to do hard intellectual work. For example, a person who decides to buy a car might understand that there are many criteria that are relevant to making a reasoned judgment on the issue, and might see that critical inquiry on the issue is called for, but if she is too lazy to actually examine those other considerations and engage in inquiry, her desire to reach a reasoned judgment won't be sufficient to dispose her to examine those considerations.

A third reason why the critical thinking virtues are necessary is that a person could be disposed to use her skills aiming towards reasoned judgments, but be compelled, coerced, or otherwise improperly disposed to so employ them. In this way a person might seek reasoned judgment, be inclined to use her abilities to that end, but be inclined for reasons that have nothing to do with her own volition. For instance, a student might unreflectively accept her critical thinking instructor's pronouncement that people should more often go through a process of critical inquiry: as a result, such a student might engage in inquiry when it is

inappropriate to do so, such as when a decision needs to be made expeditiously, and when deep reflection would have bad consequences because of lack of timeliness. In this way a person might have an ability to engage in inquiry, and might in some minimal sense be disposed to engage in inquiry, but might still do so inappropriately because of her thoughtless habit of doing what her instructor tells her to do. In this way a student would seem to be indoctrinated into thinking critically, which ironically works against the kind of independent judgment-making that critical thinkers characteristically engage in. But to be a critical thinker it is not enough to be disposed to seek reasoned judgment and have the ability to do so: if a person engages in critical inquiry without contemplating whether inquiry is warranted, or does so blindly as a result of indoctrinated habit, then such a person does not approach the ideal critical thinker, because she is not really thinking for herself, and is not the kind of person we hope is nurtured in our instructional efforts at critical thinking. Furthermore, indoctrinating a student in the disposition to think critically denies to the student the respect she deserves as a thinking person. Such disrespect is antithetical to the purpose and point of teaching critical thinking (cf. Siegel , 1988).

So a person can have an ability to use the skills that might contribute to critical inquiry, but if there is no corresponding attitude that disposes her to use that ability towards the ends that are proper to it in circumstances that are

appropriate, the ability can be wasted for the purposes of those ends: skill, without the inclination to employ it (and to employ it appropriately), is an empty good, ultimately unproductive of the goods it seeks. In this way both skill and virtue are productive of the ends of critical inquiry, so any talk of skill must be coupled with talk of virtue if we are concerned with people consistently and competently employing their skills. As I showed in Chapter 1, different thinkers have characterized this virtuous aspect of the critical thinker differently: Harvey Siegel follows John Passmore in referring to “the critical spirit”; Bailin and Battersby follow Glaser, and Glaser Aristotle, in referring to “the spirit of inquiry”; Robert Ennis calls the virtues that are required “critical thinking dispositions”; Facione calls these various traits “habits of mind”. For a person to possess the critical spirit, the spirit of inquiry, critical thinking dispositions, or the right habits of mind, is thus for a person to possess an amalgam of different attitudes, values, and character traits that are required for a person to be a critical thinker. In a word, to possess the critical spirit or the spirit of inquiry is to possess certain virtues that contribute to a person consistently and appropriately producing reasoned judgment.

What are those virtues that constitute the character of the critical thinker, or the so-called “critical spirit”? This question is answered by looking at what led us in the first place to think *that* virtues are required: we found in general that

virtues are required for skills to be put to use in the production of ends that are proper to them, and that other traits will confound a failure of skill towards those ends. The example mentioned at the beginning of this chapter was the performing musician: her skills are put to use aiming towards performance, so virtues required of her are the virtues that are in part productive of performance, such as confidence and courage, and the confounding traits that would prevent her from performing are a lack of self-confidence and cowardice; for an elite athlete, her skills are put to use aiming towards competition, so one virtue that is required of her is the tenacity that is in part productive of competitive athleticism, a lack of tenacity contributing to a tendency to fail to be competitive; for the Marine, her skills are put to use in combat aiming towards the destruction of her enemy, so the virtues required of her are such virtues as selfless obedience and combativeness that are in part productive of that end, a lack of obedience and bellicosity working against a Marine employing her skills well. The skills required to reach the ends of some activity thus indicate in general the sorts of virtues that are required for a person to consistently achieve those ends, and the sorts of confounding attitudes, values and dispositions a person should likewise avoid to achieve them.

For the critical thinker who approaches the ideal, her skills are put to use in the process of carefully examining an issue to come to a reasoned judgment. The overarching critical thinking virtue that in a critical thinker is required,

without which those skills would not appropriately be employed in critical inquiry, is therefore the appropriate desire to seek reasoned judgment. For, regardless of the critical thinking skill, without the internal motivation to use it and a disposition to employ it in efforts at critical inquiry, it either would not be employed at all towards critical inquiry or would be employed so inappropriately that it would tend not to contribute to the process of reaching a reasoned judgment. But, if a person does not employ the critical thinking skills she has, she will never be a critical thinker. Similarly, if a person more often uses her skills with other aims in mind, or more often uses those skills inappropriately, as a result of improper motivation or some other intellectual vice, she should not be considered a critical thinker either, even if she manages to think critically on some occasions.

“Willingness to inquire” is the term I propose to refer to a person’s motivation to employ her intellectual skills appropriately, aiming towards reasoned judgments when reasoned judgments are called for (in short, when there is time to make a reasoned judgment, and when the stakes of the judgment are substantial). Such a person *values* going through that process aiming towards those ends, deeply *appreciates* that process in itself as well as for its consequences, and is *guided* by that process in her intellectual efforts. She values the power of critical inquiry and given the time to engage in reflection is willing

to seek the goal of a reasoned judgment through a careful examination of an issue.

Willingness to inquire is thus a complex character trait that drives the application of skills in efforts at critical inquiry. Nurturing that drive is important if we want our students to be better critical thinkers, not just better at a critical thinking skills test. If we nurture students who have certain abilities, proven by high test scores, but neglect their inclination to use those abilities and to use them in the right way, then we are failing to educate students according to the ideal of critical thinking. Instead, we want students graduated who will be able to think for themselves in efforts at critical inquiry, who will in addition be motivated to so think for themselves, and finally, who will in point of fact think for themselves when it is appropriate for them to do so in practice. Referring to this positive motivational component as “willingness” demystifies the intellectual character of the critical thinker in a way that the traditional label of the “spirit” of the critical thinker does not: it straightforwardly indicates that without the will to consistently and conscientiously think critically there is no way to be a critical thinker. The sorts of personal characteristics we want critical thinkers to have are those that appropriately “move” a person to think critically and act and believe on the basis of such thinking (cf. Siegel, 1988). The primary intellectual character trait that is constitutive of the ideal critical thinker is not an ephemeral and non-physical

“spirit”, being a place holder for all the virtues, but a volition motivated by a desire, a willingness to think critically motivated by the goal of reaching a reasoned judgment.

Willingness to inquire is thus the cardinal critical thinking virtue that ranges over the entire panoply of skills that are useful for critical inquiry; it is the motivating attitude that involves the commingling of different general attitudes and dispositions all of which combine to help to form an integral character of a person whom we should call a critical thinker, the absence of which would result in someone not being a critical thinker. In this sense, willingness to inquire is an amalgam of virtues *that is a virtue in itself*. However, it is more than the sum of its parts: it emerges as a robust virtue, as a firm aspect of a person’s character used across context-specific situations, the more that its constituent virtues are strengthened and ingrained. So a person who highly values inquiry and respects the probative power of reasons will tend to be more willing to inquire than someone who does not, and will thus move closer to approaching the educational ideal of the critical thinker.

There is empirical evidence for this view that sees a basic motivational component as being the fundamental virtue that contributes to producing the ends of skilled thinking, and that contributes to other virtues being manifested. That evidence is found in a recent study by Nieto & Valenzuela (2012), which



investigates the internal structure of critical thinking dispositions, in which they hypothesize a “motivational genesis of the dispositions of critical thinking” (p. 36), finding “that mental habits or attitudes come from the exercise of *motivated* skills” (p. 37, emphasis added). They go on to say that the “motivation to think critically continues to be an important factor in the deployment of critical thinking skills, even though certain mental habits or attitudes associated with performing them have become consolidated” (p. 36). For Nieto & Valenzuela, the fact that the proper motivation underpins skill acquisition has the pedagogical implication that we should work towards “increasing the value [students] assign to critical thinking” (p. 36.). Similar findings are elucidated in Nieto & Saiz, (2010). These empirical perspectives support my conceptual claim that the internal motivation to think critically is the primary virtue of the critical thinker, that the habit of skilful thinking aiming towards reasoned judgment is in part born of this virtue, and that pedagogical tactics that neglect to foster this virtue are suboptimal. Again, by referring to the motivational aspect of the character of the critical thinker, instead of the “spirit” of that person, the focal point of the character of the critical thinker is located transparently in that person’s values and volition.

Willingness to inquire, as a motivational force that is an amalgam of attitudes and values, can be seen to be the primary virtue by means of looking at examples. Someone who is highly skilled in debate, for instance, will most likely

have a technical mastery of rhetoric, public speaking, logic, and argument interpretation and evaluation; she is therefore a skilled thinker. Yet for all her skill in these areas, the ends she has in mind when she employs those skills are not to reach a reasoned judgment, but rather to win the debate. Winning a debate, even if it involves the marshalling of evidence and making the best case for some position, is more about defending a view from alternatives than it is about reaching a reasoned judgment offered with “full justification”(cf. Goodwin, 2013). In this sense debate-winning is a kind of (improperly) motivated thinking that tends towards something other than reasoned judgment. The critical thinking virtues that together constitute willingness to inquire will thus not necessarily come into play in debate: the debater, with her knowledge and skills, coupled with her desire to win, will be able to achieve her end of defending her pre-conceived notion without valuing inquiry, without appreciating the probative power of reason, and without being disposed to engage her skills aiming towards reasoned judgment. In the case of the single-minded debater, given her purposes, her values, and her approach to the exercise of her skills, those skills will not be employed in a way that will lead to a reasoned judgment, because her aim is directed towards something other than reasoned judgment. What she values more than inquiry is victory, so she lacks sufficient willingness to inquire: such a person is not thinking critically, however skilfully she performs some intellectual

task contributing to her ends of debate-winning. It is not some spirit that she lacks, but rather that she is straightforwardly unmotivated to engage in critical inquiry, and motivated instead to win the debate.

Imagine next a person who is a critical thinking student in a classroom where employing her skills aiming towards reasoned judgment is required of her: we can imagine her employing her skills aiming towards reasoned judgment *only* in that context. Such a student might be thinking critically in the classroom, but she is motivated to do so because she knows she must in order to earn a passing mark in the course. Outside of the classroom she might not value critical inquiry to such an extent that she is disposed to engage in it when the opportunity presents itself. Such a person is not a critical thinker, even if she thinks critically when she is compelled to: she does not possess or manifest sufficient willingness to inquire because she is not motivated in the right way to engage in critical inquiry.

Take as another example the skill of reconstructing an enthymematic argument: the complex technical task of supplying a plausible covering generalization to make explicit a usually implicit inferential link. To what end is the skill of argument reconstruction put? If the end is something other than the attempt to think carefully in an effort to reach a reasoned judgment, then a person is not thinking critically. A politician for instance might skilfully provide a

plausible missing inferential link left implicit in her opponent's argument.

However plausible the missing inferential link may be, imagine it is supplied with one aim in mind: to cast doubt on the opponent's argument. As such, willingness to inquire is absent, and the politician is not fulfilling the democratic ideal of aiming towards reasoned judgment in the service of democratic participation. She is not thinking critically, even if, in her skillful application of supplying a covering generalization, her aims of discrediting her opponent are well-served.

Examples could go on: the propagandist does not care about rational persuasion but about some other agenda; the indoctrinator does not care about convincing with full justification, but with brute intellectual force; the advertiser does not wish to present all the facts but only those that will help to sell the product or service. The willingness to inquire is the cardinal critical thinking virtue without which a person with skills will nevertheless fail to be the kind of person who will put them to appropriate use aiming towards reasoned judgments, and will fail to be someone we should call a critical thinker. A person who in isolated incidents nevertheless employs skills virtuously in critical inquiry will still not be a thoroughgoing critical thinker if she does not have the right motivation, however. Fair-mindedly, open-mindedly, and non-fallaciously employing skills, for instance, are important ways a skilled thinker might use her skills appropriately. But it is a willingness to engage in critical inquiry aiming

towards reasoned judgments that stands behind their manifestation in that process, so that a person is rightly considered a fair-minded, open-minded inquirer, or the kind of person who values non-fallacious reasoning, only if she consistently engages in intellectual activities manifesting these virtues. Just being open-minded in some intellectual task some of the time is not enough: if one is not willing to engage in inquiry, one cannot be considered an open-minded (or closed-minded) inquirer. This may be trivially true, but it shows that the motivation to seek reasoned judgment is not only the virtue that activates *skills* put to use in that process, but it is also the virtue that maintains other virtues that need to be put to use in that process in the person whom we properly call a good critical thinker.

Willingness to inquire is thus the integrating virtue that ranges over the other values, attitudes, and affective cognitive states that are manifested in efforts at critical thinking. It is the person with this willingness whom we appropriately call the critical thinker approaching the ideal: the person who consistently and aptly thinks critically. Without willingness to inquire, however, a person will tend not to put her skills to use in efforts at inquiry, so should not be considered a critical thinker approaching the ideal if that tendency is characteristic enough.

This stance is warranted even if, in isolated incidents, one can be open-minded or exhibit any of the other critical thinking virtues that are commonly

named by scholars without having sufficient willingness to inquire. For instance, one could be the most open-minded person yet not at all be interested in critical inquiry, only interested in being open for the sake of making friends, changing one's opinion to curry favour, admitting fallibility to be congenial. But then such an open-minded person could hardly be said to be a critical thinker, even though she would tend to evaluate arguments in the most open-minded of ways, taking seriously other perspectives, and admitting when some other perspective is stronger than her own. In addition, as the example above of the unwilling student shows, someone might seek reasoned judgment because of an external motivation, yet not be internally motivated to seek reasoned judgment. In such a case a person may be appropriately open-minded in the process of critical inquiry, yet not possess the proper motivation outside of the classroom to consistently engage in inquiry. This is another way a person could be open-minded on some occasion, yet fail to demonstrate proper willingness to inquire; as such, willingness to inquire is not always necessary for open-mindedness in isolated instances of critical inquiry. However, willingness to inquire is necessary for someone to approach the level of the ideal critical thinker: a person who is properly motivated to seek reasoned judgment, who seeks it, and who succeeds in reaching it consistently. Being the kind of person who consistently evaluates other perspectives open-mindedly with the ends of critical inquiry in mind necessarily

involves willingness to inquire, because a person without the motivation to be open-minded in critical inquiry is a person who does not value open-mindedness enough to make it a consistent part of their thinking.

Finally, even with the proper willingness to inquire, a person may consistently fail to be open-minded in some cases when it is appropriate for her to do so, as can be seen in the case of a person who sincerely desires to seek reasoned judgment on most occasions, but who characteristically rejects perspectives that differ from her own on a rare occasion, for no other reason than because they differ from her own. So willingness to inquire is not sufficient for the open-mindedness that is sometimes exhibited in instances of critical inquiry, but it is necessary for consistently produced open-minded inquiry that is required of a competent critical thinker, approaching the ideal. In this way willingness to inquire is required for someone to be a truly open-minded inquirer.

A person who consistently manifests willingness to inquire and open-mindedness as a full-blown part of her character will tend to engage in critical inquiry, but even such a person could consistently think critically (and consistently think open-mindedly) about some issues, on some occasions, while consistently being closed-minded about some other issues on some other occasions. But someone who is consistently open-minded on some issues and consistently closed-minded on others is not a critical thinker through and through.

I might consistently think in an open-minded way about what products to buy, but consistently think in a closed-minded way about what candidates to vote for. In such a case, a person would think critically about the former issue but not about the latter. If your political choice in a democratic process is seen as having greater stakes than what products to buy, then it is clear a person is not approaching the ideal critical thinker when thinking closed-mindedly about who to vote for. If in this way someone only rarely thinks open-mindedly about issues that they should be thinking open-mindedly about, then it would be hard to call that person a critical thinker at all, since she would certainly not be considered an open-minded person in general or on balance. A person who is open-minded only on some occasions but not on most occasions is not really an open-minded person, even if she thinks open-mindedly on occasion. Such a person is thus not a critical thinker.

Willingness to inquire is thus more central than other virtues, ranging over the appropriate application of skills and emerging through the other virtues that are used to reach the ends of critical inquiry in the person who is a critical thinker. The characteristic of open-mindedness that is required for a person to be a critical thinker, however, need not be present in a person who on some occasions, but not habitually, employs a skill in an open-minded way. As an example, a person could be open-mindedly entertaining an alternative perspective on some particular occasion, yet not be doing so in an effort to reach a reasoned judgment, or tend



not to do so on most other occasions. Such a person would not be considered a critical thinker, even if on some occasions she engaged in open-minded critical inquiry.

As another example of how willingness to inquire is the central motivating force in people who are competent critical thinkers, covering other virtues, take the virtue of valuing non-fallacious reasoning. Valuing non-fallacious reasoning in critical inquiry means not only being knowledgeable about the fallacies, but it also means being willing to apply those standards metacognitively to one's own reasoning, being sensitive to bias in oneself, and correcting for it. A person who values non-fallacious reasoning only to the extent that she consistently applies those standards to *other* people's reasoning is no kind of quality critical thinker, because such a person is not really committed to seeking reasoned judgments in her own thinking. Without the motivation to be attentive to one's own reasoning, monitoring one's biases and striving to not fall prey to certain common mistakes in one's efforts to reach reasoned judgment, a person cannot be said to really value fallacious-free reasoning (cf. Maynes, 2013). Such a person should not be considered a critical thinker, again, because the very possibility that a person identifies and corrects for fallacious reasoning in her own thinking (in the process of inquiry) is predicated on the idea that such a person has a basic motivation to seek reasoned judgments in the first place: the cognitive ends she seeks are the

guiding hands that indicate the virtues that are required to achieve them. A person might value non-fallacious reasoning because she sees it as being instrumental in achieving the end she seeks, but if that end is not reasoned judgment, the valuing of non-fallacious reasoning is not properly a critical thinking virtue. The motivation a person has to reach reasoned judgment gives rise to the further motivation to monitor oneself in one's own thinking, avoiding fallacious reasoning because of the obstacle fallacies pose to reaching a reasoned judgment. So willingness to inquire stands behind the consistent valuing of fallacious-free reasoning in efforts at critical inquiry.

Finally, it seems clear that a person can be intellectually virtuous without being skilled. For all of someone's good intentions, for all her appreciation of inquiry and valuing of its process and products, for all the desire she has to accept a degree of fallibility and a curiosity to understand along with all the other affective states that contribute to the covering virtue of willingness to inquire, if she does not also possess certain knowledge and skills, critical inquiry will be impossible. In this way not only can a person be skilled but lack the proper virtues that lead her to employ those skills, but a person could be virtuous but so unskilled that the ends of critical thinking could not be aptly approached.

For instance, imagine a person who is seeking reasoned judgment and who so deeply appreciates that process in itself that she admires others who seek

reasoned judgment and tries herself to engage in critical inquiry. If this person does not know what a premise is, does not distinguish valid forms of reasoning from invalid ones, does not know the criteria that make for a proper evaluation of an authority, cannot identify plausible implicit covering generalizations, and lacks other knowledge and skills as well (such as an awareness of and ability to correct for psychological error tendencies) then her willingness to inquire will be of no avail to her in her effort to reach reasoned judgment, since the abilities that must be put to use in that process are missing in her.

As another example, departing from talk of skilled *thinking*, I might be very committed to practicing and performing the saxophone, possessing confidence and courage, but if I have no knowledge of scales, no high-quality emburance or fingerings technique, and if I furthermore do not have such a well-trained ear that I can hear when my intonation is flat or sharp, then my commitment to playing will not serve me at all: that motivation to play must drive a *learning* of skills so that I may put my good intentions to proper use in musical performance.

Willingness to inquire is thus the fundamental motivating critical thinking virtue, emerging out of a cluster of attitudes, values and commitments, necessary to consistently and aptly employ any skill in the service of critical inquiry, necessary for the other virtues to be manifested appropriately in thinking aiming

towards reasoned judgment, and therefore necessary for a person to have if she is to legitimately be called a critical thinker approaching the ideal.

## 4 LINKING CRITICAL THINKING SKILLS AND VIRTUES

### 4.1 RECAPITULATION

In this chapter I offer an account of how critical thinking skills are connected to critical thinking virtues. I provide an exposition of a few of the most important skills in particular, and how they connect to certain important virtues in the ideal critical thinker. I conclude by illustrating how various different skills, across different conceptions, share commonalities, and thus indicate common virtues compatible with each conception. Regardless of one's skills-conception of critical thinking, the critical thinking virtues are tied to those skills found in common over different conceptions, conceptually and programmatically. Before engaging in the substantive aspects of this chapter, however, where I show the connection between skills and virtues, I offer the following recapitulation of the road travelled thus far.

Critical thinking, according to my adoption of Bailin and Battersby's definition, is the interpretive and evaluative process of critical inquiry: the careful examination of an issue in order to reach a reasoned judgment. A person is competent in this process only if she is knowledgeable about the issue at hand, and has learned the criteria that must be satisfied for a reasoned judgment

regarding that issue to be reached. I have adopted this definition, arguing that critical thinking skills are those learned technical masteries that contribute to critical inquiry and are in part productive of reasoned judgment. So we add that a person must not only be knowledgeable, but also skilled in applying that knowledge. But to be skilled in the technical abilities that are required to think critically, and to have knowledge of those processes and of the issue at hand, is not enough to make a person a thoroughgoing critical thinker approaching the ideal. A thoroughgoing critical thinker has critical thinking skills, knowledge of the standards of inquiry and of the details of the issue at hand, and in addition, critical thinking virtues: those firm, cultivated excellences of a person's intellectual character that animate her critical thinking skills, making her the kind of person who is a critical inquirer, approaching the educational ideal.

The central critical thinking virtue is a motivating virtue that I call willingness to inquire. It is a virtue that includes an appreciation for inquiry and reasoning, a curiosity to investigate the unknown, and a sense of fallibility, among other values, motivations, and affective aspects that are constitutive of a person's general intellectual character, describing a person who has a genuine and firmly established desire to engage in critical inquiry. Willingness to inquire is indicative of a person's overall disposition to engage in critical inquiry, and includes the deep tendency to act and believe on the basis of critical inquiry. Willingness to

inquire is thus a wellspring motivational virtue that is an amalgam of different personal qualities, all of which contribute to someone being the kind of person who consistently and aptly employs her skills and knowledge in efforts at critical inquiry.

This position reflects an overall consensus among critical thinking theorists that the wellspring drive to engage in critical thinking is a necessary component of a person being a critical thinker. Such theorists include Bailin and Battersby (2010), who claim that critical thinking involves “a commitment to base beliefs and actions on inquiry” (p. 197), as well as Bailin and Battersby (2007), who argue for the central importance of “reason appreciation” in efforts at critical thinking. Like-minded theorists also include Siegel (1988), who argues for the “critical spirit” of the critical thinker in his “reasons conception” of critical thinking, part of which includes a motivational component whereby a critical thinker is “moved” to seek reasons and act and believe on the basis of them; Ennis (1996), who acknowledges that the inclination to think critically is “a necessary component of, perhaps the essence of, a [critical thinking] disposition” (p. 166); Facione (1990), whose consensus statement on critical thinking recognizes that if someone is not disposed to use her critical thinking skills then she cannot properly be called a critical thinker, characterizing the disposition to think critically as the “consistent internal motivation to use [critical thinking] skills to decide what to

believe and what to do” (Facione, 2000, p. 73); Norris (1992), who argues that if a person does not spontaneously use an ability then she might not have the disposition to do so, but that critical thinkers should have this disposition; Halpern (1998), whose four-part model of critical thinking includes “a dispositional or attitudinal component” (p. 451) that she summarizes as “an attitude or disposition to recognize when a skill is needed and the willingness to apply it” (p. 452); and even Missimer (1990), who ironically argues *against* any “character view” of critical thinking, but who admits that there is some minimum level of “enthusiasm” (p. 149) that leads to the habit of thinking critically. Finally, this formulation is also consistent with recent attempts by argumentation theorists such as Cohen (2005, 2007) and Aberdein (2010) to examine a virtue theoretic approach to argumentation, inspired in part by virtue epistemologists such as Zagzebski (1996). Both Cohen and Aberdein indicate that the “willingness to engage in serious argumentation” is an important argumentative virtue (Cohen 2005, p. 64; Aberdein, 2010, p. 175).

To some extent, then, my thesis is a psychological hypothesis, in that it posits a robust motivational basis for skilled thinking that counts as critical thinking. Measuring for such a basis is complicated, but in one popular testing instrument, the California Critical Thinking Dispositions Inventory (CCTDI), this is accomplished by means of Likert-style self-reporting: a subject is invited to



agree or to disagree with a series of statements expressing beliefs, values, and intentions. When researchers have used this instrument, such a motivational basis to think critically has not only been shown to be strongly present in thinkers who are beginning to learn the skills of critical inquiry, but in addition has been shown to be maintained while other dispositions have been strengthened with the learning of skills (Nieto and Valenzuela, 2012). In addition, Facione and Facione (1997) have shown in their important empirical study using the CCTDI that an amalgam of intellectual habits of mind contribute to moving nurses to employ their skills in the process of thinking critically in the context of nursing care. While Facione (2000) stresses that “it may be unwise to advance a theory that explicitly or implicitly pairs one and only one [critical thinking] skill in a positive correlation with one and only one [critical thinking] dispositional factor” (p. 78), my approach avoids this mistake, because I do not claim a correlation between one and only one skill, and one and only one disposition. On the contrary, I maintain that willingness to inquire is only the central motivating virtue, an amalgam of different virtues necessary though not sufficient for a person to be a thoroughgoing critical thinker approaching the ideal. In this chapter, when I do link specific virtues with specific skills, I do not maintain that such skills indicate *only* those virtues I link them to, but that from a programmatic standpoint, some virtues stand out as more plausibly affiliated with some skills than others, based

upon reflection as to the personal character traits that would tend to confound critical inquiry. An array of critical thinking virtues to be fostered in the classroom can thus be suggested by envisioning how people might *fail* to be the kind of people who are critical inquirers approaching the ideal. These are the virtues we should explicitly seek to foster in our students. In addition, my thesis here regarding critical thinking skills and virtues does not posit a “powerful [and] positive automatic correlation” (p. 81), but on the contrary is a conceptual claim with curricular implications: in our efforts to teach students how to be better critical thinkers outside of the classroom, we should help them to become not only skilled thinkers, but particular kinds of people who value certain ways of thinking and approaching judgments (cf. Bailin and Battersby, 2007; Sears and Parsons, 1991).

But which ways, and which approaches? Since thinkers can be skilled without employing those skills appropriately, and since being virtuous in one’s thinking and in one’s life is anything but “automatic” for most people, we should therefore seek to foster in students the related virtues that animate the skills necessary for consistently and competently making reasoned judgments when it is appropriate to do so. This is important because it implies that critical thinking instruction should seek not only to teach important thinking skills, but also to

nurture the internal motivation to think critically, along with other virtuous intellectual character traits as well.

Claiming willingness to inquire is the baseline virtue does not necessarily mean we must prioritize willingness to inquire *over* other virtues in our instructional efforts. Instead, an approach to critical thinking instruction that makes explicit the virtues of critical thinkers and how they are linked to skills can stress willingness to inquire as the baseline virtue, a first among equals that contributes to someone being the kind of person who is a critical thinker. In the final chapters of this thesis, I will explore this idea further, suggesting ways that critical thinking instruction can incorporate teaching the critical thinking virtues without relegating them to a secondary place behind willingness to inquire. In the remainder of this chapter, however, I explore how a few of the principal skills of critical thinking are linked to and point towards the most important virtues that contribute to a person being a critical thinker. Then I elucidate how Glaser's list of skills can be linked to virtues, and how the various common conceptions of critical thinking share a focus on skills which can similarly be linked to virtues.

#### 4.2 PRINCIPAL CRITICAL THINKING SKILLS LINKED TO VIRTUES

What are those other virtues, in addition to the central motivating virtue that is willingness to inquire, which are in part productive of reasoned judgment in a process of critical inquiry, and which are constitutive of the critical thinker? They are those intellectual character traits that include the motivation to seek reasoned judgment, the valuing of dialectical partners and of accuracy and of truth, the disposition to be metacognitively aware of one's own biases and to attempt to correct for them, and other habits of mind such as intellectual honesty, which cohere in a person, guiding her to be a thinker who consistently and aptly engages in critical inquiry. Because the virtues that make up a person's character interpenetrate one another, and cannot ultimately be compartmentalized in a neat taxonomy, there will always be some overlap between virtues. For instance, when someone values truth and accuracy, this might easily contribute to a person's motivation to seek a reasoned judgment with the hopes of making her judgment more accurate or more likely to be true. Or if a person is in the habit of carefully checking sources, this clearly has some relationship to that person's deep disposition to be aware of the threat of confirmation bias in herself, and to correct for it, in part by being extra diligent that sources which confirm her judgments are appropriately scrutinized, and perhaps setting up environmental cues which

“nudge” her to the right action in the right circumstances, as described in Kenyon and Beaulac (2013). In this way the critical thinking virtues resemble a web: willingness to inquire representing the center of the web, the wellspring virtue that the other virtues connect to and emanate from, the totality of which represents the coherent intellectual character of the critical thinker.

We can discover the threads of that web, the individual virtues that connect to form a true critical thinker’s character, in a more systematic way than just naming the sorts of character traits we want to see in educated people who deserve to be called critical thinkers. Mere naming is the major shortcoming of every theoretical construct that acknowledges the importance of critical thinking character, or as Sears and Parsons (1991) call it, the “ethic” of critical thinking. We can discover the panoply of critical thinking virtues in the same way we discovered the primary motivational virtue of willingness to inquire. In that case, we noted that without the proper intellectual attitude that motivates one to seek reasoned judgment, one will never be the kind of person we hope to educate when we teach critical thinking: a person who consistently and aptly uses her skills to engage in critical inquiry about what to do or believe. A person who has a deep tendency to seek to confirm her own pre-reflective beliefs, for instance, will be no kind of critical thinker. As such, the deep-seated motive to engage in critical inquiry as opposed to thinking motivated by and directed towards other ends is

essential for a critical thinker. Similarly, by noticing how some specific skills might tend to *fail* to be put to appropriate use in the process of critical inquiry, and how certain negative character traits might contribute in specific instances to thinking that tends to fail to positively contribute to the process of critical inquiry, we might see more specifically how some more positive intellectual character traits could contribute to someone being a person whom we would call an excellent critical thinker, putting her skills to use in approaching the ideal. By reflecting on how skilled thinking might consistently fail because of some deep-seated intellectual tendencies, we have a basis by which to elucidate those characteristics that are important for a person to have if she is to rightly be called a critical thinker.

The debater, as we saw in the last chapter, looks to exercise her skills for some reason other than to reach a reasoned judgment. She is skilled but lacks sufficient willingness to inquire, being committed instead to the goods of debate, even if she uses evidence and attempts justification with those eristic ends in mind. As another example, the student in the classroom who never thinks critically outside of it values her intellectual skills in efforts at critical inquiry but values them for the wrong reasons, only instrumentally: she is merely concerned to get a good mark in her class, and is not disposed to put her skills to use in critical inquiry when no one is marking, but when critical inquiry would still be

warranted. Such a person lacks sufficient willingness to inquire in that she does not appreciate and value inquiry enough to use her inquiry skills in appropriate contexts. As a final example, the attorney defending her client is interested in acquittal, not reasoned judgment: her commitment and purpose in her skilled thinking are motivated by something other than inquiry. Such a list could go on: for any critical thinking skill that might otherwise be employed towards the ends of critical inquiry, without a characteristic willingness to employ that skill in efforts at critical inquiry, the skill is wasted for those ends.

Take now the case of a person who is a skilled thinker and who *does* aim towards reasoned judgment, who does value inquiry, and who does appreciate the power of certain criteria to guide her reasoned judgment-making. By hypothesis, let us grant that such a person is characteristically willing to inquire. However, on some few occasions she still might fail to skilfully employ her abilities to the ends of inquiry, perhaps because of her excessive identification with her beliefs. In the case of such a person as this, who might normally be skilled at interpreting arguments, if we were to ask her whether she wished to reach a reasoned judgment regarding some particular issue, suppose she genuinely answers yes. Nevertheless, in certain rare conditions where she is confronted with an argument that challenges deep-seated beliefs that she self-identifies with, she erroneously (and sub-optimally for the purposes of critical inquiry) interprets claims as an

attack on her personally, mischaracterizing opposing views and their supporting reasons. This would constitute an example of a skilled thinker with the right motives, who has the right ends in mind, but who nevertheless does not employ her skills well enough in certain circumstances that they tend to lead to a careful process of inquiry. It is not sufficient willingness to inquire that she lacks, since in our example her “heart is in the right place”, but it is rather an appropriate separation of her sense of personal worth from some particularly deep-seated belief she holds. If she consistently fails at critical inquiry in this manner with this issue, it seems no mere accident but a problem of character: the virtue she lacks is a sense of objectivity, an admission of fallibility, or the proper humility that leads her to not distort an alternative view when it runs contrary to her own deep-seated one. If such a person unreflectively self-identifies with her beliefs so often that such sub-optimal responses are commonplace for her, then it is clear she has the sort of biased character that keeps her from appropriately employing her skills (in this case, skills of argument interpretation) in order to reach a reasoned judgment. Despite her willingness to inquire, despite the fact that on many other occasions she might *not* self-identify with her beliefs, and despite her skills, this person is not a thoroughgoing critical thinker.

As another example, take again the skill of argument interpretation. As seen above, without a due sense of objectivity along with a sense of humility and



recognition of fallibility, an interpretation of an argument, even undertaken with the end of reasoned judgment in mind, will not be enough to make for skilled argument interpretation in the service of critical inquiry. If such thinking is characteristic of a person, she will not be a critical thinker. So a person who does not think objectively, is not humble, and does not acknowledge her fallibility, will tend to fail to think critically. But even *with* an objective stance, and an attendant humility and sense of fallibility, if a person does not pay attention to details, does not take care in how she restates someone else's language, and is not just in how she attributes inferential claims, then the ends of critical inquiry will also tend not to be reached when she interprets an argument. A person who consistently thought in a way that was not attentive to detail, careful in paraphrasing, and just in attributing inferences, would not be a critical thinker, despite her other skills, despite her motivation, and despite whatever other intellectual virtues she possessed. A critical thinking virtue that is related to a sense of objectivity, necessary to be the kind of person who consistently and competently employs the skill of argument interpretation in a process of critical inquiry, is therefore fair-mindedness: the attitude and disposition to determine accurately whether that which is under consideration is an argument, and if so, what the conclusion and supporting premises are. The reason why fair-mindedness is necessary for a person to tend to appropriately employ the skill of argument interpretation in

critical inquiry is this: if what is under consideration is unfairly interpreted, then this stands in the way of the ends of critical inquiry, tending to prohibit or at least make more difficult a proper interpretation (and later, evaluation) from being carried out and a reasoned judgment from being reached. So to be able to consistently perform the skill of argument interpretation in the service of critical inquiry, one needs more than sheer technical mastery at picking out conclusions and premises. In addition, one needs to identify and interpret arguments in a virtuous way: with a due sense of objectivity, and with fair-mindedness, in other words, *attentively* considering the context, *carefully* paraphrasing language, and *fairly* interpreting what ostensibly provides support for the conclusion.

One might be skilled at argument interpretation without being fair-minded, but then, unless someone is just being negligent, one will usually have some other aim in mind besides reasoned judgment when one uses that skill unfairly. In any case, a person who consistently fails to interpret arguments in a fair-minded way could not ever be said to be a true critical thinker. For instance, a politician who routinely interprets her opponent's reasoning in an unfair way might be very skilled at argument interpretation, but because her purpose is to sway public opinion away from her opponent, her skill at argument interpretation need not be employed with due attention, care, and fairness, even though it still may be used in an effective way to achieve her ends. Such a politician is not a critical thinker,

and her thinking can in addition be seen as a failure in willingness to inquire, since her purpose is to achieve something other than reasoned judgment. But take someone who has sufficient willingness to inquire, has a due sense of objectivity, and undertakes to interpret an argument: if this person paraphrases the language she is considering in such a rushed way that she builds in ambiguity, then it seems clear that the due *care* that is required for the skilful application of argument interpretation in the service of critical inquiry is missing, and a person will not be thinking critically, even though her failure is not malicious. If a person tends to rush paraphrases so regularly that she is often not careful in restating another person's arguments, then such a person clearly does not have the sort of intellectual character required if she is to be considered a critical thinker. While on occasion she might be careful enough that her interpretations are fairly stated, without the intellectual character that deeply disposes a person to carefully approach the interpretation of information or arguments in the wide variety of discourse confronted in ordinary life, a person will tend to fail to think carefully and fairly, thus consistently failing to think critically, and failing to be a critical thinker.

The same can be said for other critical thinking skills: associated critical thinking virtues are suggested when one considers how these skills are put to use in the service of critical inquiry, and how a person with certain character traits

might not use those skills appropriately, or how such absence of virtue might negatively affect their application in the pursuit of reasoned judgment. For instance, to consistently and appropriately *evaluate* an argument as part of a process of critical inquiry requires of someone much the same virtues as to interpret an argument correctly, since evaluation of an argument presupposes the interpretation of it. But in addition to having a due sense of objectivity, and being fair-minded in interpretation, one must also be open-minded: ready to entertain the argument on its merits without deciding beforehand whether it is cogent or not, humble enough that one is ready to revise one's view should the argument prove to be stronger than a contrary view one holds, and ready to admit one's own fallibility. Open-mindedness thus involves avoiding prejudicial thinking and being prepared to come to a reasoned judgment that does not accord with whatever current view one has on the issue in question. To characteristically behave in a contradictory way would be to preclude oneself from being a critical thinker. The sense of fallibility needed for good argument interpretation also extends to argument evaluation, because even after a reasoned judgment is reached in a way that is non-prejudicial, and even if one changes one's view as a result of some alternative reasoning, to acknowledge fallibility is to acknowledge that even *that* reasoned judgment could be further revised in light of more evidence or other arguments that might come to light. In this way an attitude that

acknowledges one's own fallibility contributes to reasoned judgments being reached *tentatively*, with the understanding that inquiry could be opened again should new and relevant arguments or evidence emerge that bear on the issue. A person who inquires into issues but who uncompromisingly settles on a judgment without ever considering the issue again in light of potentially new evidence, is no kind of critical thinker. Without this attitude that orients critical inquiry as an ongoing process, in particular instances where inquiry is warranted, a person will never be a thoroughgoing critical thinker. In this way open-mindedness is a global virtue that contributes to willingness to inquire by motivating a person to be open to alternative perspectives in general, and it is also a local virtue that contributes directly to specific skills being employed in efforts at critical inquiry.

One can evaluate arguments skilfully without being open-minded, but then one will usually have other aims when using that skill. So a closed-minded evaluation of arguments will tend to negatively impact critical inquiry, preventing reasoned judgment from being reached. A defence attorney, for instance, might evaluate the prosecution's arguments with great skill, but since the end in view is to acquit her client, an open-minded approach to the opposing arguments is not required for her to be effective in her aims. In this case a deficiency in willingness to inquire would make open-mindedness unnecessary for the attorney. However, for someone who has the other intellectual virtues of a critical thinker, open-

mindedness is necessary for critical inquiry, because reasoned judgment frequently comes into conflict with our pet notions and prejudicial thinking. Confronting those biases in a self-conscious way is thus an important part of being a critical thinker, because many biases tend to hamper skilled thinking in the service of reaching reasoned judgment. A person who is an excellent critical thinker would thus be a person who characteristically thinks open-mindedly when she evaluates arguments.

But this is not to say that every instance of skilled thinking in the service of critical inquiry requires someone to be open-minded in the application of that skill. Being able to recognize an inference in the course of everyday reasoning does not involve an openness to changing one's mind, a sense of fallibility, or a self-conscious monitoring of one's biases and prejudices, though it is a cognitive skill that requires someone to be able to "see" that some claim was inferred from another. So it seems clear that there are some skills that one can have and employ appropriately in critical inquiry without having to be open-minded in their particular application. Still, open-mindedness is an important virtue that is related to some skills, like argument evaluation, leading a person to employ that skill appropriately in efforts at critical inquiry.

Other critical thinking skills that are linked to associated virtues of a critical thinker are skills of inference. Making good inferences and avoiding bad

ones, as well as being able to recognize good and bad inferences that are made by others in various contexts, are key critical thinking skills required to reach a reasoned judgment. A fallacious inference, in contrast, will be counterproductive in critical inquiry, where reasoned judgment is the end. People's tendency to make fallacious inferences thus works against the process of critical inquiry. Any intellectual character trait that contributes to fallacious inferences, then, will be a character trait that tends to prevent someone from being a critical thinker, because a person who consistently makes fallacious inferences is the kind of person who will tend to consistently fail to reach a reasoned judgment. A person with such traits would clearly not be considered a critical thinker. While it is true that consistently making fallacious inferences might be due to a lack of knowledge, or of skill in applying that knowledge, it could also be due to an approach to reasoning that does not recognize the value of non-fallacious inferences to making a reasoned judgment. *Valuing* thinking that is non-fallacious, being disposed to examine one's own reasoning for fallacious moves, and being willing to revise one's arguments based on a candid evaluation of their potential fallaciousness, are therefore important critical thinking virtues that enable a person who is skilled at inference-making and identifying to put those skills to appropriate use in making reasoned judgments.

#### 4.3 COMMONALITIES OF SKILL AND VIRTUE

So far I have inquired into three fundamental critical thinking skills, querying what sort of intellectual character a person will have who neglects to use, or otherwise inappropriately uses, those skills. Such people have the kinds of intellectual character that tends to confound critical thinking. A person with such confounding critical thinking character traits as closed-mindedness and prejudice, unfairness, and carelessness will not be a critical thinker approaching the ideal. Envisioning how people might fail to be the sorts of people who use their skills in the service of critical inquiry suggests the characteristics they should have to succeed in using their skills for the purpose of reaching reasoned judgments. These skills, the associated confounding critical thinking character traits, and their associated critical thinking virtues, are summarized in Table 2, below:

Table 2: <i>Critical thinking skills &amp; virtues, linked by confounding character traits</i>		
<b>Critical Thinking Skills</b>	<b>Confounding Critical Thinking Character Traits</b>	<b>Critical Thinking Virtues</b>
Interpreting Arguments	Excessive identification with beliefs/lack of objectivity	Objectivity; Humility; Fallibility; fair-mindedness
Evaluating Arguments	Carelessness; closed-mindedness	Carefulness; open-mindedness
Making/recognizing inferences	Disvaluing non-fallacious reasoning; lack of intellectual self-awareness	Valuing non-fallacious reasoning; Metacognitive self-monitoring of biases



More examples illustrate how wide a variety of critical thinking skills there are, and how the person who is justifiably regarded as a critical thinker not only possesses these skills, but is the kind of person who uses them appropriately for critical inquiry. Most conceptions of critical thinking stress skills, and in the remaining part of this chapter I seek to tie the skills from various conceptions together, showing how they all indicate the kind of person the critical thinker should be.

For instance, take the list of skills provided by Glaser (1941/1972), which includes the “ability to recognize problems, to find workable means for meeting those problems, to gather and marshal pertinent information, to recognize unstated assumptions and values, to comprehend and use language with accuracy, clarity, and discrimination, [and] to interpret data” in addition to the informal logic skills mentioned above of interpretation and evaluation of arguments. Each one of these abilities Glaser names is a skill that a person might frequently use in efforts to think critically. But each skill also requires a person to have the right motives and other virtues when employing it, if she is to be the kind of person who consistently uses those skills to produce reasoned judgment through critical inquiry. At the least, a person who had certain confounding character traits such as an aversion to solving problems, or carelessness in the use of language, would tend not to employ the kinds of abilities Glaser claims are necessary for thinking

critically. Glaser recognizes this when he refers to the “spirit of inquiry” (Glaser, p. 10), but he does not elaborate on how the spirit of inquiry is connected to the skills of inquiry. Still, it is not implausible, given Glaser’s commitment to critical thinking character in his conception, that his skills are connected to virtues. Glaser’s list of skills could be analogously applied to the skills of Facione and Ennis, and also those that Bailin and Battersby introduce in their textbook. In this way I will show that, regardless of one’s definition of critical thinking, the skills that contribute to critical thinking provide an indication of the kinds of confounding traits a critical thinker will not manifest, and the kinds of critical thinking virtues a critical thinker should have.

Glaser’s list begins with the ability to recognize problems. When we ask what it means to be skilled in problem recognition, in the service of critical inquiry, it is not enough to see things-that-are-problematic only from a strictly egocentric perspective. “Problems” exist across a wide range of contexts and points-of-view. So a certain degree of *empathy* and *creativity* is required to even comprehend something that is problematic from a different perspective than one’s own, if one’s aim is to reach a reasoned judgment. I might have an ability to articulate a focused question that addresses a specific problem, issue, or point of clarification, but if I do not recognize certain situations as being problematic, controversial, or in need of clarification because of a lack of sensitivity to what

makes it problematic or worthy of inquiry for someone else, or from a lack of imagination as to what might make it problematic or an issue or unclear in the abstract, then my ability will only be used in those narrow cases when a problem or issue or formulation of an idea corresponds to my egocentric perspective. Such a person is clearly not someone we would want to call a critical thinker, because such a person would characteristically not be seeking and reaching reasoned judgments regarding the range of problems, issues, or concepts she could be addressing (cf. Paul, 1981, who lists socio- and cultural-centrism among others, as pernicious confounders of critical thinking).

The next skill Glaser takes to be important to thinking critically is the skill of finding “workable means for meeting those problems”. As such, what is implied by Glaser is a practicality that not only recognizes problems that need to be addressed, but find solutions to those problems, or at least ways to go about finding solutions to them. These major skills, and others that Glaser lists, should be compared to other skills that other theorists list to see what similarities hold.

In Table 2, below, I illustrate a mixture of Ennis’, Facione’s, and Glaser’s skills: the same skills I articulated in Chapter 2 to illustrate the variety of skills that theorists conceive as discrete abilities a person can learn to contribute to critical thinking. The table below represents these skills, along with associated virtues that a person who characteristically uses those skills should have. This

table is to be understood to represent a programmatic understanding of the relationship between skills and virtues: that given our attempt to instruct for a skill such as the one listed (or such as one might find in any mainstream conception of critical thinking), there is a corresponding character trait that a person who characteristically uses that skill in critical thinking can be described as having. Similarly, given any skill, there is a corresponding character trait that a person might possess which would tend to negatively affect its use. To be skilled and yet to have some confounding intellectual character that interferes with the appropriate use of the skill in question is not to be the kind of person who is a critical thinker. The process of discovery for a programmatic introduction to the habits of mind that are required for a critical thinker goes from skills to associated character traits that would tend to undercut such abilities. For any skill this will be a long list of negative attributes that would tend to prevent a skilled activity from being undertaken and used appropriately for some end. Compare to Hursthouse (2013), who correctly remarks that the list of vices or flaws are so much more numerous and readily describable than the virtues or excellences. This is one programmatic reason to begin with skills and to query the failures of character that might contribute to a failure to apply a skill appropriately. It is easier to generate such failures in part because our language is more readily up to the task, and perhaps because the way we fail to reason well has been shown to exhibit

certain patterns, such as the more common formal and informal fallacies of logic and the cognitive error tendencies that psychologists have documented. From an articulation of such confounding character traits, it is easier to reflect on the privation of such traits, or the opposing positive aspects of a person's character that would help to contribute to a person using a skill in the appropriate manner for critical thinking.

Staying with the skill of problem recognition, or what Bailin and Battersby would call "issue identification", other virtues besides empathy are indicated when we envision the kind of person who would consistently put this skill to use in the process of critical inquiry. These virtues suggest themselves when one queries the criteria that make for a well-stated issue according to Bailin and Battersby: Issues must first be formulated as a question; they must be controversial; they must be stated in neutral language; they must be precisely worded; and they must be focused. Why these criteria? Bailin and Battersby leave it implicit in their textbook, but given the end of reasoned judgment, an inquiry conducted into an issue that failed any of these criteria would not be an inquiry conducted into a sound issue. Such an inquiry would tend to be failed critical inquiry, which would not yield a reasoned judgment on a proper subject at issue, because either the issue would be unclear, or the problematic nature of the subject would be misstated, or the problem would be improperly slanted towards one

judgment or another. To see the other virtues connected to the skill of problem recognition, or issue identification, as indicated by Bailin and Battersby's criteria for a well-stated issue, take the criterion that says that a well-stated issue must be stated in neutral language. Even if a question meets the other criteria for a well-stated issue, stating it non-neutrally will not serve the ends of a reasoned judgment, because the non-neutrally stated question might easily tip the balance of considerations in favour of one judgment or another, thus making it likely to be not well-reasoned.

What virtues are therefore indicated by the criterion of neutrally stated issues, in a person who has the right kind of intellectual character to be a critical thinker? Again, the virtues are suggested by thinking of character traits that would tend to work against such a skill being appropriately employed. Clearly then, malicious thinking (indicating a malicious intellectual character) that overtly attempted to state an issue non-neutrally would be ruled out, as would conscious and unconscious biased framing of an issue. If a person regularly as part of her character misstated issues in such ways, we would be justified in calling her a prejudiced thinker, and she would clearly be operating in a way that would tend to confound critical thinking. Such a confounding character trait as being a prejudiced thinker indicates one virtue we should seek to instil in our students when we teach the skill of issue-statement, which includes the idea of neutrality:

the virtue of impartiality, framing questions at issue in such a way that neither one judgment nor another is favoured in that formulation. Such impartiality *in issue statement* does not entail an impartiality of *judgment*, should the process of critical inquiry lead to favouring one judgment over another. But it does involve a due sense of objectivity and non-prejudicial thinking in setting up an issue for examination, which we see now ranges over an entire panoply of skills and virtues.

So the virtue of interpretive neutrality, especially in issue-forming, is important to be the kind of person who so consistently engages in critical inquiry; we would rightly say that such a person is a thoroughgoing critical thinker. The following table summarizes the points discussed so far. It has been constructed by compiling a selected list of skills and abilities from three major theorists' work. I have organized the table to indicate that many of the skills theorists name share a common skill that can describe all of them. Each "common skill" is confounded if a person also possesses certain character traits that would tend to work against that skill being employed in critical inquiry. In contrast, the character traits that stand opposed to these confounding traits are those virtues that would tend to enable a person to go through a process of critical inquiry. These virtues, which attach to the common skill found in each theory, I call the "common virtues".

Table 3 <i>Illustrating the various common skills, and their common associated virtues</i>				
<b>Common Skills</b>	<b>Selected Problem Solving Skills from Glaser's List</b>	<b>Selected skills and sub-skills from Facione's Consensus Statement</b>	<b>Selected Abilities from Ennis' List</b>	<b>Common Virtues</b>
Identification	Ability to recognize problems	(Analysis): Identifying and analyzing arguments	Formulating what is at issue	Sensitivity
Evaluating and judgment rendering.	Ability to render accurate judgments about specific things and qualities in everyday life.	(Evaluation): Assessing claims Assessing arguments.	Judge deductions and inductions.	Fair-mindedness.
Recognizing Alternatives	Ability to find workable <i>means</i> for meeting problems (emphasis added).	(Inference): Conjecturing alternatives.	Suppositional thinking--a kind of metacognition --Consider and reason from premises, reasons, assumptions, positions, and other propositions with which they disagree or about	Open-mindedness.



			which they are in doubt, without letting the disagreement or doubt interfere with their thinking.	
Inference.	To draw warranted conclusions and generalizations.	(Inference): Drawing conclusions.	identifying and making inferences.	Carefulness.
Recognizing unstated assumptions.	to recognize unstated assumptions and values.	(Analysis): Additional unexpressed elements of reasoning, such as intermediary conclusions, unstated assumptions or presuppositions	Identify unstated assumptions.	Imaginative-ness.
Clarity of interpretation	To comprehend and use language with accuracy, clarity, and discrimination.	Interpretation: Categorization and clarifying meaning.	Clarifying meanings of terms and statements.	Perspicacity.

Meta-cognition.	To reconstruct one's patterns of beliefs on the basis of wider experience.	Self-regulation. Self-examination. Self correction.	To integrate other abilities and dispositions in making/defending a position.	Self-awareness.
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As this table suggests, regardless of one's definition of critical thinking, or one's list of skills, the person who consistently and competently uses her skills has associated virtues: without being the right kind of person who seeks reasoned judgment and uses her skills appropriately, one will not be a critical thinker approaching the educational ideal. In order to decide which virtues to explicitly call attention to as an instructor, given their wide variety, look towards the skills a person needs to perform to reach a reasoned judgment, and query how confounding intellectual character traits could impede the appropriate application of the skills. The virtues stand in opposition to these confounding traits.

Once an instructor decides which virtues are most important, considering the skilled thinking the instructor wishes to develop in her students, the next step is to explicitly introduce those virtues and try to foster them in her students. In this chapter I have articulated a way to discover the virtues in relation to skills, and have illustrated this by demonstrating how some of the most important skills are connected to virtues. I have also shown that this method applies across any

conception of critical thinking skills. In the next chapter, I envision classroom contexts where critical thinking virtues may be explicitly introduced, and discuss classroom interventions that in my experience help to foster both willingness to inquire and the other important virtues of critical thinkers. In the final chapter of this thesis I compile a series of assignments which are also intended to foster such virtues.

## 5 CLASSROOM INTERVENTIONS

### 5.1 INTRODUCTION

A sceptic might grant for the sake of argument my claims about the connection between critical thinking skills and virtues, acknowledging that in pedagogical interventions the virtues should be explicitly introduced in an attempt to foster them in students. Such a critic might still wonder just how those virtues should be taught and measured in the classroom, however. It is one thing to teach a person the capabilities she must put into practice to think critically, and it is another thing to foster the character traits that will contribute to a person actually using those skills in efforts at inquiry. As is evidenced by the prevalence of an excessive focus on skills (Hare, 1999, p. 90), drilling them through the repetition of end-of-chapter exercises (Missimer, 1990, 1995, 2005), skills seem to be not only less challenging than virtues to teach, but also less challenging to measure: skill education makes sense because at least we can see whether a person has certain abilities or not based on how they do on an exercise or exam that requires them to use those abilities.

For example, being able to spot a formal fallacy such as denying the antecedent on an exam question shows that one knows what that fallacy is and can

identify it in an exam scenario. But it is difficult, if not impossible, to measure a virtue in an analogous way. For a person might self-identify as having some virtue or demonstrate behaviour that is indicative of the virtue, but unless that person consistently exhibits that trait, it cannot properly be called a thoroughgoing excellence of that person. In addition, measuring virtues usually takes the form of Likert-style self-reporting assessments (see for example Insight Assessment's California Critical Thinking Dispositions Inventory (2014) or their Business Attributes Inventory (2014), and also see the Wabash University Center of Inquiry Need for Cognition Scale<sup>1</sup>). Some (e.g. Steiner, 1994) argue these type of self-reporting instruments are susceptible to social desirability bias and satisficing biases, so it might be doubtful that such measurements tell us anything more than the test-taker's apprehension of what is the socially sanctioned answer, or that the test taker took the most careful and conscientious approach to completing the exam. In other words, there is a risk in any such measurement that the test taker can anticipate what the test administrator is seeking to know, and is being deceptive and only responding in the way he or she thinks the test administrator wants to hear. Therefore, the sceptic might argue, even if the virtues are part of being a critical thinker, in practice it cannot be shown that teaching them is

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<sup>1</sup> found at <http://www.liberalarts.wabash.edu/storage/assessment-instruments/NCS.doc>

successful, because of questions regarding how well the phenomenon is being measured.

However, Facione (BAI User Manual, p. 43) has convincingly responded to any charge of social desirability bias that could be levelled against Insight Assessment's dispositions inventory instruments, when he says that the Marlowe-Crowne Social Desirability Scale (a measurement of how truthful a respondent is) indicates that respondents to Insight Assessment's range of dispositions measurement instrument are not being deceptive when they respond. Facione says that the key element of deterring social desirability bias is lessening test "transparency" (p. 43), or in other words writing questions that attempt to conceal the desirable response that a test-taker might try to glean from the way a question is phrased. By phrasing questions in sometimes positive, sometimes negative terms, and by prompting test responders to agree or disagree with statements that appear neutral at face value, where "test taker[s] fail to see that agreeing with those statements results in a self description that is an unflattering and undesirable response" (p. 43), social desirability bias can be avoided.

Also, while it does not obviate the complaint about being able to do well on an exam but never manifesting what is tested in the "real" world, a similar critique could be made about skill testing: even though skills can be more easily measured in an exam scenario, a person still might have some problem being able

to put that skill to use in a real-life situation. If she is to be a critical thinker approaching the ideal, a person who knows how to identify the fallacy of denying the antecedent in everyday reasoning (not only in an exam scenario) should also be the kind of person who would actually be disposed to look for such fallacious reasoning in her own or other people's thinking. Having recognized such a fallacious move, such a person would ideally also be willing to correct for it. This deep seated tendency goes far beyond what can be measured in an exam that tests for some ability only in the context of the exam-taking. As I argued in chapter 4, the ability to identify a fallacy means very little if that ability is not coupled with both a self-reflective awareness of the potential for committing such fallacious moves and the commitment to correct for them should such moves be committed. If a person can reliably identify a fallacy on an exam, she will be on her way towards passing the exam and the course, but if she does not consistently monitor her own thinking for fallacious moves and seek to correct for them, then that knowledge and skill is wasted on such a person, because it makes no practical difference in her intellectual behaviour. She is not a critical thinker. Whether someone does well on a skills test, then, is not necessarily an indicator of that person's tendency to actually use that skill in practice, even if it signals an ability to use the skill in the artificial environment of an exam scenario.

So skills can be measured on exams because in correctly answering a test question for which at least *some* skill is required, a test taker demonstrates some minimal level of the skill in question. Since some questions may be less indicative of skill possession than others, even obtaining correct answers on a skills test might not guarantee that a person is highly skilled. So even though skills can be tested, being a demonstrably skilled thinker on an exam does not tell us whether a person is really thinking like a critical thinker in her everyday life, putting her skills to use appropriately. Nor does it tell us that a critical thinker increased her skill levels as a result of the course she took in critical thinking, as she could have had those skills before she took the course (cf. Hitchcock, 2004). As such, in order to be confident that our instruction in critical thinking really does improve critical thinking skills, pre-test data would have to be compared to assessments taken at the end of the term of instruction, and compared to a control group that either received no intervention, or received some alternative instruction. Such scholarship has certainly been undertaken (e.g. Facione and Facione, 1997, Hatcher, 2009, 2011, Hitchcock, 2004), but its labour intensity has prohibited it from becoming a common pedagogical practice. The result is that instructors can only hope that their instruction is actually doing what it is ostensibly supposed to be doing, and what is reflected in some of the literature that shows instructional



efficacy in critical thinking: at the very least, improving the cognitive skills students need to think critically.

These considerations are intended to cast into relief the assumption that critical thinking virtues, if they are to be taken seriously as an explicit pedagogical initiative, should be measured in a way like skills: on an exam. Skills in an exam scenario might be able to be measured in a more straightforward way than virtues, but this is no reason not to try to teach the virtues. Since we can be successful in teaching the skills yet be unsuccessful in producing critical thinkers who use those skills and use them appropriately, and since someone can do well on an exam testing her skill without that person necessarily having learned the skills in the course in which they are tested, it seems clear that, whether or not virtues can be reliably measured in the same way as skills, they are nevertheless an important aspect of what it means to be a skilled thinker who is the kind of person who actually uses her skills in practice. How, then, can we know we have taught people to be better critical thinkers, if not through exams?

I will begin to address this question in this chapter, but first a note on the assumption that virtues cannot be measured as well as skills. For, as I also mentioned previously, testing-instruments for dispositions do exist: Insight Assessment, for instance, has a popular testing instrument that “inventories” a person’s attitudes and habits of mind through self-reporting. This instrument has

been used for decades, so that results of current test-takers can be meaningfully compared to the results of those who have taken the test in the past. As mentioned above regarding critiques of social desirability bias in such instruments, self-reporting might not be an objective measure of whether someone has a virtue or not, since by definition what such instruments measure is a subjective perception of one's self. As such, a critical thinking disposition inventory will at most tell us whether someone perceives themselves to have some particular attitude or at least wants to portray themselves as having it. Since a person could be either misapprehending their own character, or more wilfully exaggerating the view of themselves for the purposes of the test, or even unconsciously skewing answers so that they fit a socially sanctioned paradigm, such tests have a very different quality than skills exams. So the question remains whether such tests are valid, that is, whether they are really measuring what they claim to measure. It seems that such self-reporting tests, because of their subjective nature, do not tell us the entire story about a person's thinking tendencies and values other than what that person chooses to share. They are thus not a "test" of such virtues in the same way that most critical thinking exams test skills.

If we are being candid with ourselves as critical thinking educators, we have to admit that the prospect of inputting students into a one-term introductory critical thinking class and outputting full-blown critical thinkers is slim, for the

generalizable reason that an introduction to a subject is not enough to make one an expert in that subject, but also because if being a critical thinker really is about being a certain sort of person, it is a lifelong endeavour that requires imitation, practice, and a great deal of failure and learning from those failures in order to achieve a result that in any way approaches the ideal. But since the end result is an orientation towards critical discourse, it is only in the process of consistently responding appropriately to potential avenues of discourse that a person can be said to have that orientation, not through any one test or through any series of tests over time. It is an open question, then, whether the following interventions or others will in actuality help to produce better critical thinkers – are skilled and also virtuous, even if such interventions are shown to have results in the short term: what we would need are longitudinal studies that demonstrate such an effect. Absent such studies, we can have interventions that provide some evidence of effectiveness in fostering firm intellectual attitudes that might transfer across subject areas, and that would contribute to a student being the sort of person who will utilize her skills in her everyday thinking. In what follows I will articulate some interventions that in my experience have yielded improvement in the attitudes and approaches that students bring to critical thinking, especially the central motivating attitude that is a person's willingness to inquire.

## 5.2 FOSTERING WILLINGNESS TO INQUIRE

As Begbie (2007) argues, critical thinking disposition “[i]nterventions must take account of issues of confidence, socialization, learning contexts and requirements for dialogue” (p. 17). This section will try to be sensitive to these various issues that are involved in fostering the motivation to think critically. Fostering the general motivation to engage issues as a critical thinker is further complicated by the fact that it is not motivation *simpliciter* that we recognize is a necessary part of someone being a critical thinker. As I have argued in Chapter 4, willingness to inquire stands contrary to the “motivated inference” that cognitive psychologists deem an error tendency: when someone has a distorted judgment because of their background purposes (cf. Thagard 2011, p. 156-159). A critical thinker is motivated by something other than the motivation that produces this error tendency: whereas motivated inference is inspired at least in part by the felt need to maintain a conclusion because of some purpose of the belief-holder, willingness to inquire is inspired by a desire to be accurate, get as close to the truth as possible, and be well justified in one’s beliefs and actions. The former motivation leads to a reasoner maintaining a judgment already reached on the basis of ulterior motives other than reasoned judgment, even in light of evidence to the contrary, whereas the latter motivation leads a reasoner to carefully

examine an issue in order to reach a reasoned judgment, even should the evidence point to a conclusion contrary to one already reached. A formulaic way of putting the point is that a motivated reasoner is interested in reaching a belief and maintaining it in spite of evidence, whereas a critical thinker reaches and maintains a belief in light of evidence. In this sense, a reasoner who is motivated, either consciously or unconsciously, to some purpose other than a reasoned judgment, is so invested in a judgment already reached (or a prejudice already reified) that they value the maintenance of that judgment even at the cost of it not coming as near to the truth as possible, and not being a judgment reached taking sufficient account of other considerations. Such a thinker is clearly not a critical thinker, should such motivated inference be characteristic for her, for that motivation would tend to stand in the way of a reasoned judgment from being reached through a process of a careful examination of an issue. So it is a properly motivated kind of reasoning we are after when we speak of willingness to inquire, the kind of motivation we hope to foster in our children and students.

But willingness to inquire is more than the contrary of motivated inference. It is also more than the self-correcting of error tendencies. For without the motivation to correct for those tendencies, knowing about them will not help a person improve her reasoning. This view is corroborated even by researchers who aim to curb error tendencies in medical practitioners (Croskerry, et al., 2013b)

when they say that “[t]he extent to which a physician tends to engage—and succeed—in debiasing depends not only on his/her prior knowledge and experiences but also on thinking dispositions” (p. 66). Furthermore, these researchers grant as a major caveat to their intervention strategies for correcting cognitive bias that “for biases to be successfully addressed, there needs to be such awareness *as well as the motivation* for change” (p. 65, emphasis added). If fostering willingness to inquire were merely a matter of correcting for motivated inference or any other error tendency, then it could conceivably be accomplished through indoctrination, or coercion, or some external motivation such as monetary payment. A critical thinking student who was paid \$100 every time she self-corrected for her motivated inference, for instance, might very well become adept at self-correcting for that behaviour, even to the degree that such behaviour might cease to be common for her when it had been in the past. But this would not be the kind of motivation we seek to foster in our students, because while the student would be correcting for bad intellectual behaviour, she would not be doing it for the intrinsic value of such an intellectual orientation, but rather for something that has nothing to do with being a critical thinker: greed. In other words such a student would not really value the ends to which properly motivated thinking is put, but instead would see those ends as only intermediate towards a more final goal (in their mind) of making money.

It would also be ineffective, not to mention improper, to seek to foster willingness to inquire through either indoctrination or coercion. As I argued in Chapter 4, a student who only monitors and self-corrects for motivated inference in her critical thinking class under the threat of a failing mark would not be the kind of person we seek to educate. Since such a person is only externally motivated to be aware of her cognitive biases, outside of class it is not likely the lesson will “stick” and the person be motivated to seek reasoned judgment on her own. In addition, the moral concern with indoctrination is that a person who is indoctrinated is not treated as a person who can think for herself. Such a person would be treated as a kind of epistemic robot, programmed into doing what she thinks is the right intellectual thing to do, but doing so because she was told, not because she independently and freely valued such thinking on her own. The situation is similar for fostering willingness to inquire through indoctrination. An indoctrinated student, who remains unreflectively indoctrinated, is no kind of critical thinker, because then her thinking is cut-and-pasted from the template of someone else without an independent awareness of the basis of her belief, and this too is the antithesis of what it means to think critically. In addition, one important aspect of the educational ideal of critical thinking includes respecting students’ intellectual autonomy. But indoctrinating students disrespects that autonomy because it assumes they cannot see the value of the substance of the indoctrination

and need to be paternally guided in their intellectual choices and actions. So critical thinking instruction on my conception could not coherently occur should the instructor seek to indoctrinate her students into being the kind of people who possess and manifest willingness to inquire.

Finally, self-monitoring and self-correcting for (self-perceived) motivated inference or other cognitive biases do not tell us the whole story of what it means to be a critical thinker: for a person who can self-monitor and self-correct but who is unable to listen to others who critique her thinking should not be considered a critical thinker either. In other words, a person who can give criticism to herself but who cannot take it from others will not be the kind of person who will tend to be successful in correcting for her biases. A critical thinker should be able to metacognitively be aware of bias, but correcting for it is also something that occurs in the social context of argumentation, debate, and discussion. Without being open to criticism, a person cannot be expected to reliably and effectively improve her thinking to try to mitigate the effect of bias.

So far I have been addressing the need to avoid biased thinking when reflecting on an issue. But an equally and perhaps more fundamental aspect of becoming a critical thinker is to be able to recognize the need for reflection in the first place—to realize that something more than an automatic response is required. My position is that this kind of issue-awareness should be the default attitude in a



critical thinking class, permeating all instructional efforts. Out in the world, relying on heuristics for decisions that need to be made expeditiously is less problematic than when there is time for reflection in the classroom. Transferring this classroom attitude out into the world, however, is a problem that I do not solve in this thesis. What we can do in our classroom activities is stress that our default attitude when confronting significant issues in our lives should be to pause to reflect, as opposed to making a snap judgment: it is not always so pressing to make an immediate decision that we should feel justified in failing to carefully reflect on an issue at hand.

So it is not just any motivation we seek to foster, but the special motivation that is willingness to inquire: the motivation that drives a person to seek out reasoned judgment through critical inquiry, and that orients them towards recognizing controversial issues that deserve reflection. And we cannot hope to foster this in our students with the aim of educating critical thinkers who approach the ideal if we coerce, indoctrinate, or otherwise seek to foster the virtue with only external rewards. How else should we seek to foster them? Like the moral virtues, critical thinking virtues are only properly acquired, if they are acquired at all, through practice and imitation; in this way the formula for critical thinking virtue acquisition is analogous to the formula for critical thinking skill-acquisition, since we want students to emulate and adopt the kinds of attitudes required to be critical

thinkers, and this will require feedback when instructors notice failures of proper attitudes. Whereas the “practice” part is not like skill acquisition, where some discrete task is attempted, still, instructors must put students in situations where their attitudes and values become manifest in dialectic with peers, and then those aspects are made explicit to the participants, when comments made could be made more open-mindedly, fair-mindedly, respectfully, etc. One important aspect of fostering willingness to inquire is thus for instructors to diligently manifest that virtue in our own thinking when interacting with students, inside or outside of class. Of course, if a critical thinking instructor is to be a true critical thinker herself, then she must already characteristically manifest willingness to inquire. But as an instructor, she must do so more conscientiously, and certainly more explicitly. In addition to conscientiously modeling willingness to inquire in classroom practice, instructors can design classroom activities that explicitly point to the virtues, and to willingness to inquire in particular. The goal of such activities would be to impress upon students the instrumental and intrinsic importance of the proper motivation to be a critical thinker. The remainder of this section will be an exploration into the conscientious techniques of modeling willingness to inquire, and the classroom activities that through practice and repetition I argue will help to foster that virtue, and work to mitigate the tendency to be motivated to defend an unexamined view from alternatives, even when those

alternatives should be compelling. The hope is that, as with skill transfer, the sorts of attitudes and values that contribute to a person seeking reasoned judgment on the occasion of a classroom or take-home assignment will transfer – across contexts to their lives apart from their duties as a student. This hope can be maintained even in the light of criticisms like that of Leave (1988), who casts into doubt the idea of skills transfer by pointing to evidence which suggests that, even if skills sometimes transfer across educational contexts, such as from one class or subject to another, they do not always transfer to the world at large, outside of educational contexts (p. 71). But while this may be true of skill transfer, and as critical thinking pedagogues we would hope there is more chance of “real world” transfer than Leave suggests, we need not be so pessimistic regarding the critical thinking virtues on this basis. For a virtue is not a skill, and is not used the way a skill is used. Indeed, part of the reason why skill transfer is not seen outside of educational contexts may be that the proper attitudes and motivation have not been properly fostered. Perhaps the solution to real-world transfer is an explicit focus on being the kind of person who seeks to engage in inquiry and uses her skills appropriately.

One classroom exercise that can be repeated with slight variations involves students articulating “gut reactions” to certain news stories, narratives from history, interchanges between politicians on legislative floors, or even

fictional dialogues. The phrase “gut reaction” is suggestive for students being introduced to the idea of willingness to inquire, because the very idea that one undertakes a critical stance in a process of inquiry is precluded if one hastily decides on a judgment before any such inquiry takes place. “Gut reaction” is also a fortunate phrase in this regard because if one is to think critically one must do so with one’s head, not with one’s gut. This allows instructors to introduce the idea of System-I thinking (“reactive, instinctive, quick, holistic”) versus System-II thinking (“reflective, deliberative, analytical, procedural”) (Facione and Gittens, 2012, p. 183), which is an instructive bit of knowledge that should help students become more cognizant of the need to approach some issues relying more on heuristics and training, but to approach others with a more reflective stance. So the very set-up of this classroom exercise tips off students that such thinking is not typical of a critical thinker.

Part of that set-up might include a quote such as the following from Stephen Colbert, which he made as the keynote speaker at the White House Press Club Dinner in 2006. The tradition at these dinners is that the keynote speaker lampoons the President, who is always in attendance. At this event Colbert is lampooning then-President George W. Bush, who is sitting a few seats away from him when the speech is delivered; however, the purpose of this set-up is not to make a political point. Rather it is to use irony to hit home the idea that gut

reactions to things are very seldom productive of truth and certainly tend to produce something other than a reasoned judgment. To then defend such gut reactions at any cost is to add salt to the wound of an already injurious intellectual motivation. Below is the transcription of the relevant part of the speech:

[T]onight it is my privilege to celebrate this president, 'cause we're not so different, he and I. We both get it. Guys like us, we're not some brainiacs on the nerd patrol. We're not members of the factinista. We go straight from the gut. Right, sir? That's where the truth lies, right down here in the gut. Do you know you have more nerve endings in your gut than you have in your head? You can look it up. Now, I know some of you are going to say, "I did look it up, and that's not true." That's 'cause you looked it up in a book. Next time, look it up in your gut. I did. My gut tells me that's how our nervous system works. Every night on my show, *The Colbert Report*, I speak straight from the gut, okay? I give people the truth, unfiltered by rational argument. I call it the "No Fact Zone".

After watching this video clip as part of the initial set up to the exercise, students are then prompted to defend gut reactions to issues by any rhetorical means necessary, ignoring or unreflectively downplaying alternative views. In effect, students are encouraged to be the most (intellectually) viciously motivated thinkers they can be in terms of maintaining their original gut reaction. In this way, students get to experience the contrary of willingness to inquire in a conscious, visceral way. They also get to see their peers engage in the artificially adopted error tendency, so have a firsthand view of how this cognitive bias can lead us all astray in our intellectual endeavours. This can yield dividends in impressing upon students the importance of being motivated to seek a reasoned

judgment because a gut reaction will tend not to be the most defensible position on an issue compared to a judgment reached carefully through an examination of a wide array of evidence and arguments.

The point of an exercise such as this is to reinforce the importance of seeking a reasoned judgment even in the face of a view one already holds. But it is also a warning against using a snap judgment in a context where one is not appropriate. This too is a way of illustrating willingness to inquire, because to be the kind of person who characteristically seeks a reasoned judgment means to be the kind of person who does not rely too heavily on heuristics unless they are warranted. As such, this kind of exercise is appropriate for introducing students to the heuristic strategies that are sometimes effective, but that do not represent the kind of reflective thinking that critical inquiry represents.

Another classroom intervention that has the potential to get students into the habit of looking at questions through a critical lens with the aim of reaching a reasoned judgment is to design written assignments so that they are done in groups rather than individually. Assignments that require students to submit work individually perpetuates the idea that critical thinking is a solo intellectual exercise. But critical thinking is properly seen as more than just an internal mental process that people undertake without regard to their external environment. This is especially true when one considers that other people, other thinking people,

make up a good part of our external environment. Respect for dialectical partners has already been shown to be an important virtue that is necessary for a person to have if she is to be a critical thinker approaching the ideal. So too, as mentioned above, is valuing the criticisms that others might legitimately make in response to our arguments and cases. This can be assured to be undertaken by students if peer evaluation is part of the assignment, to mitigate the potential for some students in groups to do the minimum work possible and allow others to do the work. Therefore, written assignments should at least in part be undertaken in groups, where students must work together to meet a common goal of reaching a judgment on balance.

This can help to foster willingness to inquire as well, in the following way: by organizing the group inquiry-process methodically, requiring students to share the intellectual burden of discovering the evidence and arguments on various sides of the issue, by an intelligent division of labour in the inquiry process. As an illustration, see the following excerpt from an assignment for a final group inquiry essay in a second year undergraduate business ethics course. This assignment is more than a group assignment, in that it asks students to go through a full blown process of inquiry as a group.

You will need to consider plausible objections to your position, rejoinders to those objections, implications of your position, and alternatives with their supporting arguments—in effect, considering carefully the strongest responses to your core argument or arguments that a supporter of some

other position could make. This is part of the role different group members with different ideas will play in contributing to the report: everyone with alternative perspectives should contribute those perspectives to the group's process of balancing different arguments in order to come to a reasoned judgment on the issue you determine the case prompts. If there is a uniformity of perspectives among group members, then group members should undertake a concerted effort to think of the strongest alternatives, dividing the intellectual labour of the group to gather the various perspectives that must be considered in order to come to a reasoned judgment on balance.

The assignment from which the above excerpt was taken is based on a case study.

The assignment asks students to formulate the various issues the case brings to the fore; it asks them to contemplate the various sides of the major issue they decide is operative in the case; and it asks them to balance the considerations against one another in a process of reasoning that leads to a reasoned judgment about the major moral issue involved in the case. It specifically asks them to divide these various components amongst themselves, so that each group member is responsible for at least one line of argumentative thought that they must then incorporate into a dialectical exchange with their other group members in an attempt to reach a reasoned judgment.

The rationale for this approach is that requiring students to go through a process of reasoning that is clearly only one element in an undertaking that involves a total balance of considerations judgment has the potential to reinforce in students' minds the totality of lines of reasoning that are required for such a



reasoned judgment to be reached. In other words, students get to experience the process of reaching a reasoned judgment in such a methodical way that it slows down that process and breaks it into its constituent lines of reasoning, each of which deserves its own careful attention. This argument-building towards a conclusion, when it happens at all, is often the last step in an undergraduate's reasoning. To attempt to support a claim with an argument or a series of arguments is not enough, however, to reach a reasoned judgment. For the argumentation that is involved when the dialectical obligations of the arguer are taken seriously is what this assignment tries to stress. As such, a student will be reminded at every stage of this assignment that her own approach to the issue for the sake of the assignment is only one of a few potential approaches, and that whether some approach is better justified will only become clear as the arguments are compared to each other and as the dialectical space between them is made explicit.

Since critical thinking is directed towards reasoned judgment, willingness to inquire should be fostered in a way that pays attention to that end. Fostering willingness to inquire thus is about instilling a value for reasoned judgment as the primary end of critical inquiry, especially relative to other ends to which our intellectual efforts could be put. Classroom interventions thus should all pay explicit attention to other intellectual ends that instructors might witness students

pursuing other than reasoned judgment. Not only can instructors be on the lookout for other such motivations in the classroom, but students themselves should be encouraged to self-monitor and peer-monitor for the end-directed activities that do not fall in line with reaching a reasoned judgment or that might otherwise tend to work against such a process.

Another strategy that could be employed to foster willingness to inquire stands opposed to the typical inclination of critical thinking instructors to organize some kind of “debate” as a project. While requiring a debate as an aspect of class-design might be appropriate in a debate or public speaking course, in a critical thinking course it might turn out to be antithetical to the goals of instruction, especially if my conceptualization of critical thinking is granted. For debate-scenarios are naturally adversarial, but critical thinking should be seen as cooperative; debate is furthermore a matter of persuasion rather than of justification, whereas critical thinking is about reaching a conclusion on a balance of considerations; dialectic disappears in debate and concessions and revisions are failings and weaknesses, at least when debate is pursued in a dominantly eristic fashion, but in critical thinking, and in a critical thinking class, an eristic approach and debate framed by opposition is not the best approach if we want to foster people’s attitudes and values so that they will be the kind of people who seek a judgment reached on balance. Since that judgment cannot be foretold, and to

revise one's views appropriately in light of new evidence is one of the greatest successes a critical thinker can have, an eristic approach to debate will tend to foster attitudes antithetical to the critical thinking virtues.

This is all to say that debate *as an eristic pursuit* is not the proper activity for a critical thinking class. But this is not to say that people cannot disagree, or dispute different positions, or that people should not be encouraged to actively engage each other on the points which they do disagree. It is not to say that framing some issues pro and con is not legitimate. Rather, it is to say that the purpose and organization of debate must change. First, debate can no longer be about defending an entrenched view at all costs, with the expectation that at the end of the communicative exchange, something will necessarily be resolved. This stands directly opposed not only to debate as it is traditionally instructed in the United States, but also to an alternative approach to argumentation from Europe, found in the pragma-dialecticians van Eemeren and Grootendorst (1992). For them, argumentation is about resolving a difference of opinion, and in the extended pragma-dialectical theory that allows for strategic manoeuvring, there are the goals of the participants: of the protagonist to justify her standpoint and of the antagonist to prevent the protagonist from doing so.

But in a critical thinking class, what kind of resolution can we hope to expect when 1) the disagreement concerns issues of real and contemporary

controversy that are actively debated and 2) most students are being introduced to the explicit skills of critical thinking and the dispositions of critical thinkers for the first time? The answer is that we should not expect or even trouble to spend too much effort on making the resolution of disagreement our goal of critical thinking. Therefore, while we should be realistic and assume that students come to an introductory critical thinking course with strong beliefs and complicated ways of understanding those beliefs, we should not expect that those beliefs will change too drastically as a result of instruction. Rather, the expectation of the reality of student disagreement should be that the basis of that disagreement be made more clear, that it be articulated as fairly and as clearly as possible so that it is understood, and that it is examined in as fair a light as possible. The end sought is not resolution of disagreement based on agreed upon starting points and rules of inference, but some judgment that is known only when inquiry pauses to assess all the relevant information and arguments and evidence, to find that, for this moment at least, the cases for the various sides have been made and the verdict can be rendered provisionally, until new evidence or argument can be brought to bear on the process.

How to have contrary arguments, then, allowing students to express their ideas and their beliefs and their disagreements, while emphasizing the special ends of critical thinking? If some way can be devised, then willingness to inquire

can be fostered, because positive experiences aiming towards something other than winning or persuading might lead students to want to have more of those experiences more often, and will thereby be a motivational factor when out in the real world where disagreements arise.

My answer to the problem of reconceiving the critical thinking debate activity is a simple pedagogical plan that involves the whole class, but as in a debate spotlights two people and their opposing views. The set up is simple: two chairs at the front of the classroom, so the participating students can see one another. The rules of the exchange are simple as well: there is a question at issue, the question phrased according to the criteria of a well-stated issue. The participants are to address the question, with the only caveat being that they disagree either in their “gut response” to the issue if it is something they have not reflected about, or about their current judgment on the issue, whatever it happens to be. Then the procedure is as follows: they each give their reasons for their belief, whatever it is. This involves stating not just their reasons but also their belief. Once each participant has stated their belief and their reasons for their belief, each participant gets a chance to respond to the other person. Before a response can be given, however, the position being responded to must be articulated to the satisfaction of the person who first articulated it. Only when an

alternative view is articulated to the satisfaction of the person whose view it is can that view then be responded to.

This serves a number of purposes, all of which work towards fostering willingness to inquire, in addition to other virtues, and other skills for that matter. Since paraphrasing is such an important academic and intellectual skill, for instance, this experience is important in that it requires students to put into their own words the positions of others. This is made more challenging by the fact that these views are at odds with a student's own view, and that the person is sitting in front of them, and that the disagreement is occurring in a public place with onlookers. But this is just the sort of realistic skill we expect students to be able to apply across a wide range of texts and other communicative messages, whether face to face or through interpreting mass media. But willingness to inquire is specifically fostered in such an activity for the following reason: "success" in this "debate" is not a matter of winning, but of following the paraphrasing rule well. Ideally, the way practiced critical thinkers would behave in such a situation is to very rarely have to be corrected by their "opponent" in the debate. So that the giving and exchanging of reasons would flow with a minimum of correction, or at the least a maximum of sensitive, conscientious, fair, and open-minded correction, all with the immediate end of articulating well the other person's position.

Another intervention I propose involves classroom technology, and peer instruction, as conceptualized by Mazur (1997, 2009). Lecturing arguably stifles willingness to inquire, because often times, especially when a lecture is a purely didactic presentation of information, attending one is a passive activity that requires paying attention, but offers no stimulation to thinking other than note-taking and information gathering. Students need to be given not only presentations that convey important information and concepts and disciplinary knowledge, but also the opportunity to employ that knowledge and those concepts in real attempts to understand issues, solve problems, address questions, search for assumptions, and imagine alternatives. But sitting in a lecture does not work to encourage active thinking on the part of the student. This is an aspect of the interventions so far described that lends them some credibility, because in all the activities described something more is happening than the traditional lecture format: students are not being passive but are actively engaging the ideas at stake individually, and as groups. The same kind of “authentic learning” (cf. Herrington and Herrington, 2006, pp. 1-14) can be accomplished through the use of classroom response systems. Through the use of such technologies, instructors are able to conduct polling, allowing students an opportunity to discuss the material amongst themselves before registering a response to the system. First they key an

answer to a prompt as individuals without peer support, and then they are retested after peer consultation.

This method of instruction could help to foster willingness to inquire in the following way: because class time is spent in activity rather than passivity, and because students earn points for participation that do not count on the judgment of the instructor but are automatically counted and registered, students might be more motivated to attend class and to participate in a productive way. Large class sizes make student participation in front of the whole class unlikely except for those students who are the most confident in front of their peers. But anonymous polling means that students can participate as a large group without being singled out. Then, by discussing answers with others in small groups, students get the immediate feedback they need on their thinking. Whereas in a traditional lecture format a student might not feel inclined to ask a question in front of the whole class, in small groups a question can be asked with a different set of expectations as to who is responding to it. This can make all the difference for a student who might feel intimidated by a class of 150-plus peers potentially responding to her idea. The evidence that such technology makes substantial differences in educational outcomes, if properly employed through the right classroom approaches, is widespread (e.g. Crouch, et al., 2006, Caldwell, 2007, Smith, et al., 2009, Beatty, et al., 2006, Bruff, 2009).



Another intervention and course design tactic to foster willingness to inquire involves tutorial format. Tutorial format should be thought through carefully, and definitely should not be didactic. Since tutorial sections are always smaller than the regular lecture sections, there is more opportunity for the instructor (tutorial leader, or TA) to interact with students. There should be ample opportunity then not only to provide more detailed clarification for students, but also to let student-guided instruction be the norm for classroom situations. In fact, incorporating a classroom response system technology into tutorial groups is possible too. The values of anonymous polling do not disappear when the class is smaller: TAs can still profitably see who has grasped a concept and who has not, and whether there is a chance for students who do have a concept understood to profitably instruct their peers in that knowledge.

In these and other ways the desire to engage in critical thinking can be fostered through the appropriate classroom design and management of activities. Such explicit attention to willingness to inquire should be made in the classroom throughout a term of instruction, and whatever is preached by an instructor should also be practiced by her. The most important aspect of fostering willingness to inquire is a constant reinforcing of the end of critical inquiry, through the practice of doing full-blooded inquiry, managed in a classroom setting. The question “will practice in doing full-blooded inquiry transfer into the everyday realm and

permeate a student's life such that they always critically inquire into questions when it is appropriate for them to do so?" is an inevitable one, but since I am merely presuming that a person who is not exposed to inquiry and the aim of reasoned judgment will tend not to value inquiry *compared* to the person who is exposed to inquiry methods as I have adopted them from Bailin and Battersby, and because my programmatic suggestion is based on a serious neglect of critical thinking pedagogy that is common, there need not *yet* be definitive evidence that instruction in this way will yield a significant and measurable improvement in critical thinking ability or willingness over the long term, much less that such instruction yields people with full-blown virtues by the end of instruction. Though such evidence would be welcome, the intuition that providing some explicit instruction is better than nothing is sufficient to merit some attempt at the effort, so long as there is no evidence that explicitly suggests instruction for the virtues would be positively harmful. Since the notion of inquiry I am operating under is furthermore distinctive, I am unaware of any literature that has tested for critical thinking ability or disposition improvement using this approach, either immediately after a short-term period of instruction or after an extended period following such instruction. As such, in the classroom interventions that I have described above stressing inquiry I hope to expose students enough to a process that comes to their minds and influences them in appropriate circumstances

calling for reflection. It is only when a person is fully committed to careful thinking for the sake of reasoned judgment that they can be said to be a thinker who has a thoroughgoing willingness to inquire.

### 5.3 FOSTERING OTHER VIRTUES VIA CLASSROOM INTERVENTIONS

In the final sections of this chapter I will continue where I left off, except that, whereas in the last section I focused on classroom interventions to foster willingness to inquire, in these sections I will articulate interventions to foster the most prominent critical thinking virtues, other than willingness to inquire: fair-mindedness, open-mindedness, and respect for dialectical partners. In the chapter that follows, I compile and provide rationales for critical thinking take-home *assignments* that I argue will foster the virtues. For now, however, because the virtues are intertwined, and sharp boundaries do not exist between a person's overarching willingness to inquire and the amalgam of attitudes and values that in part contribute to the emergence and maintenance of that willingness, I point out that many of the classroom interventions that mean to impact a person's desire to engage in inquiry will also impact the virtues that are a part of employing the skills of critical thinking in a consistent and appropriate way.

For instance, the classroom activity I discussed at the end of the last section, the revised and rethought critical thinking debate, is meant to help students become more aware of the desire to reach ends that are different than adversarial winning, but it can also be seen to foster other attitudes as well. In that classroom activity debate is recast into a listening exercise that stresses paraphrasing the views of others. This exercise reminds students of the importance of the ends they are seeking in thinking things through: whereas the default attitude among debaters is too often an adversarial attitude that seeks as the ultimate goal to defend a settled view in an eristic exercise, the aim of this classroom activity is for the people who engage in it to come to an understanding of the alternative and nuanced perspectives that exist on the issue other than their own, and in the opinions of their peers, to be able to articulate those views, and to be able to respond to them appropriately. Conscientiously paraphrasing fosters willingness to inquire because it stresses a goal other than an adversarial one based on one-upping a rhetorical opponent, thus encouraging students to seek something through their intellectual exchange with others other than a judgment defended against all comers without regard to the probative critiques such alternative views are apt to contribute to a process of careful examination. I will now show how a modified, less eristic classroom debate helps to foster other virtues in addition to willingness to inquire.

### 5.3.1 FOSTERING FAIR-MINDEDNESS

In the modified classroom debate I have in mind, not only willingness to inquire is fostered by encouraging students to seek other aims besides eristic ones. In order to paraphrase an idea, either spoken or written or visualized, with the intention of using that understanding and interpretation in a process of inquiry, one must be fair-minded in one's paraphrase. In other words, in order for a paraphrase to be a good paraphrase for the ends of critical inquiry, it must be paraphrased fairly: paying due attention to the intention of the author, if it can be divined, to the context of the idea as it is expressed, and to the notion that to add to or subtract from the meaning of the original idea as it was expressed is not only to do a disservice to the person who expressed the idea, but also to throw a wrench into the activity of inquiry. The debate exercise that stresses paraphrasing as a key component thus is an opportunity to explicitly mention the idea of fairness: how a person who habitually is able to paraphrase in this way is the kind of person it is necessary to be in order to be a critical thinker. A person who does not paraphrase fairly, however, and tends in general not to be fair-minded in her other intellectual activities, will have no chance of being a critical thinker so long as that trait, antithetical to critical thinking, is a part of her.

### 5.3.2 FOSTERING OPEN-MINDEDNESS

Fostering open-mindedness is also something that can be achieved through a revised debate format. By being exposed to alternative perspectives, students are encouraged to think about how those perspectives bear on an issue at hand. By being supplied with these perspectives in a social context, rather than trying to merely imagine those perspectives on one's own, they can think in an open-minded and expansive way on an issue without having to rely on a purely imaginative or empathetic response from their own cognitive resources. In other words, a person who has marshalled his or her own arguments regarding some issue but has not yet attempted to formulate an exhaustive or even preliminary dialectic of alternatives is given the opportunity to have those alternatives formulated already. This ready-made formulation aids in the process of taking an open-minded approach because it supplies the thinker with resources she might not otherwise have had.

### 5.3.3 FOSTERING RESPECT FOR DIALECTICAL PARTNERS

Respect for one's dialectical partners is necessary for being a critical thinker, because without valuing the potential contribution others can make to inquiry, a reasoned judgment will tend not to be reached. It should be a background guiding

assumption whenever an alternative perspective is encountered. Again, the virtue is discovered by imagining what kind of inquirer a person would be if she habitually disregarded other people's views, not thinking there was any worth to the perspectives of others, especially those who hold alternative perspectives. The background assumption in such a case would be a guiding generalization to the effect that "other people do not have anything worthwhile to offer to my analysis of issues, so I need not take their views seriously when I make a judgment". But clearly a person who is a critical thinker should not approach other perspectives, and more importantly, the other people who hold them, in such a disdainful and disrespectful way. So clearly respect for dialectical partners is an important characteristic of a critical thinker. This very quality is explicitly mentioned by Bailin and Battersby (2010) themselves (pp. 13-14, 192-207, *passim*).

Without fairly stated alternatives to bring to bear on an issue, the whole picture will not be seen by the inquirer, and a reasoned judgment is less likely to be reached. Without receptivity to such alternatives and how they might bear on the issue at hand, a critical inquiry will tend not to proceed. So the exercise helps to foster fair-mindedness and open-mindedness in addition to willingness to inquire, virtues that contribute to a person being the kind of person who critically inquires.

But this exercise helps to foster respect for dialectical partners as well. For to be fair in interpreting the view of another person, to be open to those considerations as potentially contributing to the reasoned process of inquiry bearing on the issue at hand, and to be willing to seek reasoned judgment, or at least understanding, instead of some more adversarial goal, is also to acknowledge that the person with whom one is interacting in the inquiry process is deserving of respect in that process. The activity thus puts students in a situation where they must pay attention to others and respect their participation in the inquiry process. Just calling explicit attention to the ways a person can participate in the exercise can help to foster respect for dialectical peers. This could be accomplished in a similar way to the motivations that some instructors put on syllabi, explaining to students the kind of participation they expect in class. Such motivating statements for these classroom exercises would stress the idea of positive, professional and respectful participation that is required for inquiry, and for a classroom activity that prioritizes listening, understanding, and other goals over any kind of adversarial contest. In the written motivation for the activity, which every student should receive prior to engaging in it, and which an instructor should take care to introduce before beginning, students can be told something like the following:



Students are expected to positively and professionally participate, which means conducting oneself according to basic group norms including (but not limited to): attentiveness, cooperativeness, civility, thoughtfulness, honesty, and openness. Most importantly, students are expected to treat their peers with respect, valuing the contributions others make to the exercise. Showing respect for one's dialectical partners is important to practice because it is easy to forget to be respectful when we feel a strong desire to be right, or when we strongly self-identify with our beliefs. We all might admit things like "everyone has the right to their opinion", but consistently being willing to listen to another person in a respectful way, respecting that right, attending to body language, actively listening with good eye contact, and substantively valuing their contribution by taking it seriously with respect to one's own, is another matter, something this exercise is meant to foster.

As Tindale (2006, p. 343) says, citing Perelman and Olbrechts-Tyteca (1969):

Any community requires a range of commonalities of language and of interests that binds it. But entering into argumentation with others also confers value upon them, recognizes them as *worth* persuading and attaching importance to their agreement (1969, p. 16). Establishing communion with an audience (in the rhetorical sense) involves understanding their positions, viewing things from their perspective and sharing that perspective to some degree. Moreover, this attitude elicits "some concern for the interlocutor" and requires that the arguer 'be interested in his state of mind' (2006, p. 16).

#### 5.3.4 ANOTHER INTERVENTION FOR FOSTERING RESPECT

There are other interventions, besides this rethought debate exercise, which will help to encourage respect for dialectical partners. The activity I describe next is

motivated by the idea that stepping outside of the examination of an issue under inquiry, and learning about one's dialectical partners and their orienting perspectives (what important contexts exist that help to explain how some person perceives and understands things), will encourage inquirers to be more cognizant of the alternative perspective their partner has from their own. Partners in inquiry should be continually reminded of the reality of the other people engaged in inquiry: a reality that includes the past experiences and orienting attitudes that bring a person to the present time, with their positions and values and decisions they make daily. In a way this exercise is merely informative: each dialectical partner in inquiry shares with their partner some details about how beliefs came to be formed, how attitudes were shaped, how values were instilled, and how behaviour was chosen. The hope is that the human element of reasoning and inquiring is never lost on the student, and that when engaged in the process of inquiry the issue at hand is the focus, but in the background remains the fact that each person brings to bear their own perspective, and that this is the great commonality we as dialectical partners share: our subjective experience of what makes an issue important, relevant, and worth inquiring about. Dialectical peers who share stories, informing each other about the intellectual and affective space each person occupies, relate to each other in a more intimate and personal way; this experience will hopefully make the inquiry process not merely an intellectual

exercise based in an individual's head, but more viscerally connect the inquirer to the other inquirers in the process, grounding the activity as a social enterprise that is not merely intellectual.

The exercise is this: ask students to share with their dialectical peers one thing that their parents, or significant adult figure in their lives as children, wanted to instil in them: a belief, an attitude, etc. These facts from a person's life can range from conformity to a religion's ideology (if the student is willing to share such personal information) to being taught that lying is wrong. They can be study habits, ways of treating other people, ways of being a consumer, ways of speaking or eating, etc. The point is to get students to acknowledge a commonality of all believing people: that at one time we were children, and that we were all highly influenced by other people, especially our parents, in terms of how we approach the world. The activity continues when this bit of information is shared, and each person shares how things have changed in their adult lives: did this influential value or belief that their parents tried to instil in them stick into their adulthood? Each partner now reflects briefly on what might account for the way the belief or attitude or value was maintained or not. Then, for each partner, the exercise is repeated: if the person first shared a fact about their past when their adult figure instilled a value that is maintained, now each partner shares the opposite, something an adult tried to instil but that the student in their adult life has not

embraced, and why. Partners then report back to the class at large the commonalities and differences in stories that they shared with their partners. The class as a whole gets to hear the common experience people share of being shaped by the attitudes and values and different ideas that they are exposed to as children.

#### 5.4 CONCLUSION

This chapter has been an effort to articulate the kinds of classroom interventions that might help to foster willingness to inquire and the other virtues associated with critical thinking skills. In the next and final chapter I compile a series of take-home assignments and provide a rationale for each, arguing why it has some potential to have a positive effect on the critical thinking virtues.

## 6 ASSIGNMENTS TO FOSTER CRITICAL THINKING VIRTUES

### 6.1 INTRODUCTION

In this thesis I have made an effort to articulate what the critical thinking virtues are and how they are an essential part of the ideal critical thinker. I have defended and used one definition of critical thinking that is congruent with my articulation of the critical thinking virtues, but I have also argued that the critical thinking virtues as I conceive them align with other conceptualizations as well.

Furthermore, I have argued for a way of discovering the virtues through their relation to the transferable thinking skills that ideal critical thinkers must possess, and I have advocated for a theoretical view of the critical thinking virtues that makes them a central part of any critical thinking pedagogy. I have also provided practical intervention strategies for fostering a classroom environment that explicitly pays attention to the critical thinking virtues, through in-classroom activities. This final chapter closes this thesis by offering a small selection of take-home assignments intended to foster the critical thinking virtues in conjunction with the classroom interventions I described in the previous chapter.

For each assignment, I provide a brief rationale for it, which in part situates it in a way that is aligned with any mainstream critical thinking

curriculum that is focused on teaching critical thinking skills. I also frame each assignment in terms of how it could help to encourage specific critical thinking virtues, as indicated by the skills that are required for the assignment. Then, I provide a version of each assignment itself, which could be modified depending on the kind of subject-specific content the instructor is working with. For instance, the assignment on confounding attitudes in the media could be focused on business or commerce journalism in a business ethics course, whereas in an applied bioethics course the same assignment could be applied to health-related media.

This content is inspired by and borrows from Battaly (2006), an important paper that argues for a theoretical understanding of the intellectual virtues from the perspective of virtue epistemology, and that attempts to answer the question of how we can “cultivate intellectual virtue in our students” (p. 191). Battaly helpfully articulates some plausible classroom interventions and take-home assignments meant to foster such intellectual virtues as open-mindedness, a motivation for the truth, and a respect for evidence (pp. 210-218 *passim*). As such, Battaly’s effort anticipates my aims in this thesis, providing an important account of the kinds of pedagogical interventions that an instructor who recognizes the importance of the intellectual virtues can use in her classroom practice.

Battaly's discussion is situated in the virtue epistemology debate of the virtues, a debate that I have sought to avoid, because addressing relevant epistemological concerns would take me far afield of the topic of this thesis. Still, Battaly's efforts to theoretically elucidate the concept of an intellectual virtue, and to provide classroom tactics to instruct for the intellectual virtues, are evidence that recognizing cognitive virtues in the classroom, as opposed to strictly moral virtues, can be taken seriously by pedagogues. Critical thinking instructors thus need not immerse themselves in the debate among virtue epistemologists to take the critical thinking virtues seriously, but the upshot of Battaly's article can still be appropriated by them. This is to say that, following Battaly, while instructing for the intellectual virtues is a fallible endeavour, we should nevertheless proceed with confidence in our instruction, believing that giving students an opportunity to practice the virtues is better than giving them no opportunities at all, and that these opportunities will help to foster in them a desire to put their skills into practice as a part of their routine and characteristic way of interacting in the world (p. 218). In this way Battaly rightly expresses optimism about explicitly teaching the intellectual virtues, modeling them in classroom practice, and most importantly, allowing students various curricular ways to practice the virtues. Such efforts attempt to give students an opportunity to consciously aim for the virtues, and to notice them and be more cognizant of them in various real-life

discourses. My approach to the instruction of the critical thinking virtues takes this optimism as a constructive starting point for what I take to be plausible programmatic suggestions.

## 6.2 ASSIGNMENT ONE: CRITICAL THINKING VIRTUE LOG

**Rationale:** Battaly suggests the “daring strategy” of “incorporating a week of intellectually virtuous practice” (p. 216) into curricular efforts to instruct for the intellectual virtues. Part of this “virtue week” would be the requirement of students to “maintain a log of the intellectually virtuous actions [they] perform” (p. 216) outside of class. This could be lengthened to a term-long project for those who are more daring. The requirement in either case is for students to attend to the opportunity to perform the intellectually virtuous actions that they have been exposed to through classroom activities and lecture, and encouraged to perform outside of class. Battaly lists such virtuous actions as “to listen to ideas that conflict with their own; to defend their own ideas against objections; to admit that they were mistaken; and so on” (p. 216), but others can be thought of as well: to refrain from making a judgment before all the evidence is in (exhibiting patience); to not seek a reasoned judgment when a quick decision is needed (exhibiting discernment); to double check an unknown source and critique it to make a



judgment that it is authoritative (exhibiting thoroughness); and the list could go on. Students are thus required in one straightforward way to take note of the everyday opportunities to put into practice the attitudes, values, and orientations that will tend to enable them to use their skills appropriately in efforts at critical inquiry. The logs could be checked on a weekly, bi-weekly, or monthly basis. Students in out-of-class situations would be required to note the context and substance of the discourse in which they were able to use some skill, and to do so (or not) in an intellectually virtuous way. The occasions for the performance of intellectually virtuous actions might come from “discussions (in or outside of the classroom), written papers, or oral presentations; or in conducting research, analyzing problems, or evaluating current events or the media (outside of the classroom)” (pp. 216-217).

The rationale for this assignment is thus to get students to become explicitly aware of the virtues they could be manifesting, or that they do manifest, or that they notice that others could be manifesting or do manifest, in their real-life interactions outside of the classroom.

**Learning Objectives:** Students should be able to accurately and effectively document the skills and associated virtues they put to use, or that they could have put to use, in their everyday lives.

**Assignment:** The assignment for a critical thinking virtue log might look something like the following. Again, these requirements might seem demanding or particularly challenging for students (as Battaly remarks a virtue log will be) but that is why it could be tried as a week-long or two-week-long assignment.

#### Critical Thinking Virtue Log

**Aim:** The aim of this assignment is to get you to pay explicit attention to opportunities to practice the skills of critical thinking in conjunction with the critical thinking virtues.

**Log Entries:** Note the situations outside of class where you have an opportunity to critically reflect on some discourse you are confronted with: something you read, watched on television, or found on the Web; a conversation you had or overheard concerning a controversial political issue; a difficult decision you had to make; a problem you had to solve but could not. Note the time and day and any contextual factors that you think may have had an influence on the way you responded to the situation. Note the skills you put to use in thinking about the discourse. Finally, note in particular the attitudes and values, and the overarching motivations you had in employing those skills. In short, note the opportunities you had to engage your skills in a virtuous way. Note the opportunities when you could have used the critical thinking virtues but you did not. Why not? Note opportunities for others to have used the virtues. What was the context and situation of those instances and did you notice virtuous actions from them? If so, describe them.

### 6.3 ASSIGNMENT TWO: GROUP CASE STUDY ETHICAL INQUIRY

**Rationale:** 1) to offer students the opportunity to develop their analytical and evaluative skills concerning relevant and current issues that have an ethical dimension, via a case study approach; 2) to encourage the group inquiry process

as a method of inquiring into those issues found in case studies; 3) to illustrate the applicability of ethical concepts and considerations to issues of practical relevance; and 4) to encourage students to see the value of thinking critically about the ethical import of such issues, and to realize how their intellectual virtues are tied to the skills they must use in that effort.

Group assignments require students to be motivated to generate, organize and delegate tasks in a participatory way among a group of their peers. Such interaction sets the stage for a great many skills of critical thinking to be put to use in ways that require a person to exhibit the intellectual virtues, if their thinking and behaviour is going to help in the creative process of writing an inquiry-style essay as a member of a group. Requiring group assignments is a tactic that has the potential to pay dividends, but it is made risky among other reasons by the fact that often some students within a group may tend to be less motivated than others, there are sometimes free riders, and some other students are thus more liable to have a greater share of the work to do; thus, the group assignment becomes less a group assignment than it is designed to be. Instructors should mitigate this either by having a peer evaluation be a part of the assignment or by requiring students to sign a document when they submit their report attesting to the work each group member contributed to the project.

**Learning Objectives:** The objectives of this assignment are for students to be able and more disposed 1) to analyze and evaluate discourse in their everyday lives; 2) to work with others in a group inquiry process; 3) to recognize the ethical import of everyday issues in any discipline-specific context; 4) to articulate, demonstrate, and reflect on the skills and virtues that are required for them to consistently think critically.

**Assignment:** The assignment for the group inquiry report might look like the following.

#### Ethical Inquiry Case Study Group Report

**Aim:** The inquiry report will be guided by a series of critical questions (see below). The main difference between this report and other essays is more explicit attention to the process of critical inquiry leading up to a reasoned judgment on the **normative** issue with ethical import which you decide to focus on, and your explicit use of the concepts and principles that are at work in normative ethics, as applied to the context contained in the case study.

You should assume a neutral audience, without a strong pre-conceived position on the normative issue you determine to be involved in the case, and without much information on it besides the case itself. Assuming a neutral audience does not commit you to a neutral stance. Rather, the presentation of your inquiry and whatever stance you reach should be directed towards a person who has not yet come to a judgment on the issue, but who will come to the most reasonable judgment based on the case you present. You will have to decide how to formulate both the issue and your arguments for your position on them. Sometimes the strongest support for your position will come from a single, well articulated, complex line of argument leading to your position as the conclusion.

You will need to consider objections to your position, implications of your position, and alternatives with their supporting arguments—in effect, considering carefully the strongest responses to your core argument or arguments that a supporter of some other position could make. The entire set of arguments and responses and the judgment reached on their basis represents the entire case to be made, and the making of that case can be accomplished efficiently if different group members with different ideas each play a contributing role to the report by offering alternative perspectives. Those perspectives round out the case a group makes, offering an opportunity to balance different arguments in order to come to reasoned judgment on the issue contained in the case. If there is a uniformity of perspectives among group members, then group members should undertake a concerted effort to think of the strongest alternatives, dividing the intellectual labour of the group to gather the various perspectives that must be considered in order to come to a reasoned judgment on balance.

Your essay should be written in the standard format of an undergraduate essay. Typically, it will have an introductory paragraph or paragraphs, in which you motivate and state what you determine the issue to be, and announce the position (thesis) you will be arguing for. After the introduction you might want to contextualize the issue very briefly. The body of your essay will make the case for your positions on the issue, and a concluding paragraph will summarize things. Sub-headings help to orient your reader to the process of your reasoning.

**Guiding Questions:** Your case study report must be guided by the following questions.

- 1) What is the major issue or issues at play that you will be addressing in the case report? Remember the criteria that make for a well stated issue (focused; controversial; stated as a question; precise; neutrally phrased), and motivate your articulation of the issues you will inquire into.
- 2) What are the strongest arguments on the various sides of the issue? Remember the different lenses of normative ethics that one can look at issues through.
- 3) What are the strongest objections to the strongest arguments?
- 4) How do the strengths of the different arguments stack up against one another?

- 5) What is your confidence in your reasoned judgment based upon your critical inquiry?
- 6) What critical thinking virtues did you put into play, and how were they linked to the skills you had to use in writing this group inquiry?
- 7) In what specific situations did you use those skills, and aim for the virtues?

#### 6.4 ASSIGNMENT THREE: THE WILL IS THE WAY

**Rationale:** Because willingness to inquire is the cardinal critical thinking virtue, it makes sense to require a take-home assignment meant to specially address the inculcation of this virtue. As such, this assignment is meant to challenge students to become more consciously aware of their own tendency to pursue critical inquiry.

**Learning Outcomes:** Students should be able to articulate instances when they sought reasoned judgment, or when they could have sought a reasoned judgment. Students should be better able to identify instances when critical thinking would be appropriate. Students should be able to better articulate why or why not critical thinking is called for in some situation from their everyday lives.

**Assignment:** The following assignment could be given to help students become more aware of their own willingness to inquire.

### The Will is the Way

In this assignment you are required to describe and reflect on experiences where an inquisitive attitude seeking reasoned judgment is called for, and when it is not. Describe a situation from your everyday experience where there was some interaction with another person, or an encounter with some discourse, which either called for critical inquiry or did not. Justify your reasoning for why the situation called for critical inquiry or not. Then take note of whether you engaged in inquiry. What were the circumstances or explanations for why you either did or did not engage in critical inquiry, if it was appropriate for you to do so?

## 6.5 ASSIGNMENT FOUR: CONFOUNDING ATTITUDES IN THE MASS

### MEDIA

**Rationale:** Ever since the inception of the critical thinking movement, pedagogues have been aware that students are met with a barrage of advertisements and other efforts to get their assent or to move their action on some issue through the mass media: newspapers, television, and increasingly on-line media. Explicit instruction in mass-media self-defence has thus become important for modern students, who today are no less apt to be the target of efforts to influence behaviours and beliefs through the mass media.

As is often the case, for example in instances of associative advertising, such influence tends not to be offered in a reasoned way, based primarily on the facts. Students in their everyday lives thus are subject to influence from the mass media in a way that runs counter to the aims of a critical thinker. This assignment,

requiring students to document and evaluate confounding character traits in the mass media, thus offers students a way to go into the world and develop through critical reflection a habit of noticing the failed opportunities for virtuous intellectual behaviour in the mass media, especially the news media.

**Learning Outcomes:** Students should be better able to identify confounding attitudes in mass media discourse. Students should be better able to articulate what attitudes and behavioural manifestations might correct for such confounding traits.

**Assignment:** Confounding attitudes in the mass media.

#### Failure of Virtue: Identifying Confounding Attitudes in the Mass Media

Describe in detail a non-fiction discourse from the mass media: e.g. newspapers, magazines, television programs, web logs, social media, etc., and identify any confounding attitudes that if habitually manifested would make someone less likely to be a critical thinker approaching the ideal. Justify why you think the person is manifesting behaviour that is consistent with having a confounding attitude. Reflect on ways the person could have manifested other attitudes and values that would have been more appropriate for critical inquiry. Explore why you think the person manifested (or did not manifest) those traits, in light of the context of the discourse.



## 6.6 CONCLUDING REMARKS

The four assignments above are meant to provide some indication of the kinds of take-home projects instructors can assign in their critical thinking classes, for those who are interested in explicitly instructing for the virtues. Such assignments give students an opportunity to pay explicit attention to the virtues in their own thinking and in the thinking that other people display in real-life discourse. They give instructors a way to call explicit attention to intellectually virtuous actions, to model them in class, and to encourage students to engage in them outside of class.

This list of assignments could be expanded, however, merely by adapting existing take-home assignments by adding on a virtue component. Any assignment that requires students to utilize certain critical thinking skills is an assignment that could be adapted to include explicit attention to the virtues.

Whatever skills some assignment requires, students can be prompted to think of the kinds of character traits an ideal critical thinker would have in order to put those skills to their most appropriate use in efforts at critical thinking. In this way students can be prompted in all the assignments they do to reflect on how their attitudes, motivations, and intellectual orientations relate to the critical inquiry at hand.

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In this way, students can be given many different opportunities to try to engage their skills in the most intellectually virtuous way, aiming towards reasoned judgment in their efforts at practicing inquiry.

## 7 CONCLUSION

In this thesis I have argued for a particular conception of the critical thinker and for an application of that conception in efforts to instruct critical thinking. In a word, critical thinking instructors should recognize the conceptual importance of the critical thinking virtues, and should seek to foster them in their students.

Rather than summarize and recapitulate the road travelled so far, which I have done in each chapter throughout my treatment, I will use this concluding chapter as a way to indicate the next steps and implications that my thesis suggests.

The first implication of my thesis is that critical thinking education is a kind of character education. This is problematic for a number of reasons, perhaps most of all for political reasons: if critical thinking is about educating for character, then it has a strong moral dimension that some would surely claim should be kept out of our educational efforts. Education, especially public education, should not be about instilling morals, but about teaching skills that will lead to professional and intellectual development.

However, as I have argued in this thesis, abstracting a person's skills from the kind of person they need to be to employ them consistently and aptly is a mistake. If we want students not just to be able to do certain things, but to be the kind of people who actually do them of their own accord, then education should

be about more than instruction in the techniques that allow a person to engage in a process or procedure. If we think that a process or procedure is valuable enough to teach, we should want to encourage our students to value it too, in such a way that they will want to learn it and eventually apply it in their lives as a regular part of their experience in the world.

To this end, critical thinking pedagogues should be aware of current scholarship in critical thinking pedagogy. In light of a recent meta-analysis of studies evaluating instructional efforts at critical thinking, undertaken by Abrami, et al (2008), pedagogues should understand that if they wish to foster critical thinking in their students, they must do so explicitly as an additional part of their curricular instruction “as an independent track within a specific content course” (2008, p. 1121). This strategy, according to Abrami’s meta-analysis, has a better chance of fostering the skills and virtues of students than does the “immersion” method of using already existing curriculum and expecting students to learn critical thinking “as a by-product of instruction” (2008, p. 1121). It also has a better chance of good outcomes than the “general” approach, where critical thinking skills “are the explicit course objective”, and the “infusion” approach, where critical thinking skills “are embedded into course content and explicitly stated as a course objective” (2008, p. 1121).

The upshot of my thesis regarding the instruction of the virtues is analogous to Abrami's conclusion regarding the instruction of critical thinking more generally: to recognize the importance of the virtues is not enough, if in our instruction we do not pay explicit attention to them. Recognition of the pedagogical value of the virtues brings me to a second major implication of my thesis: just as pedagogues might wish to instil critical thinking *skills* into their students but will tend to fail to do so unless that instruction is made explicit as an independent track of content within a curriculum, so I surmise will the critical thinking *virtues* fail to develop in our students if we as instructors are merely aware of them, and seek to "infuse" them into our already existing curriculum without paying explicit attention to them in separate lectures and in specifically tailored assignments we require our students to complete.

Critical thinking virtues thus deserve their own place among the standard curricular topics in a critical thinking course, which tend to stress the skills of critical thinking. Just as there are commonly units on using language unambiguously, analyzing arguments, and evaluating sources, so there should be units on open-mindedness, valuing fallacious-free reasoning, charity, and willingness to inquire. These need not be full-blown lessons taking up one or more entire 50-minute class periods, or full chapters in textbooks. Mini-lessons and lectures of 15 to 20 minutes, coupled with in-class assignments, take-home

assignments, and other reading assignments, could be sufficient. They would do more than what is now typical, which is to neglect any mention of the virtues at all. So my conclusion is to urge instructors that to pursue critical thinking virtues in the classroom they must work to make them a clearly defined and separate aspect of their course, so that the ideas and the activities are delineated for students as those that concern what it takes to have the right character of a critical thinker.

In the Winter term of 2014 I had the opportunity to instruct Introduction to Business Ethics at McMaster University, and decided to incorporate a critical thinking “independent track” of curriculum into the course content. Part of that independent track was to call explicit attention to the critical virtues that go into ethical decision-making in business, through the use of mini-lessons on argument and inquiry, and through a number of group inquiry reports based on case study readings, due throughout the term. In addition, part of that independent track of critical thinking curriculum within the business ethics curriculum was to explicitly call attention to the virtues and to have students pay explicit attention to them in their various group processes. While I did not attempt to measure the effectiveness of my instruction in either the skills dimension or the virtue dimension of my critical thinking interventions, the next steps in my research would be to clarify the interventions used and to measure their effectiveness

compared to other intervention strategies. I conjecture that, as with the findings in the Abrami, et al. meta-analysis, the most promising avenue for success in fostering the critical thinking virtues is to instruct for them explicitly as an independent track within an already existing curriculum.

This hypothesis could be investigated through the use of pre- and post-test data using testing instruments such as the California Critical Thinking Dispositions Inventory (CCTDI) and the California Critical Thinking Skills Test. A control group would receive instruction in business ethics with explicit attention to critical thinking skills as an independent track of the curriculum, but with no explicit attention to the virtues. Comparing the control group to the intervention group that receives explicit critical thinking instruction as an independent track in both skills and virtues, higher gains from pre-test to post-test should be observed on the virtue side.

In sum, this thesis establishes a theoretical vantage point for future efforts to instruct for the critical thinking virtues. Validation or invalidation of those efforts offers a promising opportunity for future research.

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